3 Existing environment

3.1 Environmental context

3.1.1 Overview

The environmental characteristics of any area influence the way people who have occupied it used the landscape. In the past, the availability of resources such as drinking water, flora, fauna, stone material and topography, played a substantial role in the choice of camping, transitory and ceremonial areas used by Aboriginal people. Understanding the role of environmental factors assists with predictions of the locations of Aboriginal sites and the likelihood of the sites being preserved. Additionally, natural and cultural (human-made) post-depositional site formation processes influence the present location (eg if moved through disturbance), preservation, and archaeological integrity of archaeological material across a landscape.

3.1.2 Landscape overview

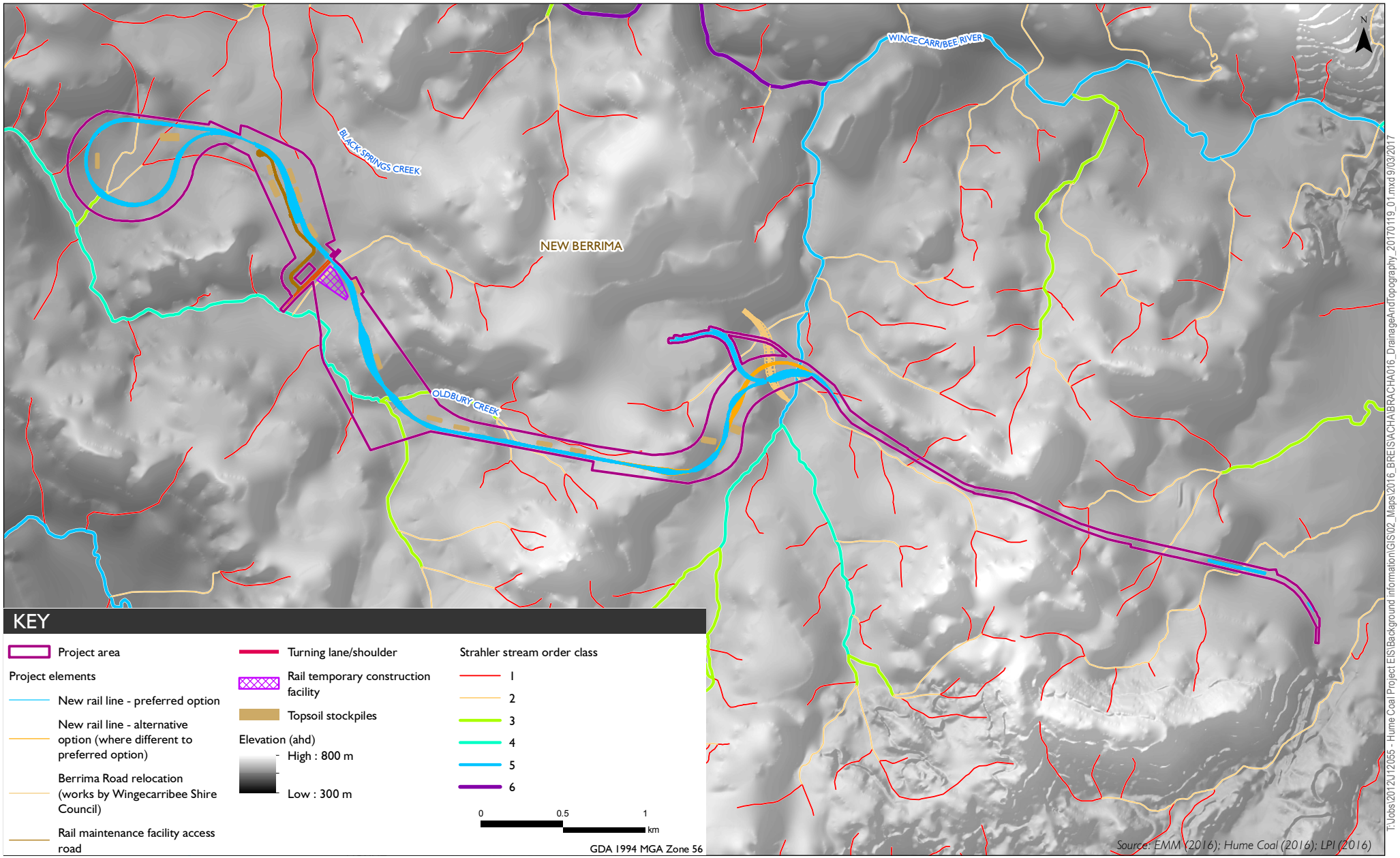
The region is characterised by the elevated Woronora-Nattai Plateau which remained relatively flat when uplifted in the late Tertiary Period. The primary topographic feature is the residual volcanic peak of Mount Gingenbullen 2 km south of the project area. Mount Gingenbullen is a 70 ha flat-topped mountain with a dolerite extrusion. It is a product of the more erosion resistant characteristics of the Jurassic and Tertiary basalts and dolerites when compared to the surrounding sedimentary sandstones and shales.

The project area is characterised by low rolling hills, with an underlying geology of Wianamatta Shales. Outcropping sandstone is almost non-existent but very occasionally occurs as small boulders. Local relief is generally low to very low. Drainage and topography is shown in Figure 3.1.

An escarpment, made up of large expanses of outcropping sandstone scarps, cliffs, ridges and stream channels, forms to the west of the project area in the Belanglo State Forest and increases in relief in a westerly direction.

3.1.3 Drainage

The project area is part of the Wingecarribee River catchment which is a component of the broader Warragamba Dam and Hawkesbury-Nepean catchments. The Wingecarribee River flows north-west before it reaches its confluence with the Wollondilly River north of Tugalong. The main drainage features in the project area are Oldbury Creek (4th order stream in accordance with the Strahler system of stream order) and its tributaries and Stony Creek (5th order) and its tributaries. Oldbury Creek and its tributaries flow through the western half of the project area and Stony Creek flows through the north-eastern part of the project area as a 5th order stream that drains directly into the Wingecarribee River to the north. Drainage and topography is shown on Figure 3.1.



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Drainage and topography

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Aboriginal cultural heritage assessment

Figure 3.1

3.1.4 Geology

The project area is on Hawkesbury Sandstone geology in its western portion and Wianamatta Group shales in its eastern portion (Figure 3.2). The Wianamatta Group shales were laid down in the Middle-Triassic Period above Hawkesbury Sandstone geology. Ashfield Shale is the earliest sequence in the Wianamatta Group shales which forms a cap to the Hawkesbury Sandstone. Bringelly Shale is the most recent deposit in the sequence. It was deposited in an alluvial plain and cut by streams flowing from the west to east and formed discontinuous beds of sandstone. It is similar to Ashfield Shale but generally has higher sandstone content.

3.1.5 Soil landscapes

The project are contains a number of soil landscapes which are defined in the *Soil and Land Resources of the Hawkesbury-Nepean Catchment* (DECCW 2008) (Figure 3.3). The soil landscapes present are Kangaloon, Lower Mittagong and Moss Vale. The Lower Mittagong erosional landscape occurs on rises and low hills and comprises Yellow, Brown and Red Podosols, Yellow Earths, Red and Brown Earths and Soloths. The Kangaloon transferral landscape occurs on foot slopes and plains and comprises Yellow Podosols and Humic Gleys. The Moss Vale erosional landscape occurs on lower hill slopes and comprises Yellow, Brown and Red Podosols, Yellow Earths, Red and Brown Earths and Soloths. None of the soil landscapes are predicted to contain outcropping sandstone (DECCW 2008), however small boulder outcrops cannot be discounted given the sandstone geology underlying the Wianamatta shales that cover the project area.

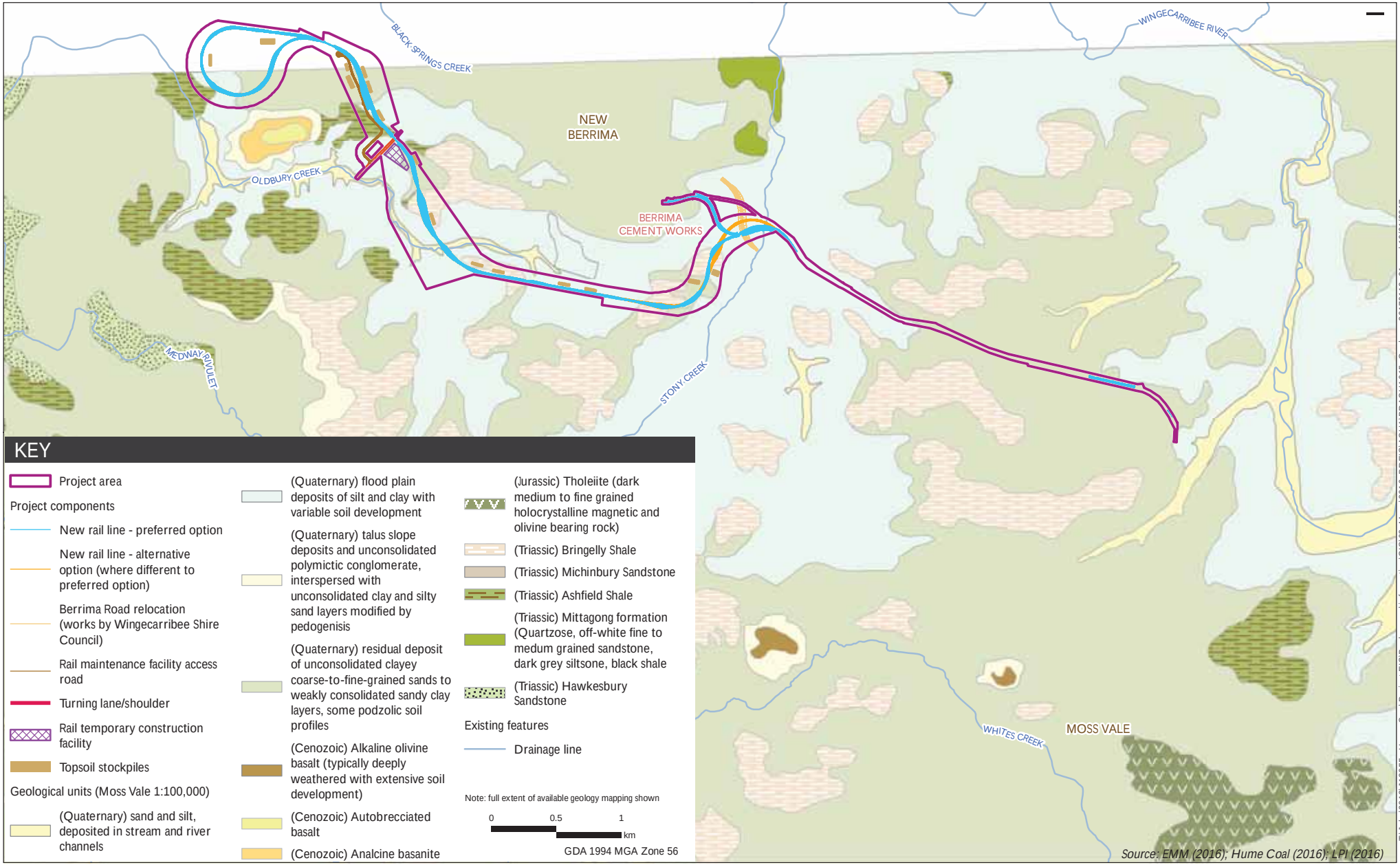
The eastern part of the project area, where the new railway line meets the existing Berrima Branch Line, is considered to be disturbed terrain as it occurs within the existing railway easement.

3.1.6 Land use and disturbance

The project area has largely been cleared of vegetation and used for agricultural purposes for approximately the last 150 years. The eastern part of the project area, where the new railway line meets the existing Berrima Branch Line, is disturbed terrain as it occurs within the existing railway easement.

The earliest available aerial imagery of the project area is from 1949 (Figure 3.4). The landscape of the project area remains very similar to this photograph today. By 1949 the project area had been extensively cleared and ploughed to a similar resemblance of the current landscape. Vegetation clearance has resulted in only small pockets of isolated trees remaining in the project area which are remnant or regrowth native vegetation. Notably, there is a cluster of native vegetation directly south of Berrima Road which has been partially cleared since 1949 but still retains the same general boundary. However, a significant number of changes has since occurred in the broader locality surrounding the project area; for example, the Hume Highway comprising a divided carriageway, the Berrima Cement Works increased in size and the addition of the Berrima shale quarry, house numbers increased significantly in Berrima, New Berrima and Moss Vale, new industry (eg Inghams) developed, enlargement of Medway Dam, establishment of the Berrima sewage treatment plant, and the addition of new local roads.

The main activities that are likely to have removed or highly disturbed Aboriginal sites in the project area include the construction of roads, electricity easements, pipelines, water diversion bunds, vegetation clearance and damming of streams. Other activities that are likely to have disturbed Aboriginal sites include repeated ploughing, cropping, fencing and to a lesser extent, livestock grazing.



EMM HUMECOAL

Geology of the project area

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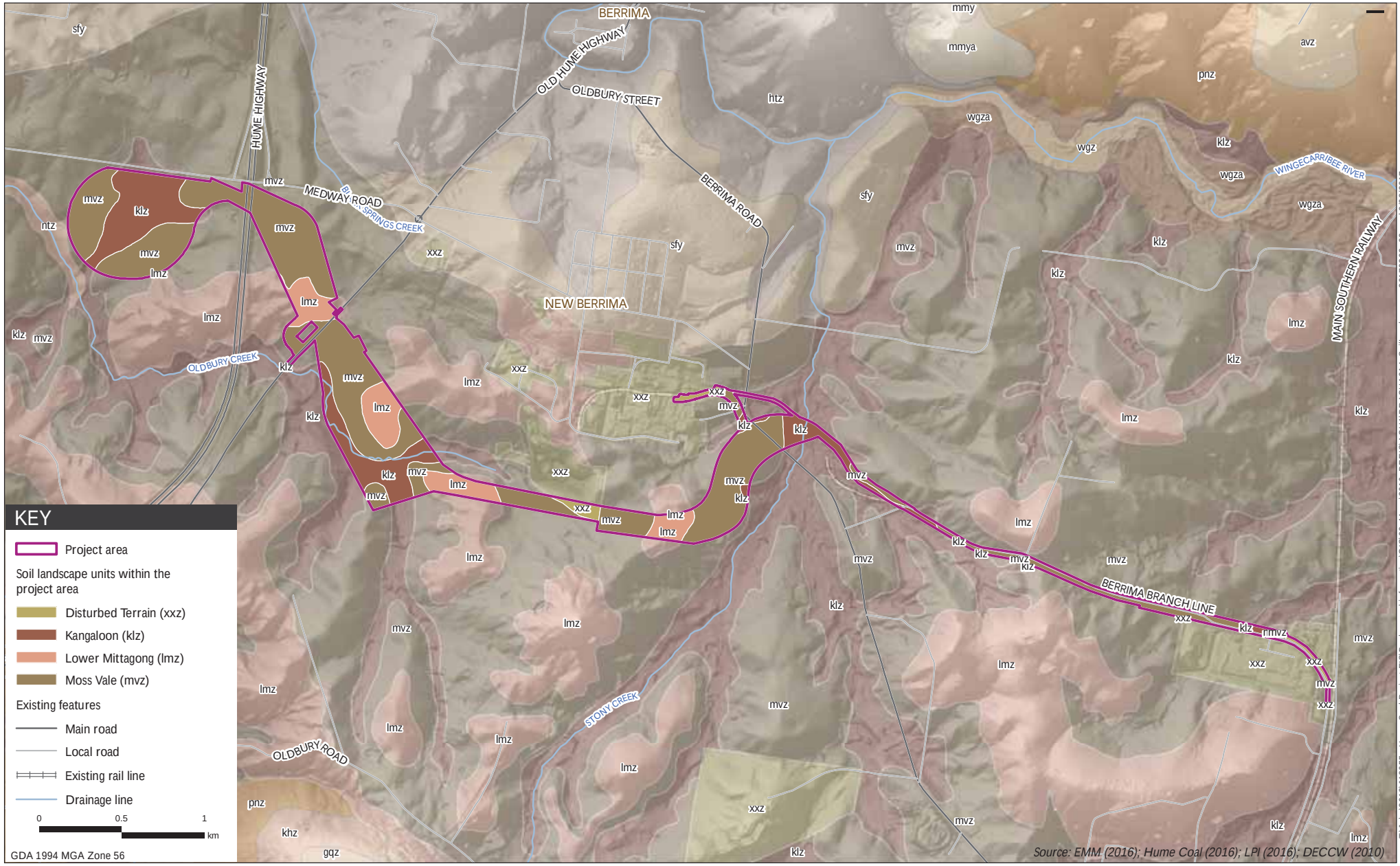
Figure 3.2



Soil landscapes of the project area and surrounds

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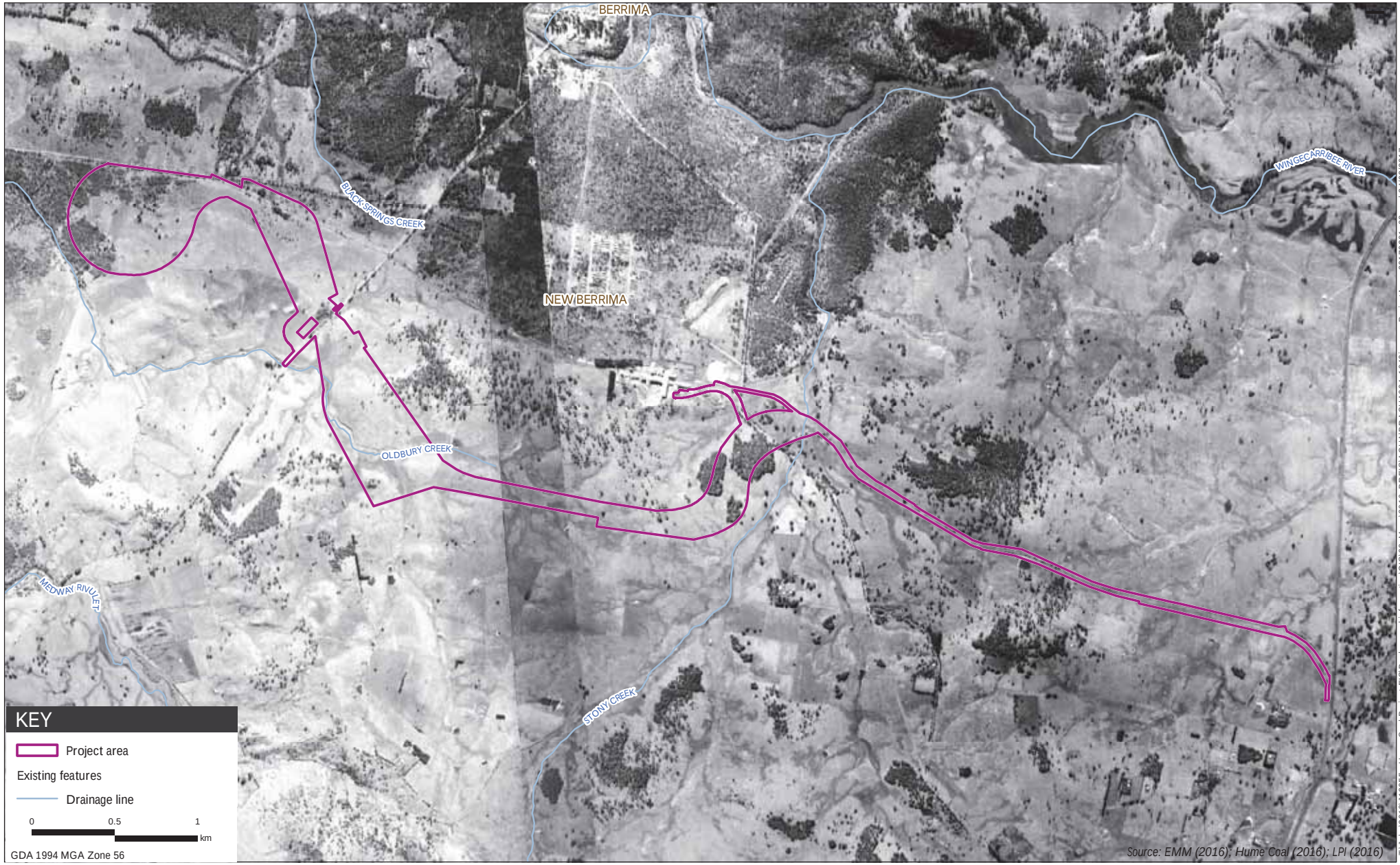
Aboriginal cultural heritage assessment

Figure 3.3



Historic aerial imagery 1949 - project area

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Aboriginal cultural heritage assessment

Figure 3.4

The impact of ploughing is likely to have spread stone artefact sites over a larger area than their original deposition. Even with potentially 100 years or more of ploughing, the artefacts may have reached their 'equilibrium' of movement whereby they will remain generally within the landform where they were initially deposited (Therin 2007).

3.1.7 Environmental implications for the distribution of Aboriginal sites

There are particular landscape features in the project area that are more likely to have been associated with Aboriginal activities in the past than others. Some of these past activities are traceable through archaeological evidence, but this is dependent on how favourable the environmental conditions have been for preserving the artefacts.

The main environmental features that indicate a high likelihood of open stone artefact sites being present are the project area's level-to-gently inclined landforms such as foot slopes, spur crests and hill crests. Within the general area open stone artefact sites are likely to be concentrated along the major perennial streams such as Oldbury Creek and Stony Creek.

Mature trees of suitable age that exhibit carving or scarring (also known as modified trees) are unlikely to occur in the project area as most of the woodland and forest areas have been cleared over the past century. However, remnant vegetation in riparian corridors and isolated pockets within agricultural areas still exist in the project area.

Most of the land in the project area has been cleared of its native vegetation and subsequently ploughed repeatedly. These activities are likely to have displaced Aboriginal stone artefacts more than natural disturbances such as bioturbation would have, but without totally diminishing their cultural and archaeological value. The stratigraphic integrity of artefacts within the topsoil is unlikely to have been preserved and the artefacts are likely to have moved both horizontally and vertically in the soil matrix but generally within the landforms in which they were originally deposited. Certain aspects of archaeological site integrity have been lost through ploughing but questions of material, type and frequency could still be answered. Overall, the extent of displacement depends on the types of ground disturbance, gradient of slope and the type of erosion, such as sheet wash on hill slopes and gullying and scouring adjacent to streams.

Outcropping sandstone is almost non-existent across the project area but very occasionally occurs as small boulders. Consequently, the project area is unlikely to host rock shelter formations. Nevertheless, grinding grooves have been recorded on the Kangaloon (AHIMS #52-4-0196, 52-4-0175), Moss Vale (AHIMS #52-4-0031) and Lower Mittagong (AHIMS #52-4-0136) soil landscapes within 100 m of streams. As such, grinding grooves may occur in eroded stream channels or nearby.

3.2 Aboriginal heritage context

3.2.1 Ethno-history

The project area was probably occupied by the Gundungarra people, although neighbouring groups, such as the Ngunawal and Wodi Wodi, probably moved through the area when invited for activities such as trade and ceremonies.

Aboriginal people lived a mobile lifestyle defined by customs and geographical features. The region was likely to have been occupied by family groups who moved through the landscape according to the seasonal availability of water, food and other customary activities.

Toolkits indicate that organic materials like wood, bark, shell, bone and fur were integral to subsistence, but these are not likely to have survived in the archaeological record. During the contact period, items made of iron and glass would have been incorporated into Aboriginal toolkits where available. Aboriginal objects most likely to have survived in the archaeological record are made from materials including stone, iron and glass.

Aboriginal burials were often marked by carved trees and mounds, and have been recorded in the wider region. Trees were also scarred from bark removal for purposes such as huts, toe-holds for tree climbing and marking of ceremonies. It is unlikely that individual campsites would have been extensive in size due to the relatively small family groups inhabiting this area. Notwithstanding, the extent of individual camps are often difficult to define archaeologically, as many sites represent an accumulation of repeated occupation and not singular camping events. Ceremonial camps are likely to have been much larger in size as they accommodated numerous people from neighbouring tribes.

3.2.2 Previously recorded sites

A search of the Aboriginal Heritage Information Management System (AHIMS) register was completed for the project area and surrounding landscape on 1 December 2015. Copies of the AHIMS searches are provided in Appendix B.

Two search areas were conducted, covering 34 km^2 centred on the project area. The searches covered a large enough area to identify all previously registered Aboriginal sites in the project area and assist in characterising the broader archaeological record. A wide variety of Aboriginal site types and their distribution across multiple landforms are represented in the AHIMS search results. A total of 89 Aboriginal sites were identified across the search area but none are located in the project area. All previously recorded AHIMS sites are shown in Figure 3.5.

Analysis of the 89 AHIMS registered Aboriginal sites (excluding the non-site type 'PAD') in the search area show that 80% of the sites contain one or more stone artefacts, 13% are axe grinding groove sites, 6% are rock shelters, four of which feature deposits and one which features art. Six percent of the total recorded sites are modified trees. Additionally, one carved tree next to a burial is located within a cluster of old-growth trees 10 km south of the project area near Exeter.

The majority of previously identified sites are to the north and south-east of the project area. Generally, open stone artefact scatters and grinding grooves have been recorded near streams throughout the search area. Grinding groove sites have only been recorded within 100 m of streams and where the underlying sandstone geology is exposed. Rock shelters with art and deposit have been recorded within 100 m of streams and only on Hawkesbury Sandstone geology. Modified trees have been recorded in areas of remnant native vegetation, typically associated with riparian corridors surrounding streams (possibly because these are the stands of trees that survived clear-felling).

There are three previously registered sites within 500 m of the project area, comprising one isolated find (AHIMS #52-4-0183), one open stone artefact site (AHIMS #52-4-0192) and one grinding groove site with associated stone artefacts (AHIMS #52-4-0175). These sites are near the eastern part of the project area and likely to be associated with Aboriginal occupation activities along Stony Creek.

3.2.3 Previous investigations

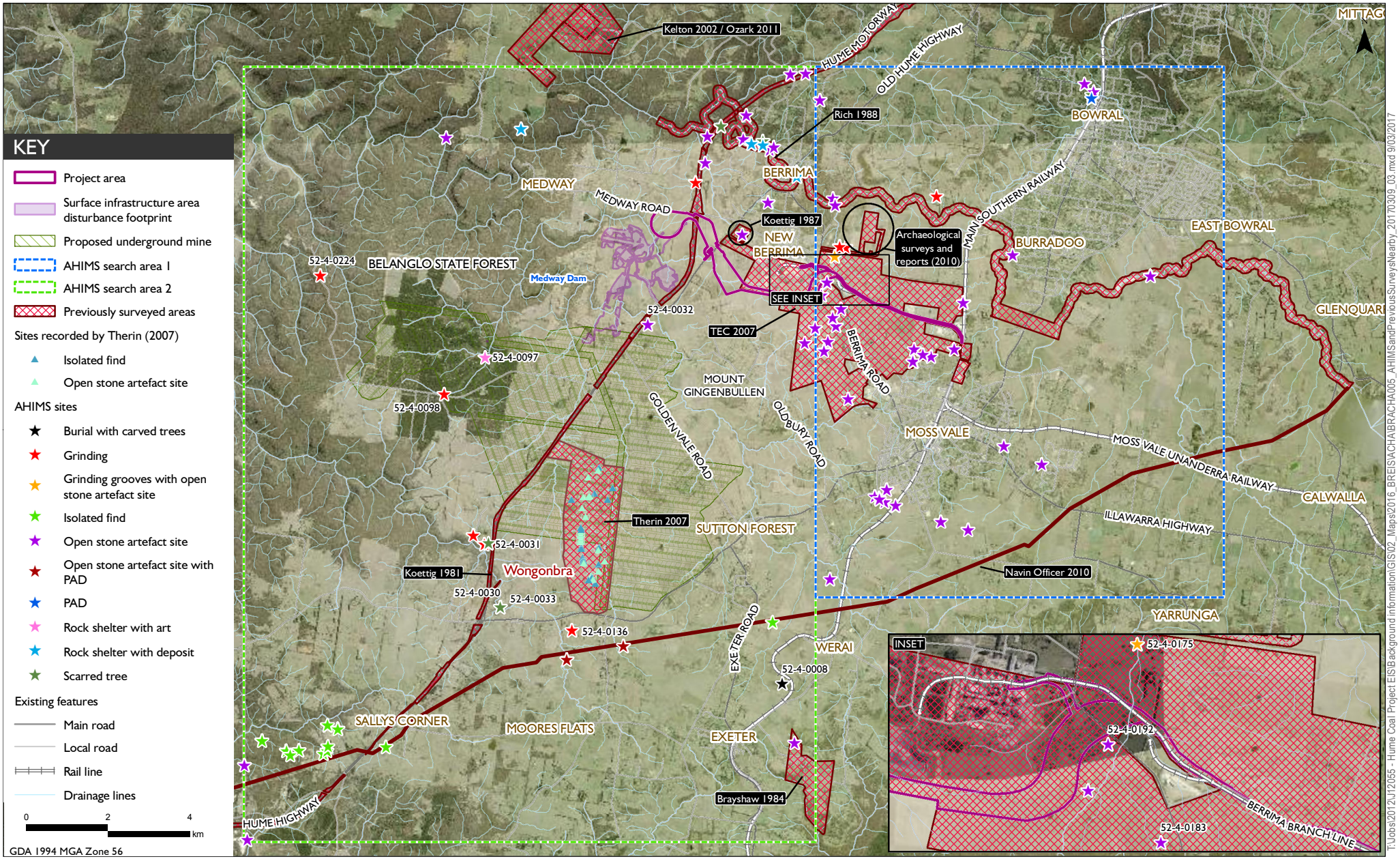
There have been a number of archaeological investigations undertaken in the Southern Highlands region over the last 30 years. These have largely been in response to infrastructure, mining developments and property subdivisions. Most investigations have included archaeological surveys and a number have also included archaeological excavation. The previous investigations for the region are detailed in Section 4 of the Hume Coal Project ACHA (EMM 2017a). The outcomes of these previous surveys have been integrated into the predictive model set out in Section 3.2.4. Where records were available, areas previously surveyed in the local area are shown in Figure 3.5.

Only two previous investigations have involved archaeological survey in the project area. The first was in 1981 when Margrit Koettig completed an archaeological survey assessment for the widening of the Hume Highway. The survey covered a narrow corridor directly east of the proposed rail loop where the Hume Highway currently exists (Koettig 1981). A number of sites were recorded but none are located in the project area.

The second assessment within the project area was by Total Earth Care in 2007 for the then proposed Moss Vale 'Enterprise Zone' (TEC 2007). Survey transects were walked within a broader survey area that included and surrounded the eastern portion of the project area (refer to Figure 3.5). Within the project area, the survey sampled the headwaters of Oldbury Creek and the extensive hill crest that covers the railway bridge approach, Berrima Road bridge crossing and the connection to the Berrima Cement Works.

Seven open artefact scatters, 11 isolated finds (totalling 64 artefacts) and seven grinding groove panels were identified during the wider survey by Total Earth Care (2007). Although no Aboriginal sites were identified in the project area, one scatter of nine artefacts (MVEnt Site 2, AHIMS #52-4-0186) and one isolated find (MVEnt Art15, AHIMS #52-4-0186) were recorded adjacent to Stony Creek within 100 m of the project area. MVEnt Art15 was considered to be an extension of MVEnt Site 2 which extended along a raised landform above the flood zone of Stony Creek.

Total Earth Care (2007) developed heritage constraints mapping which placed a 100 m buffer around each of these sites. The 100 m buffer was identified as a 'high constraint' area where subsurface artefacts were highly likely to occur although test excavation was not undertaken. A further 'medium constraint' area was demarcated up to 400 m to the west of these sites. The 'medium constraint' areas were considered to have low-to-medium subsurface artefact densities. Consequently, although no Aboriginal objects were recorded in the project area, areas of high and medium constraint were recorded by Total Earth Care in the project area in association with Stony Creek and broad, flat hill crests, across an approximate distance of 800 m, centred on the railway bridge approach and connection to the Berrima Cement Works. The relevant areas have been considered in survey and test excavation program for this ACHA.



AHIMS results and locations of previous surveys

Berrima Rail Project

Aboriginal cultural heritage assessment

Figure 3.5

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3.2.4 Predictive model of Aboriginal site location

A predictive model of Aboriginal site location was developed based on consideration of the environmental, archaeological and ethno-historic context, and relevant advice obtained from Aboriginal consultation. The predictive model was used to target specific areas during archaeological surveys and subsequent test excavation. A summary of the predictive model is as follows:

- **Open stone artefact sites (scatters of artefacts) and isolated finds** are the site types most likely to occur in the project area .These may be on all landforms as background scatter but are most likely concentrated on elevated landforms or raised portions in lower-lying landforms adjacent to ephemeral and perennial streams (typically within 200 m). In the project area they are likely to be found near Oldbury Creek and elevated crests to the west of Stony Creek.

- **Rock shelters (which may contain archaeological deposits, art or engravings)** are likely to be present in areas along rocky scarps and cliff lines. The geology and local relief is unsuitable to feature these site types within the project area.

- **Grinding groove and engraving sites** are most likely to be present on outcropping sandstone in stream beds or adjacent to streams. Grinding grooves may also exist in areas mapped as shale geology where discrete sandstone outcropping occurs; this situation occurs rarely, but where it does exist it takes the form of isolated boulders in stream channels rather than large expanses of sandstone.

- **Modified trees (scarred or carved)** may occur in areas where mature trees of a sufficient age bear the marks of traditional Aboriginal scarring or carving. They are likely to be confined to areas that have not been cleared. They are most commonly located near streams where native vegetation remains, and may also occur on now-dead trees. These are unlikely to exist in the project area because of extensive historic clearing but remnant vegetation should be inspected.

- **Other less common site types** such as ceremonial grounds, mythological sites, and burials sites can occur anywhere in the landscape and their identification is rare. Burial sites have been historically and orally noted by RAPs in association with hills or at the base of a hill in one instance (Mount Gingenbullen). Generally, they could be identified by mounds of earth, carved trees or stone markers arranged in a conspicuous layout.

4 Archaeological survey and test excavation

4.1 Overview

The survey of the project area was completed concurrently with the surveys undertaken for the Hume Coal Project ACHA. The overall survey program was completed in four stages between May 2014 and September 2015. Stages 1 and 2 sampled the Hume Coal Project area and Stages 3 and 4 sampled the Berrima Rail Project area as well as the surface infrastructure area of the Hume Coal Project.

4.2 Survey method

4.2.1 Strategy

The survey of the project area targeted the project footprint available during the time of survey. The survey did not cover the existing Berrima Branch Line as it is within a disturbed rail corridor and archaeological potential was considered to be negligible. The existing Berrima Branch Line was inspected by car and on foot in certain sections and confirmed to be a highly disturbed area with negligible archaeological potential.

Minor variations to the project design occurred after the archaeological survey, but were within or on the periphery of the corridor surveyed. Additional surveys were not warranted because the surface was obscured by thick grass and it was highly unlikely that additional surface sites would be identified. Furthermore, no additional trees not already inspected will be impacted by the minor variations. Survey transects were recorded using the *Australian Soil and Land Survey Field Book* (CSIRO 2009) as a guide. The project area was made up of 21 survey transects that covered the following landform classes:

- hill crest;
- hill slope;
- undulating plain; and
- drainage depression.

4.2.2 Recording methods

The archaeological survey and data collection methods followed Section 2.2 of the Code which sets out best practice recording methods. The survey of the surface infrastructure area comprised pedestrian field transects across defined landform elements. The survey team varied between seven to 10 people and inspected the ground surface of each transect while spaced within a 50 m wide corridor where possible (typically spaced between five and six metres apart).

Site recording was completed in accordance with the Code. Site locations were recorded using a hand-held non-differential GPS unit (MGA94 Zone 56). Site locations were checked using ArcGIS software. Survey transects were accurately mapped by downloading tracks recorded on GPS.

Sites were recorded by marking each artefact location or each cluster of artefacts within a 5 m radius as a separate waypoint in the GPS. Site boundaries were allocated by drawing a line around the cluster waypoints for each site using ArcGIS software. Stone artefacts more than 50 m apart were recorded as separate sites although this technique may not reflect the subsurface character between the 50 m distances. The 50 m rule is an arbitrary distinction and mainly used as a tool for the consistency of results and for comparison with Aboriginal sites beyond the project area.

The 'PAD areas' mapped in this report apply to the inferred extent of subsurface deposits that were defined during the survey fieldwork. PAD areas are also mapped around open stone artefact sites where subsurface deposits are likely to extend beyond known artefact extents.

4.3 Survey results

4.3.1 Effective coverage results

The 21 transects surveyed within the project area added up to approximately 11 km. Landform coverage is summarised in Table 4.1. Representative photographs of the landforms covered are presented in Photograph 4.1 to Photograph 4.10.

The aim of recording and analysing survey coverage data is to determine the effectiveness of the survey for an evaluation of the distribution of Aboriginal objects across the landscape, taking into account subsurface archaeological potential. The percentage of the ground surface exposed in each landform and the visible ground surface within exposures (as ground exposures are often obscured by vegetation, gravels etc.) influence the survey results.

Table 4.1 presents the survey transects logged by GPS. However, the survey track data represents only where the archaeologist carrying the GPS walked and does not represent the broader transect covered by the survey team (approximately 50 m width with people spaced 7–10 m apart).

Table 4.1 Landform survey coverage summary

Landform	Length (m)	Landform area (m²)	Area (m²)	% of landform effectively surveyed
Drainage depression	1,704	85,217	2,130	2.5
Hill crest	4,196	209,784	6,682	3
Hill slope	1,304	65,177	1,629	2.5
Undulating plain	3,899	194,975	6,142	3
Total	**11,103**	**555,153**	**16,583**	3

The average effective coverage results from the survey transects across the project area were relatively low at 3% and ranged from 2.5% to 3% across individual transects. The landforms were generally thickly grassed apart from sporadic ground exposures found on cattle tracks, sheet wash erosion, dam walls and occasionally exposed banks in drainage depressions. Additionally, there were two discrete areas of exposed sandstone bedrock identified in transects 80 and 81 associated with the rail loop area.

There were areas of level to gently inclined landforms adjacent to streams that remained heavily grassed with very limited visibility. Therefore the prediction of subsurface archaeological potential in the project area was largely based on the predictive model rather than the presence of surface artefacts.

The coverage results were comprehensive for grinding grooves in the project area as sandstone outcrops were isolated and rarely obscured by vegetation. The results were also comprehensive for modified trees as all mature trees within the project footprint were inspected.

Photograph 4.1 Transect 80: a thickly grassed undulating plain where the rail loop is proposed (view north).

Photograph 4.2 Transect 81: a swampy drainage depression that characterises the inside of the rail loop (view south).

Photograph 4.3 Transect 84: a gentle spur crest showing the exposure for an isolated find (HC_135) (view west).

Photograph 4.4 Transect 85: a thickly grassed undulating plain with occasional remnant trees (view east).

Photograph 4.5 Transect 88: a hill spur leading down to the upper reaches of Oldbury Creek (view south east).

Photograph 4.6 Transect 89: an ephemeral section of Oldbury Creek (view east).

Photograph 4.7 Transect 110: a broad flat, hill crest similar to Transect 112 that was identified as PAD (HC_177) (view east towards Stony Creek).

Photograph 4.8 Transect 111: a thickly grassed hill slope with minimal visibility (view north).

Photograph 4.9 Transect 112: a broad hill crest gently sloping north. This area was identified as PAD HC_176 (view north-east).

Photograph 4.10 Transect 115: Stony Creek and its adjacent swampy plain (view south).

4.3.2 Sites identified during survey

The survey team recorded 11 new sites in the project area, which are shown in Figure 4.1. Four of the 11 sites were identified within the rail loop boundary of the project area, which is also within the wider Hume Coal Project area boundary. The 11 sites are summarised in Table 4.2 and examples of the sites recorded are shown in Photograph 4.11 to Photograph 4.14. Eight of the 11 sites identified were classed as areas of PAD. PADs are the predicted extent of subsurface Aboriginal objects (typically stone artefacts) in a particular area and are therefore not technically Aboriginal sites until Aboriginal objects are identified (either through field survey or archaeological test excavation). None of the PADs identified in the project area were associated with surface stone artefacts, which was likely due to the thick grass covering across most of the project area.

PAD was assigned to landforms or portions of landforms which are distinguishable from the surrounding landscape with characteristics favourable to use by Aboriginal people such as elevated areas with good outlook and proximity to fresh water. The 'PAD areas' mapped in Figure 4.1 apply to the inferred extent of subsurface deposits, but the actual extent of the deposit can only be established through subsurface investigation. Examples of PADs HC_176 and HC_177 are shown in Photographs 4.7 and 4.9.

One grinding groove site (HC_138, refer to Photograph 4.11) was identified in the project area near the rail loop. HC_138 comprises three grooves and was identified on a small, flat boulder within the stream bed of a 3rd order ephemeral tributary of Oldbury Creek.

One retouched stone flake made from indurated mudstone/tuff (IMT) was identified in a cattle track exposure on a hill spur crest. The site appeared to be heavily eroded on skeletal soils and moderately disturbed by historic clearing and ploughing.

One potential scar tree (HC_158) was identified by an Aboriginal site officer in the project area. Identification of scar trees can be problematic given the similarity between some cultural scars and those created by natural causes such a branch tears. The site was evaluated against the publication *Aboriginal scarred trees in New South Wales: a field manual* (Long 2005). At present it remains classed as 'potential scarred tree' as it does not show clear attributes based on the field manual.

Photograph 4.11 Location of grinding grooves view south (HC_138).

Photograph 4.12 Close-up view of grinding grooves (HC_138).

Photograph 4.13 Potential scar tree (HC_158). View north.

Photograph 4.14 PAD HC_147 on a spur crest overlooking Oldbury Creek. View south.

Table 4.2 Sites recorded during survey in the project area

Site Name (AHIMS)	Property	Site type	Artefact count	Landform pattern	Landform element	Exposure type	Disturbance
HC_137	Mereworth	PAD	0	Low Hills	Hill crest	N/A	Moderate: cleared and ploughed
HC_138	Mereworth	Grinding grooves	0	Low Hills	Drainage depression	Sandstone bedrock	Low: crack running through stone
HC_139	Mereworth	PAD	0	Low Hills	Foot slope	N/A	Moderate: cleared and ploughed
HC_140	Mereworth	PAD	0	Low Hills	Hill spur crest	N/A	Moderate: cleared and ploughed
HC_145	Mereworth	Isolated find	1	Low Hills	Hill spur crest	Cattle track	Moderate: cleared and ploughed
HC_146	Stonington	PAD	0	Low Hills	Hill spur crest	N/A	Moderate: cleared and ploughed
HC_147	Stonington	PAD	0	Low Hills	Hill spur crest	N/A	Moderate: cleared and ploughed
HC_148	Stonington	PAD	0	Low Hills	Hill spur crest	N/A	Moderate: cleared and ploughed
HC_158	Stonington	Potential scar tree	0	Low Hills	Hill slope	N/A	N/A
HC_176	Boral-owned land	PAD	0	Low Hills	Hill spur crest	N/A	Low: partially cleared
HC_177	Leets Vale and Boral-owned land	PAD	0	Low Hills	Hill crest	N/A	Moderate: cleared and ploughed

Aboriginal survey coverage and results

Berrima Rail Project

Aboriginal cultural heritage assessment

Figure 4.1

4.4 Test excavation results

4.4.1 Method

EMM archaeologists, accompanied by Aboriginal site officers, conducted an archaeological test excavation in the Hume Coal Project area and in the Berrima Rail Project area over three weeks from 19 October to 6 November 2015. The method, results and analysis for the entire test excavation program are presented in detail in Chapter 7 of the Hume Coal Project ACHA (EMM 2017a), with the relevant results for the Berrima Rail Project presented in this section.

The program involved the excavation of 160 50 cm x 50 cm test pits across 16 linear transects in the Hume Coal Project area (10) and in the rail project area (6). Transects 7, 8, 9, 10, 11 and 12 (refer to Figure 4.2 to Figure 4.5) were excavated in the rail project area. The test pit transects sampled five areas of PAD that were identified during the field survey. These areas were targeted as they are within the project footprint and warranted characterisation to establish the integrity, extent, distribution, nature and overall significance of the PADs. Whilst transects 10 and 11 are slightly outside the current disturbance footprint they were laid out at the time of the excavation based on a previous disturbance footprint (see Figure 4.4).

The excavation method involved manual excavation of 50 cm x 50 cm test pits spaced at 10 m intervals across different landforms. The first test pit in each area was excavated in 10 cm spits as a precautionary measure for intact deposits and subsequently in 20 cm spits until basal clay was reached, or at least one 20 cm spit below the archaeological deposit. This involved excavating up to 40 cm of soil where possible for each test pit and only excavating deeper if artefacts were identified between 20 and 40 cm and so forth.

4.4.2 Soils

Soil deposits are important when considering archaeological preservation as variables such as soil type, soil depth, level of disturbance, erosion, aggregation and inclusions all influence the likelihood of artefacts and features being retained within the soil.

The soils adjacent to test-pit-transects 7 and 8 were characterised by alluvial deposits of silty loams with increasing clay and gravel content with depth. This typically comprised a dark brown A1 soil horizon overlying light brown/yellow sandy A2 soil horizon that was observed to continue past 80 cm depth in one instance. Basal clay (B soil horizon) was not reached in these transects except in the most westerly pits in Transect 5 as they were on a greater slope and therefore had experienced a higher level of erosion.

Soils along test-pit-transects 10 and 11 were shallow and basal clay was generally reached at 20 cm depth. The A1 and A2 soil horizons were mixed into one homogenous layer overlying basal clay.

Transects 9 and 12 were characterised by a thin silty-loam horizon overlying a thick shale and gravel layer. It was observed in transects 9 and 12 during excavation that the artefact bearing layer was limited to the upper 20 cm of soil which was the silty loam A1 soil horizon.

Overall, no stratigraphically intact subsurface deposits were identified nor were charcoal deposits present that could be associated with hearths, probably because of the level of ploughing the area has undergone. Therefore the distribution of artefacts throughout the soil profiles could not be attributed to specific occupation events or dates.

Test excavation overview

Berrima Rail Project

Aboriginal cultural heritage assessment

Figure 4.2

Test excavation results - Mereworth (transects 5, 6,7, 9 and 17)

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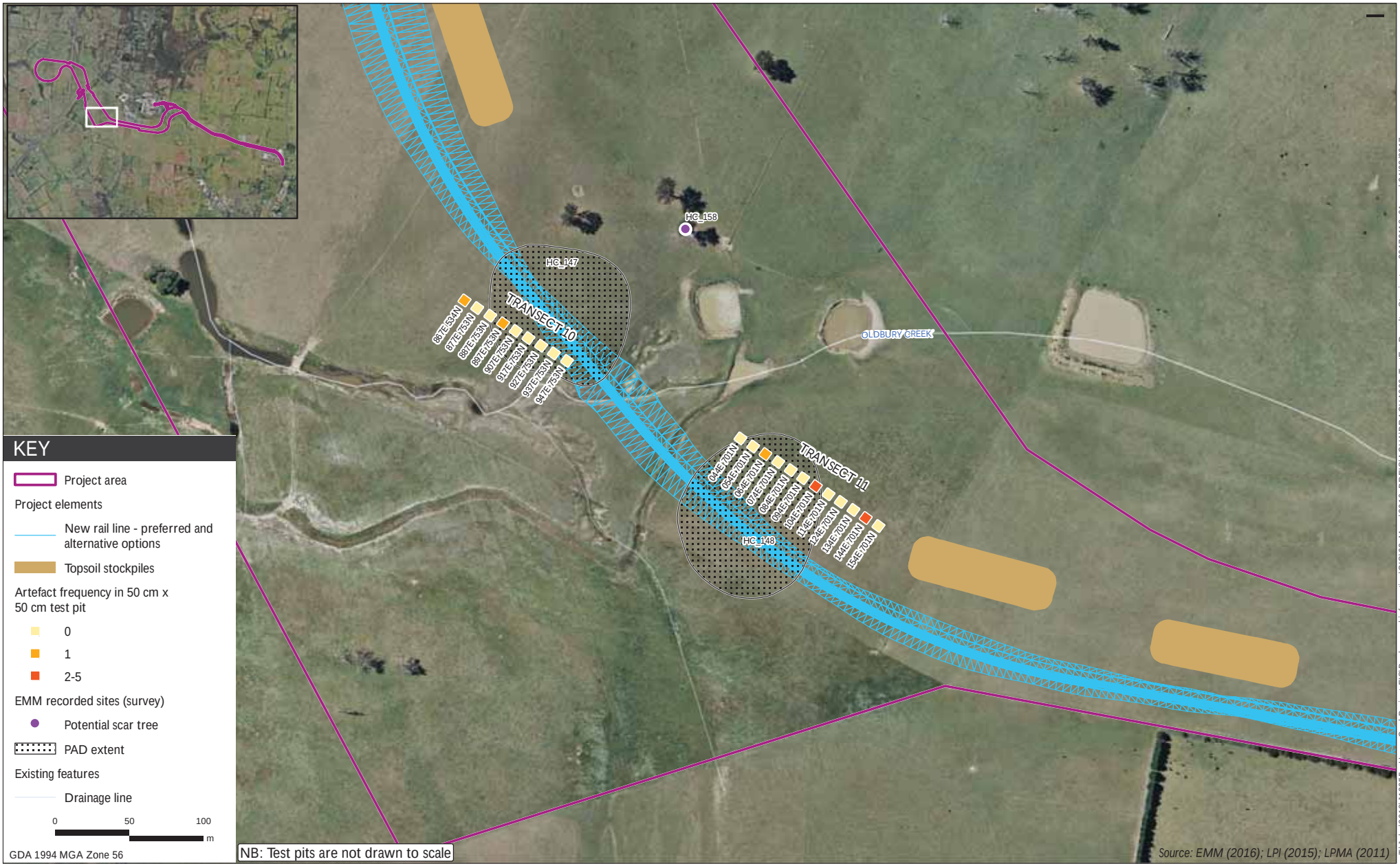
Aboriginal cultural heritage assessment

Figure 4.3

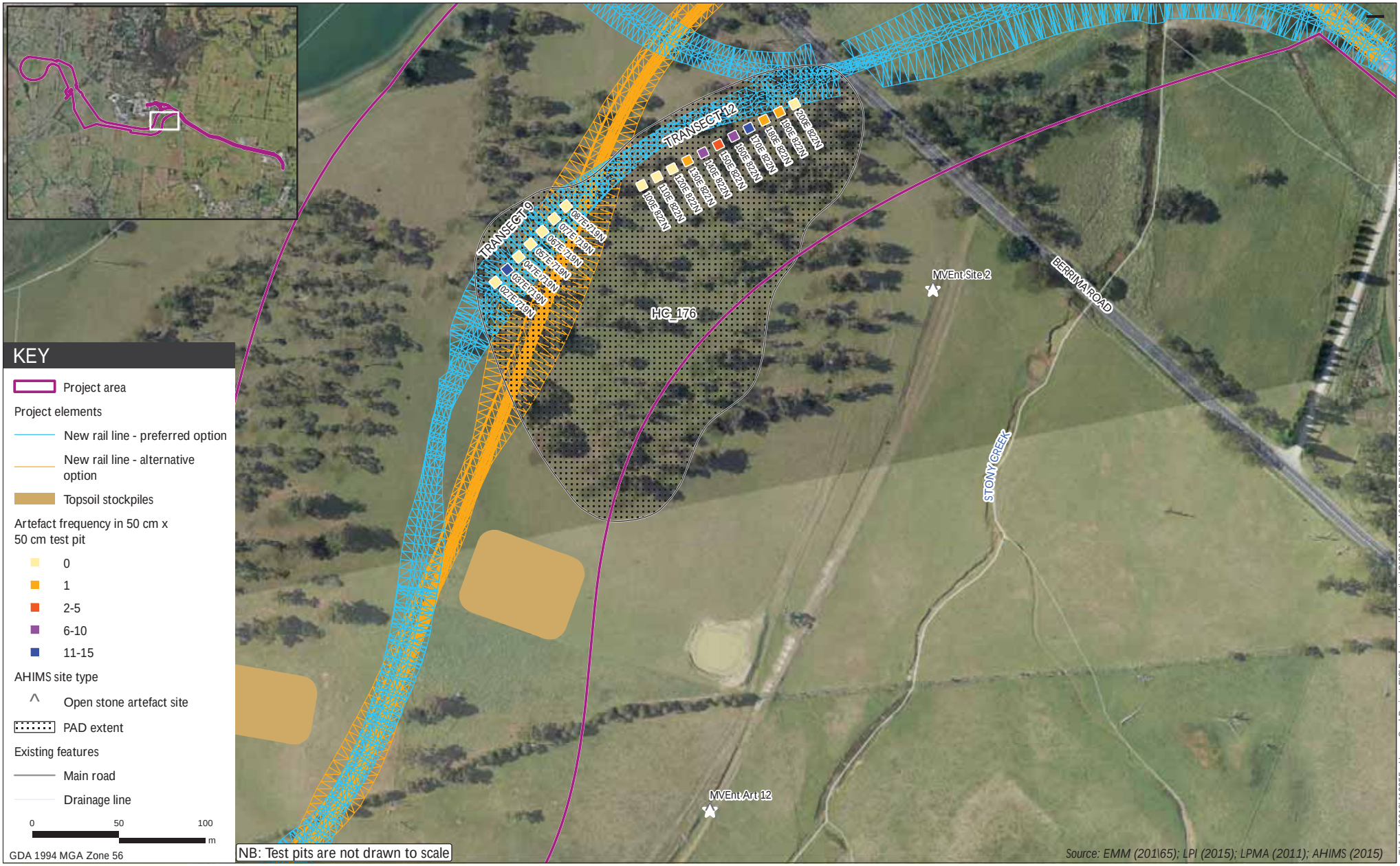


Test excavation results - Stonington (transects 10 and 11)

Berrima Rail Project

Aboriginal cultural heritage assessment

Figure 4.4



Test excavation results - Boral-owned land (transects 9 and 12)

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Aboriginal cultural heritage assessment

Figure 4.5

4.4.3 Stone artefacts recovered

A total of 281 artefacts were recovered from the test excavation program, 75 of which were recovered from the test-pit-transects in the project area. A summary of the excavation results in the project area are provided in Table 4.3. A variety of stone artefact types were recovered including complete flakes (19), cores (5) and fragments of broken flakes (48). Additionally, three implements were recovered comprising two Bondi points (test-pit-transects 12 and 7) and one scraper (test-pit-transect 12).

Table 4.3 Test excavation results for the project area

Transect no.	No. of test pits	Total artefacts recovered	Average artefact density/m^2
7	12	8	3
8	16	15	4
9	7	13	7
10	9	2	1
11	12	5	2
12	11	32	12
Total	67	**75**	

Generally, artefact densities were considered to be very low to low across the tested areas. The exception to this was the moderate artefact densities identified from test pits in transect 12. These conclusions have been made with consideration of the wider test excavation results from the Hume Coal Project area, where the average artefact density across both project areas was 7 artefacts/m^2; the average artefact density across test pits associated with ephemeral streams was 2.7 artefacts/m^2; and the average artefact density across test pits associated with perennial streams was 14 artefacts/m^2.

4.5 Archaeological sensitivity model

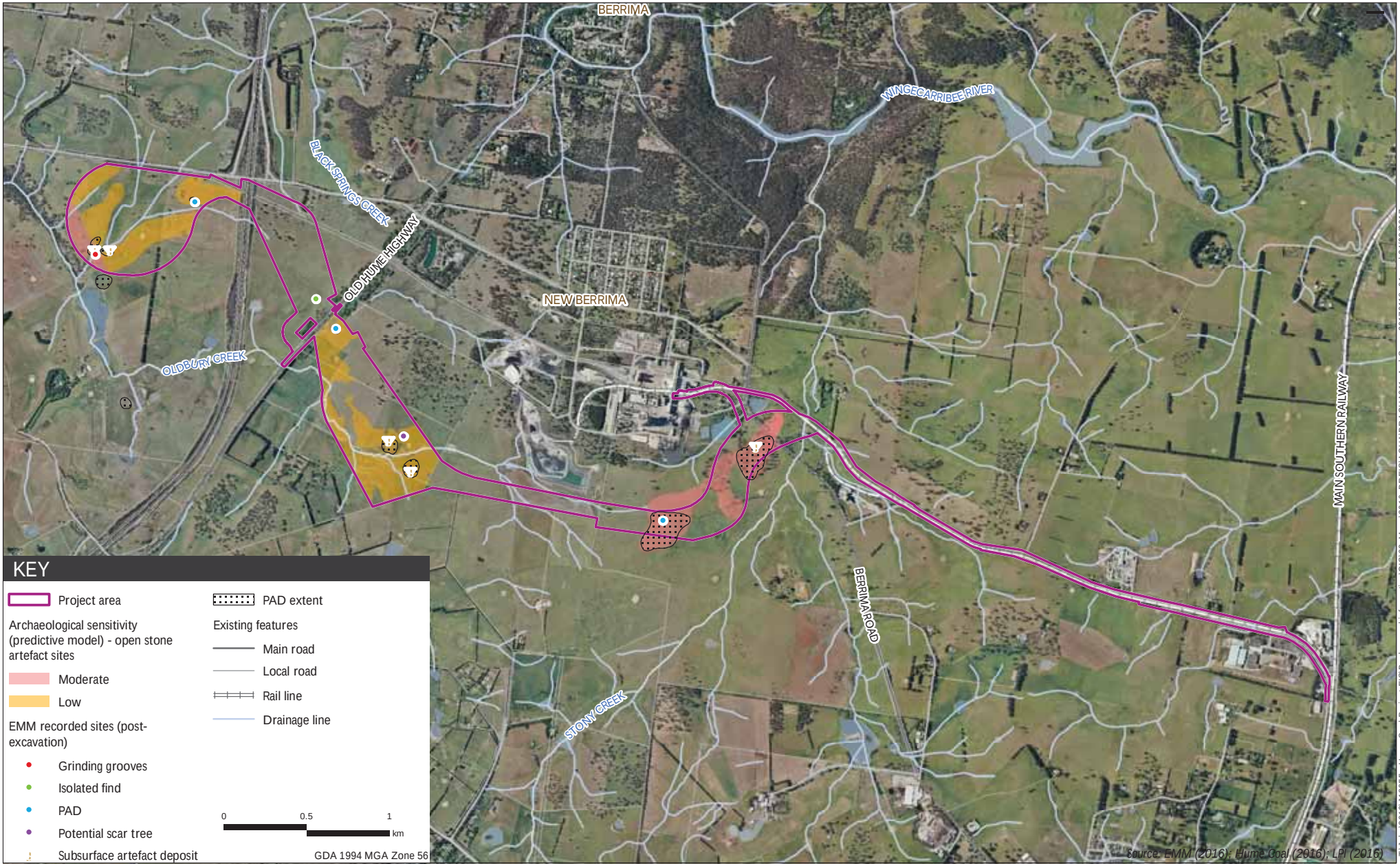
The results of the survey and test excavation helped to develop a model for 'archaeological sensitivity'. The model is a visual guide for defining the predicted distribution of sites and artefact densities across the landscape. It also serves as a refinement of the predictive model for site location.

The areas of archaeological sensitivity, as shown across the project area in Figure 4.6 represent the inferred distributions of Aboriginal sites in the project area. Where the sensitivity modelling overlaps with areas previously surveyed, its main use is for inferring subsurface artefact distributions. This is because the surface sites in such areas are already accounted for from the survey results.

The modelling has been refined in the surveyed and test excavated areas to increase the accuracy of the mapping. The PADs identified in the surveyed areas are generally considered to have higher archaeological potential than the surrounding sensitive areas unless stated otherwise. This is because these areas are physically prominent in the wider landform in which they exist and are more likely to be drier and have better vantage points than more low-lying areas.

The archaeological sensitivity modelling is limited to open stone artefact sites (including isolated finds) for the project area. The areas of archaeological sensitivity are defined as follows:

- Areas of high archaeological sensitivity (none in the project area):
    - Land within 200 m of perennial streams (4th order streams or above) on level to gently inclined landforms (less than 10% slope);
    - These areas are relatively undisturbed and in areas of remnant native vegetation. These areas are not likely to have been disturbed by historic clearing or ploughing;
    - These areas are highly likely to feature surface open stone artefact sites, specifically those with PAD; and
    - These areas are highly likely to contain a moderate density subsurface deposit with an average density of 14 artefacts/m^2.
- Areas of moderate archaeological sensitivity:
    - Land within 200 m of perennial streams (4^{th} order streams or above) on level to gently inclined landforms (less than 10% slope). The exception to this prediction applies to Oldbury Creek on the eastern site of the Hume Highway. Test excavation results in test-pit-transects 10 and 11 indicate that this area has a low archaeological sensitivity (see definition below);
    - Prominent hill crests or ridges that are over 200 m from perennial streams. Such areas are difficult to define unless physically surveyed, as outlook is likely to be a main influence for occupation. Therefore, sensitivity mapping for these areas is limited to the surveyed areas;
    - These areas are moderately disturbed from historic clearing and ploughing. However, these areas are likely to contain a moderate density subsurface deposit with an average density of up to 14 artefacts/m^2; and
    - These areas are highly likely to feature surface open stone artefact sites, but typically as open stone artefact sites.
- Areas of low archaeological sensitivity:
    - Land within 150 m of ephemeral streams (1st to 3rd order streams) on level to gently inclined landforms (less than 10% slope);
    - Highly likely to feature surface open stone artefact sites, but typically as isolated finds or open stone artefact sites with lower artefact frequencies; and
    - These areas are moderately disturbed from historic clearing and ploughing and likely contain a very low density subsurface deposit with an average density of up to 2.7 artefacts/m^2.



Areas of archaeological sensitivity - project area

Berrima Rail Project

Aboriginal cultural heritage assessment

Figure 4.6

4.6 Implications from archaeological investigation

The test excavation program confirmed that the five tested PADs (HC_137, HC_139, HC_147, HC_148 and HC_176) contain subsurface archaeological deposits. These sites have been re-classified as 'subsurface artefact deposits'.

PADs HC_140, HC_146 and HC_177 were not included in the test excavation program but their predicted deposits can be extrapolated from nearby test excavation results on similar landforms. HC_140 and HC_146 are unlikely to contain subsurface deposits based on the sparse results of the nearby excavations. If artefacts were recovered they are likely to be representative of negligible to very low densities that would not warrant mitigation or conservation. As such, these are unlikely to be distinguishable from the surrounding areas of low archaeological sensitivity.

PAD HC_177 is part of a prominent hill crest and within an area of moderate archaeological sensitivity. This area is likely to contain a moderate density subsurface deposit similar to the concentrations recovered from the testing of HC_176 (test pit transects 9 and 12).

The archaeological sensitivity model indicates that the area of moderate density subsurface deposit between HC_176 and HC_177 is likely to extend along the entire crest parallel to Stony Creek as marked by the area of moderate sensitivity in Figure 4.6. As such, it would be beneficial to test whether the areas of PAD in HC_176 and HC_177 do in fact retain higher subsurface artefact densities.

5 Significance assessment

5.1 Defining heritage significance

Heritage sites, objects and places hold value for communities in many different ways. The nature of those heritage values is an important consideration when deciding on how to manage a heritage site, object or place, and balance competing land-use options.

The first overarching significance criterion addresses the socio-cultural and historic values which pertain to the Aboriginal community. No socio-cultural or historic values have been identified in the project area. The aspects of Aboriginal heritage identified in this ACHA therefore relate to the physical Aboriginal objects. Aboriginal heritage sites with archaeological evidence are all of value to the Aboriginal community as they are a tangible connection to pre-European land use. EMM acknowledges that the registered Aboriginal parties consider Aboriginal objects as culturally significant items.

No sites were identified as having specific socio-cultural or historic value and therefore each site in this report has not been attributed with a socio-cultural or historic significance rating as it has been completed for scientific and educational values.

The second significance criterion refers to the scientific value of identified Aboriginal cultural heritage sites. The scientific values are addressed according to research potential, rarity, integrity, and educational potential. The following scientific values are identified as 'low', 'moderate' or 'high' for each identified site with an overall rating based on the results of each individual assessment. In the overall assessment of significance, research potential and rarity are generally weighted higher. This is because most values contribute to research potential, such as a site's integrity, which largely determines the types of research questions that can be addressed.

5.2 Sites and significance

This section presents the scientific significance for the 11 sites identified in the project area. A summary of these sites and their significance is presented in Table 5.1. Eight sites were assessed as having low scientific significance, one site was assessed with moderate scientific significance and two sites were assessed as having a higher level of moderate significance. Complete statements of significance are provided in Appendix C.

The eight sites of low significance include four subsurface artefact deposits identified through test excavation (HC_137, HC_139, HC_147 and HC_148). These sites had sparse subsurface deposits and were in moderately disturbed contexts. PADs HC_140 and HC_146 were not tested but subsequent test excavation nearby indicated that these areas are likely to have very sparse artefact densities in moderately disturbed deposits. The potential scar tree (HC_158) was assessed to be of low significance, primarily because its attributes are likely to be the result of natural causes and therefore not a good representative example of an Aboriginal scar tree. HC_145 is an isolated artefact of low significance as it is in moderately disturbed context on an eroded crest with low archaeological potential.

The grinding groove site (HC_138) was assessed to have moderate significance as it is a reasonable example (albeit with only few grooves) of a rarer site type.

Some sites throughout the project area and the Hume Coal Project area were assessed to have moderate significance. Two sites were distinguished as having 'higher moderate significance' to identify the known or predicted comparatively higher density subsurface deposits in the local area (HC_176 and HC_177). HC_176 was test excavated and indicated an artefact deposit of moderate artefact density. Although not rare for the region, this area had a comparatively high frequency of artefacts on a local level.

Although HC_177 was not subject to test excavation, it is predicted to have the same level of significance as HC_176 because of its proximity to HC_176 and its location on a similar landform. The value of both sites has been reduced by widespread historic ploughing across the landscape which has reduced their research value. These sites do not have high archaeological integrity but are still valuable for more general research on stone artefact characteristics because of their comparatively high subsurface artefact frequencies. As such, these sites have been assigned higher significance than other lower density subsurface deposits but they do not have the characteristics that would warrant outright conservation.

Table 5.1 Summary of significances

Site Name	Property	Site type	Description	Significance type	Significance rating
HC_137	Mereworth	Subsurface artefact deposit	Subsurface deposit is sparse on a typical landform in a moderately disturbed context. The site was originally identified as an area of PAD on a broad flat low hill crest and the gently inclined slope that leads into a tributary of Oldbury Creek. Subsequent test excavation identified a sparse artefact deposit in a moderately disturbed topsoil context.	Representative	Low
HC_138	Mereworth	Grinding grooves	Grinding grooves site; made up of three grinding grooves within a 30 cm by 40 cm sandstone exposure. Site is within a drainage depression adjacent to a vehicle track culvert. Grinding groove dimensions are: Grinding grooves 1) measures 25 x 10 cm; Grinding grooves 2) measures 25 x 7 cm; and Grinding grooves 3) measures 7 x 15 cm.	A reasonable example of a rarer site type. Represents moderate educational and research potential. The density of grinding grooves on a small outcrop potentially signifies frequent activity in the area and/or rarity of grinding surfaces.	Moderate
HC_139	Mereworth	Subsurface artefact deposit	Subsurface deposit is sparse on a typical landform in a moderately disturbed context. The site was originally identified on a broad, low but elevated portion of a foot slope adjacent to a tributary of Oldbury Creek. Subsequent test excavation identified a sparse deposit in a moderately disturbed topsoil context.	Representative	Low
HC_140	Mereworth	PAD	This site was identified during archaeological survey as PAD based on the predictive model developed at that stage. Refinements were made after the test excavation program and the site is now considered unlikely to contain subsurface deposits based on the results of nearby excavations. If artefacts were recovered they are likely to be representative of negligible to very low densities that would not warrant mitigation or conservation.	Unlikely to be PAD based on reassessment, that is, unlikely to be distinguishable from the surrounding landscape of low archaeological sensitivity.	Low
HC_145	Mereworth	Isolated find	The site is a single artefact in a moderately disturbed context.	Representative	Low
HC_146	Stonington	PAD	This site was identified during archaeological survey as PAD based on the predictive model developed at that stage. Refinements were made after the test excavation program and the site is now considered unlikely to contain subsurface deposits based on the results of nearby excavations. If artefacts were recovered they are likely to be representative of negligible to very low densities that would not warrant mitigation or conservation.	Unlikely to be PAD based on reassessment, that is, the site is unlikely to be distinguishable from the surrounding landscape of low archaeological sensitivity.	Low
HC_147	Stonington	Subsurface artefact deposit	Subsurface deposit is sparse on a typical landform in a moderately disturbed context. The site was originally identified on a gently inclined hill spur crest overlooking the confluence of Oldbury Creek and one of its minor tributaries. Subsequent test excavation identified a sparse deposit in a moderately disturbed topsoil context.	Representative	Low

Table 5.1 Summary of significances

Site Name	Property	Site type	Description	Significance type	Significance rating
HC_148	Stonington	Subsurface artefact deposit	Subsurface deposit is sparse on a typical landform in a moderately disturbed context. The site was originally identified on a gently inclined hill spur crest overlooking the confluence of Oldbury Creek and one of its minor tributaries. Subsequent test excavation identified a sparse deposit in a moderately disturbed topsoil context.	Representative	Low
HC_158	Stonington	Potential scar tree	Site was identified by Aboriginal site officer. At present the site remains classed as a potential scar tree as it does not clearly show the necessary attributes based on the field manual (DEC 2005) For example, one scar appears to extend from far above the current scar, indicating a branch tear. Also no dry face of the scar is present. Second scar at the base of the tree also extends from far above the current scar, indicating a branch tear.	Probable branch tear.	Low
HC_176	Boral Land	Subsurface artefact deposit	Area of PAD identified on a hill spur crest leading north down-slope towards Stony Creek. Although the site is over 200 m from Stony Creek, it follows a broad level to gently inclined spur crest that provides good outlook over Stony Creek and the surrounding landscape. It is one of the few high points locally overlooking Stony Creek and is likely to have been a good vantage point for Aboriginal occupation. The PAD follows the width of the spur crest to the limit of observed curvature and up-slope to the summit of the crest. Subsequent test excavation identified that the subsurface deposit is relatively high for the local area and represents a good sample of the local archaeology.	Some research potential for artefact assemblage and characteristics; density rare in the local context; however, moderate to low level of site integrity.	Higher moderate
HC_177	Site extends on Leets Vale and Boral land	PAD	Area of PAD identified on the summit of a hill crest overlooking Oldbury Creek. Although the site is over 300 m from Stony Creek, its unique high point in the landscape indicates that it would have been a good vantage point for Aboriginal occupation. The PAD comprises the extent of the summit where its aspect faces south and east towards Stony Creek. Subsurface deposit is likely to be similar to HC_176.	Some research potential for artefact assemblage and characteristics; density rare in the local context; however, moderate to low level of site integrity.	Higher moderate

6 Impact assessment

6.1 Overview

The project design and construction elements are described in Chapter 1 and detailed in Figure 1.3. There are two proposed designs for the project: the project preferred option and the alternative option. The construction of the rail loop and railway to the railway bridge, and the construction of stockpile areas will impact Aboriginal cultural heritage values regardless of the options.

The primary differences between the project preferred and alternative option is that the alternative option does not include the new rail access into the Berrima Cement Works, and the alternative option follows a wider curve that would impact greater areas of moderate archaeological significance.

The preferred option involves construction of the Hume Coal rail line and requisite railway bridge over Berrima Road approximately 70 m further east than the crossing proposed for the alternative option. This added distance allows for the new rail access geometry into the Berrima Cement Works via an "S" shaped curve. However, the new rail access of the preferred option follows highly disturbed terrain and would not represent greater impacts to archaeological deposits.

The alternative option does not include the Boral Cement Works siding and therefore enables the Hume Coal rail line to follow a wider curve to the west before linking with the Berrima Branch Line to the east.

Both options would result in direct impacts to Aboriginal sites. The types of direct impacts are defined as partial loss and total loss. Loss entails complete removal of an Aboriginal site's elements due to surface disturbance such as large-scale earthworks. The total modification of a landscape can also constitute loss, even if artefacts are collected and later returned to the modified surface in their original positions, because the context (an integral part of archaeological site value) is irretrievable.

"Total loss" is when the entirety of a site will be removed as a result of the project.

"Partial loss" describes the removal of part of a site.

6.2 Impacts to sites

Eight of the 11 Aboriginal sites will be impacted to some degree by the project. Of these, six sites will be partially lost and two will be totally lost. Three sites out of the 11 sites will not be impacted. Impacts from both project designs are illustrated in Figure 6.1. Impact summaries are provided in Table 5.1.

Overall, six sites of low significance will be impacted (four partially and two totally) and two sites of moderate significance will be partially lost. Two sites of low significance (HC_158 and HC_140) and the one grinding groove site of moderate significance (HC_138) will be avoided.

6.3 Impacts on archaeologically sensitive areas

The project area in relation to archaeologically sensitive areas is shown in Figure 4.6.

6.3.1 Hume Coal rail loop

The Hume Coal rail loop will impact on areas of predicted low archaeological sensitivity (including areas of PAD). Test excavations along test-pit-transects 7 and 8 revealed very low artefact densities (>5 artefacts/m^2) that are indicative of the surrounding landform. It is anticipated that the subsurface artefact densities within the impact footprint will decrease even further to the north in conjunction with the increasing distance from Oldbury Creek. The rail loop has been set back over 200 m from Oldbury Creek to avoid areas of high or moderate archaeological sensitivity.

6.3.2 Railway line

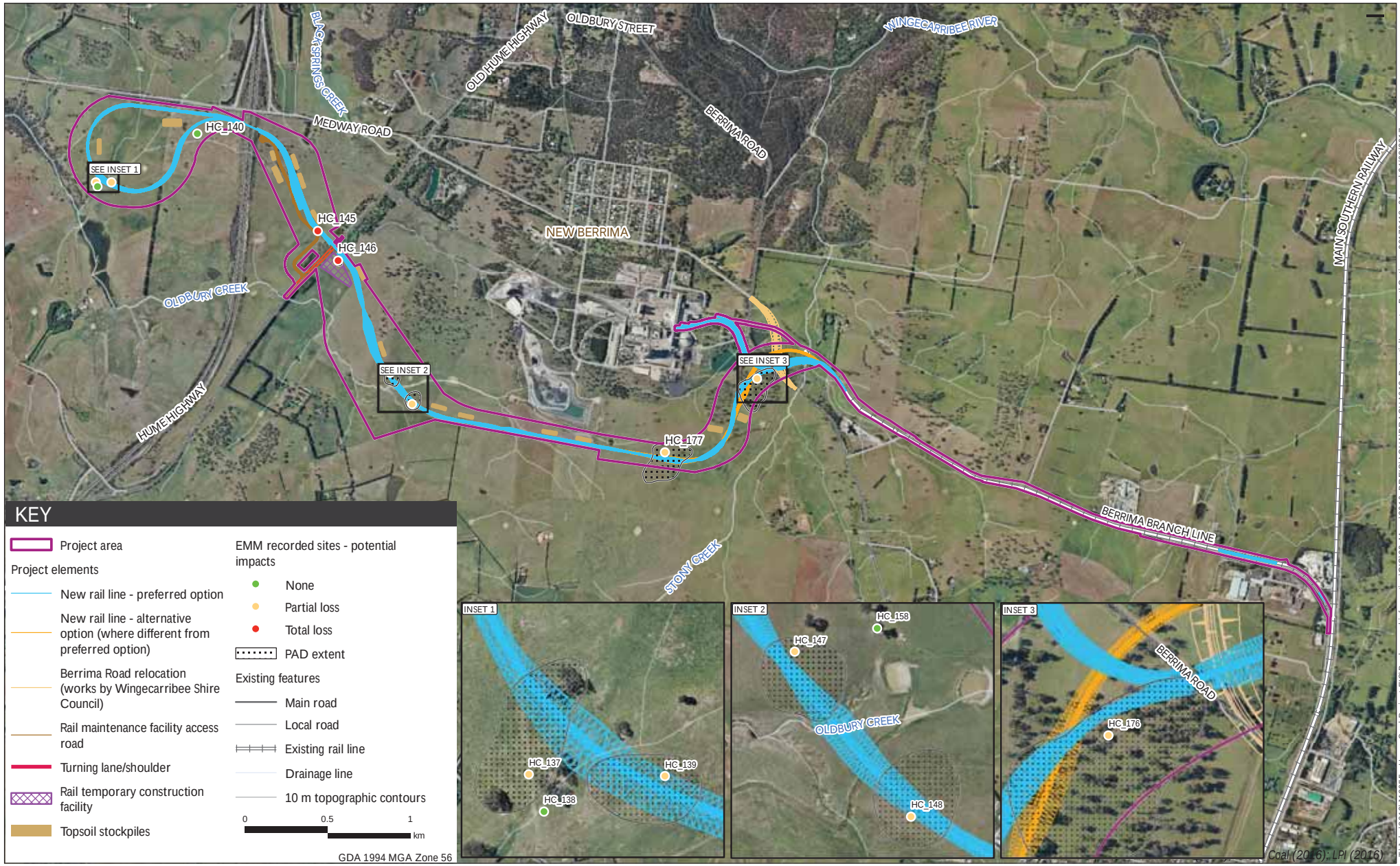
The preferred and alternative railway line routes would affect areas of predicted low archaeological sensitivity (including PADs). The areas of sensitivity associated with the catchment of Oldbury Creek are best represented by the test excavation results in test-pit-transects 10 and 11 that had very low artefact densities (average of 1-2 artefacts/m^2). Adjacent areas of archaeological sensitivity are likely to have equal or lower artefact densities.

The preferred and alternative rail line routes would also affect areas of a prominent hill crest that is predicted to have moderate archaeological sensitivity. Notably, the alternative option would disturb a greater area of prominent hill crest to the north of Berrima Road, whereas the preferred option would diverge away from this sensitive landform into a swampy plain. The results of test-pit-transects 9 and 12 indicate that low to moderate artefact densities will occur in the 'prominent landforms' areas shown in Figure 6.1.

6.3.3 Soil stockpiles

The vast majority of soil stockpile locations have been deliberately situated outside of areas displaying any archaeological sensitivity (low-high) identified through survey, test excavations and predictive modelling.

Under both design options one stockpile location will impact a small area of moderate archaeological sensitivity situated between the two sites HC_177 and HC_176. Recent investigations on the short term impacts of emplacement areas (in cases where the topsoil is not stripped prior to emplacement) (KNC 2012 and 2013) indicate that while some compaction of the ground is evident, the artefacts themselves remain intact beneath layers of soil if separated by a synthetic barrier. However, without using a barrier it is anticipated that the deposit would degenerate and devalue over time as bioturbation causes the stockpile soils to mix with the PAD. This process would reduce the scientific value of the deposit, which has already been compromised by ploughing. Therefore, the stockpile covering the area of moderate archaeological sensitivity will contribute to the partial loss of the site.



Potential impacts on Aboriginal sites

Berrima Rail Project

Aboriginal cultural heritage assessment

Figure 6.1

6.4 Cumulative impacts

6.4.1 Overview

The aim of assessing cumulative impacts is to identify how much of the local and regional archaeological resource has been impacted already, how much of it remains, and the effects the project will have on the archaeological resource considering what is already lost from other developments. In this case it is important to recognise that the Southern Highlands region contains a substantial archaeological resource because it is largely undeveloped and borders onto extensive tracts of native forest and much of the local archaeological resource will be retained within the project area itself.

The surrounding region is characterised by established open farmland and native and plantation forests. Low-level urban and industrial development is focused around towns to the north and east which make up a smaller portion of land use. Although not mapped in this ACHA[1], if the archaeological sensitivity modelling is applied to the region, there are considerable tracts of undeveloped perennial streams and sandstone landscapes that are highly likely to contain sites such as open artefact sites, rock shelters and grinding groove sites.

There are some industrial, extractive and manufacturing facilities in the locality, such as the former Berrima Colliery, Berrima Cement Works, Berrima Feed Mill, and the Moss Vale Enterprise Corridor, as well as other proposed developments such as the New Berrima Clay/Shale Quarry, the Sutton Forest Quarry and Green Valley Sand Quarry. However, these have isolated disturbance footprints and represent a small cumulative impact on the archaeologically sensitive landscapes in the region.

6.4.2 Existing impacts

The most widespread impact in the region is from the historic clearing and ploughing involved in establishing and maintaining open farmland. These activities are likely to have reduced the archaeological integrity of many sites, particularly on shallow soils where ploughing has disturbed the entire soil profile. Deeper archaeological deposits may exist in suitably deep soils but test excavations in the project area indicate that most of the archaeology is confined to the upper soil profile.

An Aboriginal Heritage Impact Permit (AHIP) (#C0001763) has previously been issued to allow continued farming activities (ploughing, sowing crops and harvesting) in parts of the project area. The AHIP permits continued ploughing to occur to HC_137, HC_139, HC_145, HC_146, HC_148 and HC_177 in the project area. Current farming activities represent the continuation of activities that have already occurred historically and repeatedly and as such are not considered to be detrimental to the existing archaeological landscape. Landscape analysis and test excavation results confirm that the project area and surrounding farmland has already been subject to these activities repeatedly which has resulted in a moderately disturbed landscape. Therefore, the continued farming activities are not considered to contribute to cumulative impacts in the project area.

[1] The predictive model was not applied to the broader region to avoid imposing assumptions on local areas before they are appropriately investigated.

Two ‘no-harm’ areas within an AHIP boundary have been established near Oldbury Creek under AHIP #C0001763. No-harm area 1 is outside the project area. No-harm area 2, covering grinding groove site HC_138, is in the project area but will be avoided. The cumulative impacts of the project are best assessed against other large-scale earthworks that have the potential to remove the archaeological resource rather than farming activities. The cumulative impacts are directly linked to the impacts from the adjacent Hume Coal Project, as discussed below. Although there are, or have been, a number of industrial, extractive and manufacturing facilities developed in the locality these sites occupy only a small proportion of the regional area and represent a small cumulative impact on archaeologically sensitive landscapes.

Overall, there are considerable expanses of open farmland adjacent to streams throughout the Southern Highlands. The AHIMS results and basic landscape review indicate that a comparable resource to the project area (moderately disturbed land by clearing and ploughing) exists throughout the region. Impacts to the most archaeologically sensitive locations in the project area will be discrete and linear, leaving parts of archaeologically sensitive land on prominent crests adjacent to Stony Creek out of the project footprint.

6.4.3 Cumulative impacts with the Hume Coal Project

The impact on the archaeological resource at a landscape level is relatively small considering the extensive traces of archaeological evidence throughout the Hume Coal Project, the Berrima Rail Project and surrounds. Both project footprints have been specifically designed to avoid archaeologically sensitive areas and will only partially impact the more significant deposits by linear project elements. Both projects will avoid grinding groove sites, rock pools, rock shelters or potential scar trees. It is also very unlikely that subsidence will impact these site types or stone artefact sites. The underground mining method has been designed to result in negligible subsidence impacts.

In summary, the Hume Coal Project and the Berrima Rail Project will have the following combined impacts:

- 20 sites will be directly impacted by the Hume Coal Project surface infrastructure area. This comprises:
  - no sites of high significance;
  - six sites of moderate significance, two of which are of higher moderate significance (HC_135 and HC_151); and
  - 14 sites of low significance.
- Eight sites will be directly impacted by the Berrima Rail Project. This comprises:
  - no sites of high significance;
  - two sites of higher moderate significance (HC_176 and HC_177); and
  - six sites of low significance.

- 89 sites are above the Hume Coal Project underground mine area, but no subsidence impacts are predicted to occur.
- 102 sites are outside the Hume Coal Project surface infrastructure disturbance footprint and underground mine area and the current project disturbance footprint. These sites will be avoided.
- Taking the negligible risk of subsidence impacts into account, it is very likely that 191 of the 219 sites (87%) assessed as part of the wider Hume Coal Project ACHA will not be impacted by either of the Berrima Rail project or Hume Coal project.

7 Management and mitigation

7.1 Alternatives adopted to maximise avoidance

The project evolution and alternatives considered are described in detail in Chapter 3 of the Berrima Rail Project EIS (EMM 2017b).

During the initial stages of the ACHA, desktop constraints analysis and archaeological surveys were undertaken to identify the most archaeologically sensitive areas so that the project could be designed to avoid substantial impacts to Aboriginal sites. Notably, this involved setting the rail loop back beyond 200 m of Oldbury Creek which will considerably reduce the impact on subsurface stone artefact deposits of moderate density.

7.2 Intergenerational equity

Aboriginal heritage management is based on the principle of intergenerational equity, which is the intent to ensure present generations consider future generations when making management decisions. This principle is possibly the most relevant part of the notion of ecologically sustainable development (ESD) when considering Aboriginal heritage management.

The local archaeological resource of the project area will be partially lost through the proposed development. However, the nature of the impacts only affects corridors of archaeologically sensitive land within any one landform. While the limited archaeological resource directly within the project footprint will be lost, the adjacent land will retain a representative sample of that archaeology.

While it is acknowledged that the project will result in impacts to existing Aboriginal heritage, the proposed management measures presented in the below sub-sections are anticipated to provide detailed information about those sites that will be impacted. Archaeological salvage will record and analyse contextual and physical data and objects will be retained as a physical reminder of the Aboriginal past in the area. This will help to achieve intergenerational equity by allowing retention of cultural materials for the enjoyment and education of future generations.

7.3 Aboriginal heritage management framework

This section describes the management measures that will be adopted to minimise impacts on identified Aboriginal heritage values of both the preferred and the alternative option areas (Figure 7.1). The management measures respond to:

- the assessed significance of the Aboriginal sites;
- the impacts identified in this chapter;
- the views of the Aboriginal community as represented by RAPs;
- the need to address intergenerational equity for Aboriginal heritage;
- the need to protect and monitor sites not impacted by the project but under the care of the applicant; and
- the need to mitigate the loss and disturbance of Aboriginal sites and Aboriginal objects.

While Aboriginal sites cannot be replaced once lost, the salvage of Aboriginal objects provides a tangible link to these sites. Furthermore, those salvaged materials can be studied to help understand other Aboriginal sites present in the landscape and add to the growing body of information about the past.

Apart from avoidance by careful route selection and design, the management measures that will be undertaken in response to the impacts and significance levels are:

- active management of Aboriginal sites close to the project footprint, this will involve fencing and signage to avoid potential impacts during construction and operation;
- salvage of Aboriginal sites in the project footprint; and
- procedures that specify actions to be taken in the event of discovery of skeletal remains, other Aboriginal sites, and for the ongoing care of salvaged Aboriginal objects within a keeping place.

7.4 Management measures

7.4.1 Aboriginal heritage management plan

An Aboriginal cultural heritage management plan (ACHMP) will be developed in consultation with RAPs and OEH. The ACHMP will provide details of:

- all Aboriginal sites identified for the project;
- management measures and their progress towards completion;
- continued consultation and involvement of registered Aboriginal parties;
- protocols for newly identified sites;
- protocols for suspected human skeletal material; and
- provisions for review and updates of the ACHMP.

7.4.2 Avoidance and active management

Active management applies to one grinding groove site (HC_138) close to the margins (within 25 m) of the rail loop footprint and will involve fencing and signage for the duration of the project. Detailed active management measures will be developed in the ACHMP. It will be assessed if the landscape surrounding HC_176 and HC_177 (currently identified as PAD) will require avoidance after the salvage excavations at these sites.. If it is determined that subsurface deposits are likely to extend beyond the impact footprint avoidance measures will be included in the ACHMP to avoid further impacts to the subsurface deposit. These sites are listed for ‘partial salvage excavation/avoid’ in Table 5.1.

7.4.3 Avoidance and passive management

No active management will be undertaken for HC_140 and HC_158 which will be avoided by the project footprint. HC_140 is directly east of the Hume Coal rail loop but the mapped area of PAD is no longer considered to represent an archaeological deposit warranting further investigation. The potential scarred tree HC_158 is approximately 100 m from the railway footprint and does not require active management.

7.4.4 Collection

All visible surface Aboriginal stone artefacts in the project footprint (n=1) will be collected prior to construction work commencing. The collection will be undertaken by qualified archaeologists and RAP site officers. The collection method will be as follows:

1. Re-locate each site.

2. The general vicinity of each site location will be inspected by the field team. Stone artefacts will be flagged on the ground and a photo taken of the flagged site. Each flagged artefact will be marked as a waypoint in the GPS.

3. All artefacts will be collected into artefact bags marked with the project name, site name, and collection date and also the waypoint number on a Tyvek tag.

4. All artefacts will be sorted and recorded post-fieldwork with respect to technological type, implement type, material, maximum block length and weight.

5. The artefact analysis will be incorporated into the overall salvage report detailing the results of the fieldwork, the artefacts recovered at each site and GIS figures showing the artefact locations.

6. Results of the artefact analysis will be integrated into the overall salvage report and contribute to the overall interpretation of the area.

7.4.5 Salvage excavation

Two sites (HC_177 and HC_176) and two additional locations nearby of moderate archaeological sensitivity will be subject to archaeological excavation. The two additional salvage locations are within the project footprint on a prominent hill crest (refer to Figure 7.1). As explained in Section 4.3.3, the archaeological sensitivity model indicates that the area of moderate density subsurface deposit between HC_176 and HC_177 is likely to extend along the entire crest parallel to Stony Creek as marked by the area of moderate sensitivity on Figure 4.6.

The first additional location is between HC_176 and HC_177 (Additional salvage area 1) and the second location is north of Berrima Road (Additional salvage area 2) which may be a continuation of the subsurface deposit associated with HC_176 but is bisected by Berrima Road. Importantly, the requirement to salvage additional salvage area 2 is only applicable if the alternative rail option is chosen. The preferred option does not require this measure as it veers away from the sensitive hill crest and continues into a swampy area of low archaeological potential.

All salvage excavation areas will be limited to the extent of the disturbance boundary in each location. This means that any further refinements to the disturbance boundary during detailed design of the project works will influence the final scope of the salvage excavation program. Each of the four locations will be subject to a staged program. The excavation method will involve placing additional 50 cm x 50 cm test pits at 10 m intervals within the disturbance boundary perpendicular to the previously excavated transects or within later-defined discrete disturbance footprints. These will be spaced at regular intervals and determined during the preparation of the ACHMP. The aim of this method will be to identify the highest artefact concentrations within the limits of the disturbance boundary. Where test excavation has not previously occurred (HC_177 and the two additional test locations), the same method of placing test pits at 10 m intervals across and perpendicular to the PAD will apply.

In the event that an artefact density of 10 artefacts or above is encountered in a 50 cm x 50 cm pit (which is indicative of 40 artefacts/m^2 at that particular location), or if an archaeological feature such as a hearth is found, the test pits with such evidence will be expanded into an open area. Once the subject pit is expanded to 1 m x 1 m, the remaining pits in the open area can be dug in 1 m x 1 m squares. The final scope of salvage will be determined during the preparation of the ACHMP.

Artefacts will be wet sieved. The aperture of the sieve used will be determined during the development of the ACHMP. Typically, 5 mm sieves are used but the identification of smaller artefacts may warrant the use of smaller sieves.

Salvaged artefacts will be subject to detailed attribute analysis. Following analysis, artefacts will be retained in a keeping place. AHIMS records will be updated with a site impact recording form.

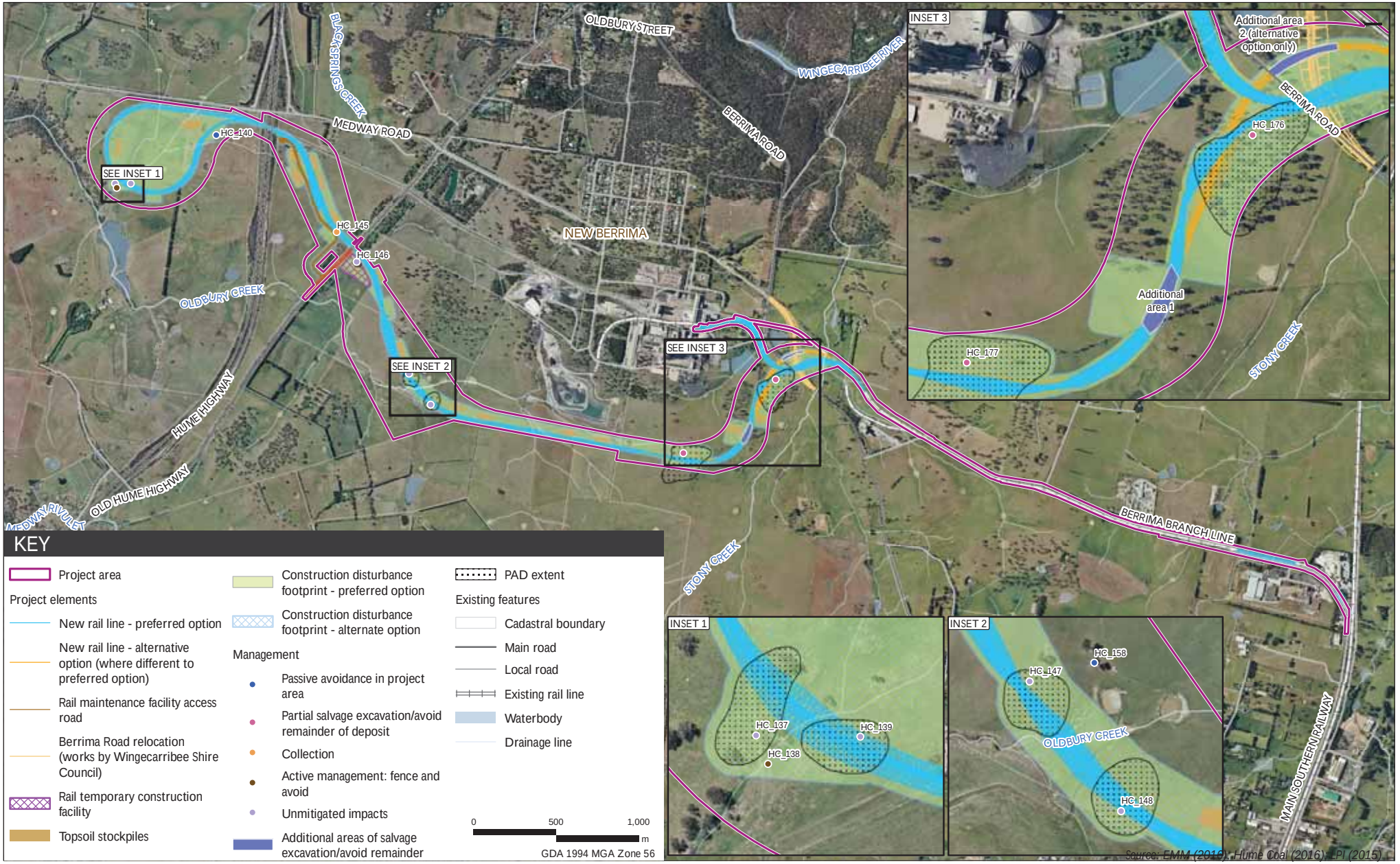
7.4.6 Unmitigated impacts

Unmitigated impacts will apply to five sites: HC_137, HC_139, HC_146, HC_147 and HC_148 (Table 5.1). Unmitigated impacts are acceptable because these sites relate to subsurface sites of low significance which do not warrant further investigation or salvage.

The suggested types of Aboriginal site management for both the preferred and alternative options are presented in Figure 7.1.

7.5 Site management summary

Table 7.1 provides a summary of Aboriginal sites, impact types and management measures.



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Aboriginal site management - project preferred and alternative options

Berrima Rail Project

Aboriginal cultural heritage assessment

Figure 7.1

EMM HUMECOAL

Table 7.1 Site management summary

Site Name	Property	Site type	Significance rating	Impact type	Level of impact	Consequence of impact	Management measure
HC_137	Mereworth	Subsurface artefact deposit	Low	Rail loop	Partial loss	Partial loss of value	Unmitigated impacts
HC_138	Mereworth	Grinding grooves	Moderate	None	None	None	Active management: fence and avoid
HC_139	Mereworth	Subsurface artefact deposit	Low	Rail loop/Overland conveyor	Partial loss	Partial loss of value	Unmitigated impacts
HC_140	Mereworth	Not a PAD	Low	None	None	None	Passive management: avoidance
HC_145	Mereworth	Isolated find	Low	Rail line	Total loss	Total loss of value	Collection
HC_146	Stonington	PAD	Low	Temporary accommodation	Total loss	Total loss of value	Unmitigated impacts
HC_147	Stonington	Subsurface artefact deposit	Low	Rail line	Partial loss	Partial loss of value	Unmitigated impacts
HC_148	Stonington	Subsurface artefact deposit	Low	Rail line	Partial loss	Partial loss of value	Unmitigated impacts
HC_158	Stonington	Potential scar tree	Low	None	None	None	Passive management: avoidance
HC_176	Boral Land	Subsurface artefact deposit	Higher moderate	Rail line	Partial loss	Partial loss of value	Partial salvage excavation/ avoid remaining deposit
HC_177	Leets Vale	PAD	Higher moderate	Rail line	Partial loss	Partial loss of value	Partial salvage excavation/ avoid remaining deposit

7.6 Special procedures

7.6.1 Aboriginal ancestral remains

In the event that known or suspected human skeletal remains are encountered during construction, the following procedure will be followed as soon as the suspected remains are discovered:

- in the immediate-term all work in the vicinity will cease and the find will be reported to the work supervisor who will advise the site supervisor or other nominated senior staff member;
- the site supervisor or other nominated senior staff member will promptly notify the police and the state coroner (required for human remains discoveries);
- the site supervisor or other nominated senior staff member will contact OEH for advice on the identification of skeletal material as Aboriginal remains and management of the skeletal material; and
- if it is determined that the skeletal material is Aboriginal ancestral remains, the RAPs will be contacted and consultative arrangements will be made to discuss ongoing care or reinterment of the remains.

7.6.2 Aboriginal keeping place

A keeping place is a designated secure area for the purpose of storing and curating Aboriginal cultural materials and their associated documentation.

RAPs have expressed that the objects recovered from the project area should be kept by an Aboriginal organisation. Yamanda Aboriginal Association has been nominated to be the custodians of the recovered artefacts which will be confirmed during the development of the ACHMP. This would involve applying for a care agreement with OEH for transferring the objects to Yamanda for safekeeping.

The facility for the recovered objects will be determined during the development of the ACHMP. All associated reports and records will be stored in close proximity to the artefacts, and kept in both hard copy and digital forms. The procedures to be adopted for access to the objects will be detailed in the ACHMP.

7.6.3 Discovery of new Aboriginal sites in the project area

In the event of the discovery of new Aboriginal sites in the project area, all construction work in the vicinity will halt and an archaeologist and the RAPs will be contacted to determine the significance of the object(s). Any new sites will be registered on the AHIMS database. Objects will be managed in a manner consistent with the measures outlined above and finalised in the ACHMP, including appropriate forms of salvage collection.

8 Conclusion

The archaeological landscape in and surrounding the project area can be considered in relation to the two catchments that it traverses: the Oldbury Creek catchment in the western part of the project area and the Stony Creek catchment in the eastern part. Both areas are established farmland which has been generally cleared and ploughed with the exception of a few isolated pockets of remnant or regrowth native vegetation.

In the Oldbury Creek catchment of the project area, the project will impact sites assessed to be of low archaeological significance. These sites have sparse assemblages and moderately disturbed contexts which results in low research potential. Furthermore, the mapped areas of archaeological sensitivity suggest that linear tracts of land with very low to negligible artefact densities will be impacted by the project. Overall, the project impacts in the Oldbury Creek catchment will not result in a significant loss to the archaeological resource and further archaeological investigation in these areas is considered unwarranted.

In the Stony Creek catchment, the project will impact linear tracts of sites assessed to be of higher moderate significance. These lack the archaeological integrity to be considered of high significance but are likely to contain a good representative sample of stone artefacts that warrant salvage above the other sites in the project area. With the implementation of management measures, a sample of the archaeological resource can be retrieved to mitigate this loss. As the impacts are confined to the rail corridor, most of the archaeological resource will remain on the land surrounding the project footprint.

The project has been designed as far as possible to avoid areas of archaeological sensitivity. This combined with the large undisturbed areas in the surrounding region containing comparable archaeological sites the cumulative impact of the project is very low given the general richness of the archaeological landscape and the amount of ground disturbance required for the rail infrastructure.

References

Commonwealth Scientific and Industrial Research Organisation (CSIRO) 2009, *Australian Soil and Land Survey Field Book*.

Department of Environment, Climate Change and Water (DECCW) 2010a, *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW*.

- 2010b, *Aboriginal Cultural Heritage consultation requirements for proponents*.

EMM Consulting Pty Limited (EMM) 2017a, *Hume Coal Project ACHA*. Prepared by EMM for Hume Coal Pty Limited.

- 2017b, *Berrima Rail Project EIS*. Prepared by EMM for Hume Coal Pty Limited.

Koettig, M 1981, *Hoddles Crossing to Alpine: Archaeological survey of the proposed F5 extension.* Report prepared for the Department of Main Roads, NSW.

Long, A 2005, *Aboriginal Scarred Trees in New South Wales: A Field Manual,* Department of Environment and Conservation, Hurstville.

Office of Environment and Heritage (OEH) 2010, *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*.

Total Earth Care 2007, *Aboriginal Heritage and Archaeological Study, Moss Vale 'Enterprise Zone'*. Report prepared by Oliver Brown for Connell Wagner on behalf of Wingecarribee Shire Council.

Abbreviations

ACHA	Aboriginal cultural heritage assessment
ACHMP	Aboriginal cultural heritage management plan
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
BNAC	Buru Ngunawal Aboriginal Corporation
cm	centimetres
Cubbitch Barta	Cubbitch Barta Native Title Claimants Aboriginal Corporation
DP&E	NSW Department of Planning and Environment
EIS	Environmental impact statement
EMM	EMM Consulting Pty Limited
ESD	Ecologically sustainable development
GAHA	Gundungurra Aboriginal Heritage Association Inc
GPS	Global positioning system
ILALC	Illawarra Local Aboriginal Land Council
IMT	Indurated mudstone/tuff
KNAC	Koomurri Ngunawal Aboriginal Corporation
m	metres
m^2	square metres
mm	millimetres
NIAC	Northern Illawarra Aboriginal Collective Inc
OEH	NSW Office of Environment and Heritage
PAD	Potential archaeological deposits
RAP	Registered Aboriginal party
SEARs	Secretary's environmental assessment requirements
Yamanda	Yamanda Aboriginal Association

Appendix A

Aboriginal consultation documentation

A.1 Consultation log and communications record

Aboriginal Consultation Log: Hume Coal Project & Berrima Rail Project Consultation log	Contact type	Date	Comment
Stage 1 - Advisory Requests Sent			
Organisation	**Contact type**	**Date Sent**	**Comment**
Local Newspaper Ad	Email and phone	See comment	First round of consultation: Run Date - Highlands Post Thursday 6/09/2012. Second round of consultation: Run date - Southern Highlands News 12/08/2013
OEH	letter	First round: 10/08/2012 Second round: 26/07/2013	First round: response received 21/08/2012 Second round: response received 6 August 2013
Illawarra LALC	letter	First round: 10/08/2012 Second round: 26/07/2013	First round: response received 11 December 2012 Second round: no response received
Registrar Aboriginal Owners	letter	First round: 10/08/2012 Second round: 26/07/2013	First round: response received 15 August 2012 Second round: response received 31 July 2013
Native Title Services NTSCORP	letter	First round: 10/08/2012 Second round: 26/07/2013	First round: response received 23 August 2012 Second round: response received 31 July 2013. NTSCORP noted that they could not provide details of Aboriginal groups or people. They sent the project information to groups they knew of to register directly by 16 August 2013.
Wingecarribe Local Council	letter	First round: 10/08/2012 Second round: 26/07/2013	First round: list received 29 August 2012. Second round: No response received for this round (delivery confirmation 30/07/2013): however previous list supplied August 29 2012 was used.
CMA	letter	First round: 10/08/2012 Second round: 26/07/2013	First round: response received 28 August 2012 Second round: response received 7 August 2013 stating that CMA would pass any information onto their Advisory Committee.
NNTT	letter	First round: 10/08/2012 Second round: 26/07/2013	First round: response received 17 August 2012 Second round: response received 30 July 2013
Aboriginal Group Notifications Sent Round 1			
Organisation	**Contact type**	**Date**	**Comments**
Tharawal Local Aboriginal Land Council	Registered post	04-Sep-12	Registed-29-07-2013
Cubbitch Barta	Registered post	04-Sep-12	Registered 18-Sep-12
Peter Falk Consultancy	Registered post	04-Sep-12	Registered 6-Sep-12
Illawarra Local Aboriginal Land Council	Registered post	04-Sep-12	Registered 11 December 2012 called 09/09/2013
Indigenous Historical Research	Registered post	04-Sep-12	Notified 29-7-2013
Gundungurra Aboriginal Heritage Association Inc.	Registered post	04-Sep-12	Registered 7-Sep-12
Moyengully Natural Resource Management Group	Registered post	04-Sep-12	Notified 29-7-2013 called 09/09/13
Coomaditchie United Aboriginal Corporation	Registered post	04-Sep-12	Notified 29-7-2013
Korewal Elouera Jerrungarugh	Registered post	04-Sep-12	Notified 29-7-2013 called 09/09/13
Bellambi Indigenous Corporation	Registered post	04-Sep-12	Notified 29-7-2013
Wodi Wodi Traditional Owners Corporation	Registered post	04-Sep-12	Notified 29-7-2013
Pejar Local Aboriginal Land Council	Registered post	04-Sep-12	Notified 29-7-2013
Yamanda Aboriginal Association	Registered post	04-Sep-12	Registered: 11/09/2013
Kula N Gadu Association	Registered post	04-Sep-12	Notified 26-7-2013
Gibbergunyah Aboriginal Association	Registered post	04-Sep-12	Notified 31-7-2013 (by email)
Aboriginal Group Registrations & Communications: Round 1			
Organisation	**Contact type**	**Date**	**Comments**
Cubbitch Barta	Registered post	18-Sep-12	Registered 18-Sep-12
Peter Falk Consultancy	Registered post	07-Sep-12	Registered 7-Sep-12
Illawarra Local Aboriginal Land Council	Registered post	11 December 2012 called 09/09/2013	Registered 11 December 2012 called 09/09/2013
Gundungurra Aboriginal Heritage Association Inc.	Registered post	Registered 7-Sep-12	Registered 7-Sep-12
Aboriginal Group Notifications Sent Round 2: All existing RAPs			
Organisation	Contact type	Date	Comments
Cubbitch Barta	Registered post	26-Jul-13	Delivery confirmation 01/08/2013
Peter Falk Consultancy	Registered post	26-Jul-13	Delivery confirmation 01/08/2013
Illawarra Local Aboriginal Land Council	Registered post	26-Jul-13	Called CEO on 09/09/13 and assured the continual consultatior
Gundungurra Aboriginal Heritage Association Inc.	Registered post	26-Jul-13	Delivery confirmation 01/08/2013
Aboriginal Group Notifications Sent Round 2: Potential RAPs from 2012			
Organisation	**Contact type**	**Date**	**Comments**
Tharawal Local Aboriginal Land Council	Registered post	26-Jul-13	Delivery confirmation 29/07/2013
Indigenous Historical Research	Registered post	26-Jul-13	Delivery confirmation 12/08/2013
Moyengully Natural Resource Management Group	Registered post	26-Jul-13	Returned to sender. Called 09/09/13: No response
Coomaditchie United Aboriginal Corporation	Registered post	26-Jul-13	Delivery confirmation 30/07/2013
Korewal Elouera Jerrungarugh	Registered post	26-Jul-13	Delivery confirmation 08/08/2013
Bellambi Indigenous Corporation	Registered post	26-Jul-13	Delivery confirmation 07/08/2013
Wodi Wodi Traditional Owners Corporation	Registered post	26-Jul-13	Delivery confirmation 23-8-2013
Pejar Local Aboriginal Land Council	Registered post	26-Jul-13	Returned to sender. Called 09/09/13: Not within LALC area
Yamanda Aboriginal Association	Registered post	26-Jul-13	Returned to sender. Called 09/09/13: No response
Kula N Gadu Association	Registered post	26-Jul-13	Delivery confirmation 31/08/2013
Gibbergunyah Aboriginal Association	Email	31-Jul-13	Contacted through EMAIL as requested
Gundungurra Tribal Council Aboriginal Corporation	Registered post	26-Jul-13	Called repeatedly for follow up but no response (see communications record)
Aboriginal Group Notifications Sent Round 2: Potential RAPs from agencies 2013			
Organisation	**Contact type**	**Date**	**Comments**
The Wadi Wadi Coomaditchie Aboriginal Corporation (represented by NIAC)	Registered post	23-Aug-13	Delivery confirmation 26/08/2013
Northern Illawarra Aboriginal Collective Inc (NIAC)	Registered post	23-Aug-13	Delivery confirmation 27/08/2013
Gandangara Elders Group	Registered post	23-Aug-13	Delivery confirmation 29/08/2013

The Wodi Wodi Elders Corporation	Registered post	23-Aug-13	Returned to sender. 24/09/2013. Called 09/09/13: No response
Woronora Plateau Gundungara Elders Council (NIAC)	Registered post	23-Aug-13	To be contacted through NIAC
RAP List: Aboriginal Group Registrations: (Round 1 & 2 combined)			
Organisation	**Contact type**	**Date registered**	**Comments**
Yamanda Aboriginal Association	letter	17-Sep-13	registration of interest received (letter dated 11 July but only sent 17 September 2013)
Tharawal Local Aboriginal Land Council	Email	29-Jul-13	Group registered then de-registered as not within their LALC boundary on 20/04/2014
Peter Falk Consultancy	Letter	01-Aug-13	re-registered
Northern Illawarra Aboriginal Collective Inc (NIAC)	Fax	08-Aug-13	registered
Koomurri Ngunawal Aboriginal Corporation	letter	20-Aug-13	registration of interest received (Through advertisement)
Illawarra LALC	Letter	11-Dec-12	Called CEO on 09/09/13 and assured the continual consultatior
Gundungurra Aboriginal Heritage Association Inc.	Email	07-Sep-12	registration of interest received
Cubbitch Barta Native Title Claimants Aboriginal Corporation	letter	18-Sep-12	registration of interest received
Buru Ngunawal Aboriginal Corporation (BNAC)	letter	26-Aug-13	registration of interest received (Through advertisement)
OEH & LALC notified of Registered Stakeholders			
Organisation	**Contact type**	**Date**	**Comments**
OEH & LALC notified of Registered Stakeholders	Letter	04-Oct-13	
Late registrants to be included in consultation			
Organisation	**Contact type**	**Date registered**	**Comments**
Moyengully Natural Resource Management Group	Email	16-May-14	
Koori Kulcha Experience	Email	23-May-14	
Joanne Goulding	Email	03-Nov-14	
Notice of continued consultation			
Organisation	**Contact type**	**Date Sent**	**Comments**
Peter Falk Consultancy	Letter	23-Jan-14	
Northern Illawarra Aboriginal Collective Inc (NIAC)	Letter	23-Jan-14	
Gundungurra Aboriginal Heritage Association Inc.	Letter	23-Jan-14	
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Letter	23-Jan-14	
Yamanda Aboriginal Association	Email - preferred	23-Jan-14	
Buru Ngunawal Aboriginal Corporation (BNAC)	Letter	23-Jan-14	
Koomurri Ngunawal Aboriginal Corporation	Letter	23-Jan-14	
Illawarra LALC	Letter	23-Jan-14	
Stage 2 - Project Presentation & Methodology Advice Sent			
Organisation	**Contact type**	**Date Sent**	**Comments**
Peter Falk Consultancy	Letter	17-Apr-14	Methodology received 22/04/14
Northern Illawarra Aboriginal Collective Inc (NIAC)	Letter	17-Apr-14	Methodology received 23/04/14
Gundungurra Aboriginal Heritage Association Inc.	Letter	17-Apr-14	Methodology received 28/04/14
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Letter	17-Apr-14	Methodology received 23/04/14
Yamanda Aboriginal Association	Email - preferred	17-Apr-14	Email confirmation of receipt 01/05/2014
Buru Ngunawal Aboriginal Corporation (BNAC)	Letter	17-Apr-14	Methodology received 08/05/2014
Koomurri Ngunawal Aboriginal Corporation	Letter	17-Apr-14	Sent to glen freeman via email 09/05/14
Illawarra LALC	Letter	17-Apr-14	Sent letter on 19/05/2014 with info pack again
Aboriginal Group Comments Received			
Organisation	Contact type	Date Rec'd	Comments
NIAC	Email	12/05/2014 and 14/05/2014	Reference to a burial site near Mt Gingenbullen. Request to find the exact burial ground. Also, email provides an extract on cultural significance of the area. Accepted the methodology. Requested detailed aerial photography of the project. Also mentioned the use of infrared aerial photography. EMM response provided 12/05/2016.
Koomurri Ngunawal Aboriginal Corporation	Email	12-May-14	Reference to women's sites that may be found along watercourses. Accepted the methodology. EMM response on 13/05/2016
Stage 2 - Fieldwork Stage 1 letter (letters not attached in Appendix A)			
Organisation	**Contact type**	**Date Sent**	**Comments**
Peter Falk Consultancy	Letter	16-May-14	
Northern Illawarra Aboriginal Collective Inc (NIAC)	Letter	16-May-14	
Gundungurra Aboriginal Heritage Association Inc.	Letter	16-May-14	
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Letter	16-May-14	
Yamanda Aboriginal Association	Letter	16-May-14	
Buru Ngunawal Aboriginal Corporation (BNAC)	Letter	16-May-14	
Koomurri Ngunawal Aboriginal Corporation	Letter	16-May-14	
Illawarra LALC	Letter	16-May-14	
Stage 2 - Fieldwork Stage 2 letter (letters not attached in Appendix A)			
Organisation	Contact type	Date Sent	Comments
Peter Falk Consultancy	Email	18-Jun-14	
Northern Illawarra Aboriginal Collective Inc (NIAC)	Email	18-Jun-14	
Gundungurra Aboriginal Heritage Association Inc.	Email	18-Jun-14	

Cubbitch Barta Native Title Claimants Aboriginal Corporation	Email	18-Jun-14	
Yamanda Aboriginal Association	Email	18-Jun-14	
Buru Ngunawal Aboriginal Corporation (BNAC)	Email	18-Jun-14	
Koomurri Ngunawal Aboriginal Corporation	Email	18-Jun-14	
Illawarra LALC	Email	18-Jun-14	
Rescheduled Fieldwork Stage 2 letter (letters not attached in Appendix A)			
Organisation	**Contact type**	**Date Sent**	**Comments**
Peter Falk Consultancy	Email	21-Oct-14	
Northern Illawarra Aboriginal Collective Inc (NIAC)	Email	21-Oct-14	
Gundungurra Aboriginal Heritage Association Inc.	Email	21-Oct-14	
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Email	21-Oct-14	
Yamanda Aboriginal Association	Email	21-Oct-14	
Buru Ngunawal Aboriginal Corporation (BNAC)	Email	21-Oct-14	
Koomurri Ngunawal Aboriginal Corporation	Email	21-Oct-14	
Illawarra LALC	Email	21-Oct-14	
Fieldwork Stage 3 letter (letters not attached in Appendix A)			
Organisation	**Contact type**	**Date Sent**	**Comments**
Peter Falk Consultancy	Email	04-Feb-15	
Northern Illawarra Aboriginal Collective Inc (NIAC)	Email	04-Feb-15	
Gundungurra Aboriginal Heritage Association Inc.	Email	04-Feb-15	
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Email	04-Feb-15	
Yamanda Aboriginal Association	Email	04-Feb-15	
Buru Ngunawal Aboriginal Corporation (BNAC)	Email	04-Feb-15	
Koomurri Ngunawal Aboriginal Corporation	Email	04-Feb-15	
Illawarra LALC	Email	04-Feb-15	
RAP Meeting 1: 26 August 2015. Presentation of project information and test excavation methodology			
Organisation	**Representative attendee**	**Date**	**Comments**
Peter Falk Consultancy	Unable to attend	26-Aug-15	Refer to meeting minutes
Northern Illawarra Aboriginal Collective Inc (NIAC)	Daniela Reverberi	26-Aug-15	Refer to meeting minutes
Gundungurra Aboriginal Heritage Association Inc.	Unable to attend	26-Aug-15	Refer to meeting minutes
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Glenda Chalker	26-Aug-15	Refer to meeting minutes
Yamanda Aboriginal Association	Unable to attend	26-Aug-15	Refer to meeting minutes
Buru Ngunawal Aboriginal Corporation (BNAC)	Wally Bell	26-Aug-15	Refer to meeting minutes
Koomurri Ngunawal Aboriginal Corporation	Glen Freeman	26-Aug-15	Refer to meeting minutes
Illawarra LALC	Unable to attend	26-Aug-15	Refer to meeting minutes
Proposed test excavation method: provision to RAPs			
Organisation	**Contact type**	**Date Sent**	**Comments**
Peter Falk Consultancy	Email	27-Aug-15	Response received 6 September 2015. EMM Reply 14/10/2015
Northern Illawarra Aboriginal Collective Inc (NIAC)	Email	27-Aug-15	
Gundungurra Aboriginal Heritage Association Inc.	Email	27-Aug-15	
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Email	27-Aug-15	Response letter received 10 September 2015. EMM Reply 14/10/2015
Yamanda Aboriginal Association	Email	27-Aug-15	
Buru Ngunawal Aboriginal Corporation (BNAC)	Email	27-Aug-15	
Koomurri Ngunawal Aboriginal Corporation	Email	27-Aug-15	
Illawarra LALC	Email	27-Aug-15	
Provision of RAP Meeting 1 Meeting minutes and presentation slides			
Organisation	**Contact type**	**Date Sent**	**Comments**
Peter Falk Consultancy	Email	03-Sep-15	
Northern Illawarra Aboriginal Collective Inc (NIAC)	Email	03-Sep-15	
Gundungurra Aboriginal Heritage Association Inc.	Email	03-Sep-15	
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Email	03-Sep-15	
Yamanda Aboriginal Association	Email	03-Sep-15	
Buru Ngunawal Aboriginal Corporation (BNAC)	Email	03-Sep-15	
Koomurri Ngunawal Aboriginal Corporation	Email	03-Sep-15	
Illawarra LALC	Email	03-Sep-15	
Fieldwork Stage 4 letter: Stage 4 survey (letters not attached in Appendix A)			
Organisation	**Contact type**	**Date Sent**	**Comments**
Peter Falk Consultancy	Email	17-Sep-15	
Northern Illawarra Aboriginal Collective Inc (NIAC)	Email	17-Sep-15	NIAC responded with email (18.09.2015) regarding other matters but a request was made that this information was only to be read by EMM, Hume Coal and OEH. OEH will be provided with this letter upon request.
Gundungurra Aboriginal Heritage Association Inc.	Email	17-Sep-15	
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Email	17-Sep-15	
Yamanda Aboriginal Association	Email	17-Sep-15	
Buru Ngunawal Aboriginal Corporation (BNAC)	Email	17-Sep-15	

Koomurri Ngunawal Aboriginal Corporation	Email	17-Sep-15	
Illawarra LALC	Email	17-Sep-15	
Update to late registrants regarding project			
Organisation	**Contact type**	**Date Sent**	**Comments**
Moyengully Natural Resource Management Group	Email	22-Sep-15	Attachments comprised draft test excavation method, RAP meeting 1 slides, Hume Coal Project slides, RAP meeting 1 minutes
Koori Kulcha Experience	Email	22-Sep-15	Attachments comprised draft test excavation method, RAP meeting 1 slides, Hume Coal Project slides, RAP meeting 1 minutes
Joanne Goulding	Email	22-Sep-15	Attachments comprised draft test excavation method, RAP meeting 1 slides, Hume Coal Project slides, RAP meeting 1 minutes
Fieldwork: test excavation engagement letter			
Organisation	**Contact type**	**Date Sent**	**Comments**
Peter Falk Consultancy	Email	30-Sep-15	
Northern Illawarra Aboriginal Collective Inc (NIAC)	Email	30-Sep-15	
Gundungurra Aboriginal Heritage Association Inc.	Email	30-Sep-15	
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Email	30-Sep-15	
Yamanda Aboriginal Association	Email	30-Sep-15	
Buru Ngunawal Aboriginal Corporation (BNAC)	Email	30-Sep-15	
Koomurri Ngunawal Aboriginal Corporation	Email	30-Sep-15	
Illawarra LALC	Email	30-Sep-15	
Revised test excavation method mail out			
Organisation	**Contact type**	**Date Sent**	**Comments**
Peter Falk Consultancy	Email	15-Oct-15	
Northern Illawarra Aboriginal Collective Inc (NIAC)	Email	15-Oct-15	
Gundungurra Aboriginal Heritage Association Inc.	Email	15-Oct-15	
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Email	15-Oct-15	
Yamanda Aboriginal Association	Email	15-Oct-15	
Buru Ngunawal Aboriginal Corporation (BNAC)	Email	15-Oct-15	
Koomurri Ngunawal Aboriginal Corporation	Email	15-Oct-15	
Illawarra LALC	Email	15-Oct-15	
Moyengully Natural Resource Management Group	Email	15-Oct-15	
Koori Kulcha Experience	Email	15-Oct-15	
Joanne Goulding	Email	15-Oct-15	
Note: Consultation continued with RAPs from December 2015 to June 2016 in regard to a separate Aboriginal heritage impact permit (AHIP) application within the project area			
Information regarding burial at Oldbury at the request of NIAC			
Organisation	**Contact type**	**Date Sent**	**Comments**
Peter Falk Consultancy	Email	29-Aug-16	
Northern Illawarra Aboriginal Collective Inc (NIAC)	Email	29-Aug-16	
Gundungurra Aboriginal Heritage Association Inc.	Email	29-Aug-16	
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Email	29-Aug-16	
Yamanda Aboriginal Association	Email	29-Aug-16	
Buru Ngunawal Aboriginal Corporation (BNAC)	Email	29-Aug-16	
Koomurri Ngunawal Aboriginal Corporation	Email	29-Aug-16	
Illawarra LALC	Email	29-Aug-16	
Moyengully Natural Resource Management Group	Email	29-Aug-16	
Koori Kulcha Experience	Email	29-Aug-16	
Joanne Goulding	Email	29-Aug-16	
Stage 4 - Issue of draft reports to RAPs: Hume Coal ACHA and Berrima Rail ACHA			
Organisation	**Contact type**	**Date Sent**	**Comments**
Peter Falk Consultancy	Email	30-Sep-16	Confirmed receipt of report on 11/10/2016 (see comms record)
Northern Illawarra Aboriginal Collective Inc (NIAC)	Email & Express Post	30/09/2016 and post on 14/10/2016	Requested print out on 13/10/2016. Initial response provided 13/10/2016. Subsequent response provided on 24/10/2016. Clarified response provided 10/02/2017
Gundungurra Aboriginal Heritage Association Inc.	Email & Express Post	30-Sep-16	Confirmed receipt of report on 13/10/2016
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Email & Express Post	30-Sep-16	Response received 31/10/2016
Yamanda Aboriginal Association	Email	30-Sep-16	Response received 31/10/2016
Buru Ngunawal Aboriginal Corporation (BNAC)	Email	30-Sep-16	Response received 31/10/2016
Koomurri Ngunawal Aboriginal Corporation	Email	30-Sep-16	Response received 12/10/2016
Illawarra LALC	Email	30-Sep-16	Unable to confirm receipt but called twice, including on 13/10/2016 (see comms record)
Moyengully Natural Resource Management Group	Email	30-Sep-16	Jo confirmed receipt and facilitated Yamanda's comments
Koori Kulcha Experience	Email	30-Sep-16	Unable to confirm receipt but called twice, including on 13/10/2016 (see comms record)
Joanne Goulding	Email	30-Sep-16	Confirmed receipt on 11/10/2016 (see comms record)
Stage 4 - RAP Meeting 2: Draft report review and management measures			

Organisation	Attendee	Date of meeting	Comments
Peter Falk Consultancy	Duncan Falk, Virginia Falk	25-Oct-16	Refer to meeting minutes
Northern Illawarra Aboriginal Collective Inc (NIAC)	No response, did not attend	25-Oct-16	Refer to meeting minutes
Gundungurra Aboriginal Heritage Association Inc.	No response, did not attend	25-Oct-16	Refer to meeting minutes
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Unable to attend	25-Oct-16	Refer to meeting minutes
Yamanda Aboriginal Association	Sent apologies on the day of meeting	25-Oct-16	Refer to meeting minutes
Buru Ngunawal Aboriginal Corporation (BNAC)	Wally Bell	25-Oct-16	Refer to meeting minutes
Koomurri Ngunawal Aboriginal Corporation	Glen Freeman	25-Oct-16	Refer to meeting minutes
Illawarra LALC	Confirmed intention to attend but did not attend	25-Oct-16	Refer to meeting minutes
Moyengully Natural Resource Management Group	Sent apologies on the day of meeting	25-Oct-16	Refer to meeting minutes
Koori Kulcha Experience	Confirmed intention to attend but did not attend	25-Oct-16	Refer to meeting minutes
Joanne Goulding	Unable to attend	25-Oct-16	Refer to meeting minutes
Stage 4 - Issue of email re: gathering statement of cultural significance			
Organisation	**Contact type**	**Date Sent**	**Comments**
Peter Falk Consultancy	Email	26-Oct-16	
Northern Illawarra Aboriginal Collective Inc (NIAC)	Email	26-Oct-16	
Gundungurra Aboriginal Heritage Association Inc.	Email	26-Oct-16	
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Email	26-Oct-16	
Yamanda Aboriginal Association	Email	26-Oct-16	
Buru Ngunawal Aboriginal Corporation (BNAC)	Email	26-Oct-16	
Koomurri Ngunawal Aboriginal Corporation	Email	26-Oct-16	
Illawarra LALC	Email	26-Oct-16	
Moyengully Natural Resource Management Group	Email	26-Oct-16	
Koori Kulcha Experience	Email	26-Oct-16	
Joanne Goulding			
Stage 4 - Issue of email to RAP meeting attendees who wished to provide statement of significance			
Organisation	**Contact type**	**Date Sent**	**Comments**
Peter Falk Consultancy	Email	26-Oct-16	
Buru Ngunawal Aboriginal Corporation (BNAC)	Email	26-Oct-16	
Koomurri Ngunawal Aboriginal Corporation	Email	26-Oct-16	
Stage 4 - Issue of email with meeting minutes attached			
Organisation	**Contact type**	**Date Sent**	**Comments**
Peter Falk Consultancy	Email	28-Oct-16	
Northern Illawarra Aboriginal Collective Inc (NIAC)	Email	28-Oct-16	
Gundungurra Aboriginal Heritage Association Inc.	Email	28-Oct-16	
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Email	28-Oct-16	
Yamanda Aboriginal Association	Email	28-Oct-16	
Buru Ngunawal Aboriginal Corporation (BNAC)	Email	28-Oct-16	
Koomurri Ngunawal Aboriginal Corporation	Email	28-Oct-16	
Illawarra LALC	Email	28-Oct-16	
Moyengully Natural Resource Management Group	Email	28-Oct-16	
Koori Kulcha Experience	Email	28-Oct-16	
Stage 4 - EMM response letters to relevant RAP comments and feedback			
Organisation	**Contact type**	**Date Sent**	**Comments**
Northern Illawarra Aboriginal Collective Inc (NIAC)	Email	15-Nov-16	Response recieved from NIAC on 1 December 2016. The outcome the was for NIAC to provide clarification on some of their draft ACHA comments, rather than having their comments clarified by EMM in the ACHA report. Refer to the final three entries in the communications record. NIAC provided clarified responses on 10 February 2017, which are included in the main body of the Hume Coal ACHA.
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Email	21-Nov-16	
Yamanda Aboriginal Association	Email	15-Nov-16	

Communications Record					
Date	**RAP**	**RAP Person**	**EMM person**	**Topic**	**Details**
9/09/2013	Illawarra LALC		Ryan Desic	Registration	**Re: request for registered parties:** Called about follow up for Aboriginal consultation registration. No answer. Left details
9/09/2013	Gundungurra Tribal Council Aboriginal Corporation		Ryan Desic	Registration	**Re: request for registered parties:** Called about follow up for Aboriginal consultation registration. No answer. Left details
9/09/2013	The Wodi Wodi Elders Corporation		Ryan Desic	Registration	**Re: request for registered parties:** Called about follow up for Aboriginal consultation registration. No answer. Left details
9/09/2013	Moyengully Natural Resource	Stewart	Ryan Desic	Registration	**Re: request for registered parties**: Stewart answered and said he was not to be contacted anymore. I found a phone number on the Moyengully website and called that number to no avail. I sent an invitation for registration to the email address provided on the website: moyengully@gmail.com.au. Still waiting reply
9/09/2013	Yamanda		Ryan Desic	Registration	Called 48 72 25 76 first. Person who answered said she didn't know about the project but sounded like they would be interested. I then called the original number associated with the email I sent which was 0412466 430, they said they had already registered but I could not find any email evidence from them. I said I would register them anyway and added it to the consultation log.
9/09/2013	Korewal Elouera Jerrungaugh		Ryan Desic		Called about follow up for Aboriginal consultation registration. No answer. Left phone number
1/11/2013	Joanne Goulding		Ryan Desic	Registration	Brendon Keena (Environmental Planner) sent me email to chase up Joanne Goulding about the Hume Coal Project. I called Joanne and she said she was busy in a meeting and said she would call back. Her email is jolego27@gmail.com. Phone: 0431 543 089
16/04/2014	Joanne Goulding		Ryan Desic	Registration	Talked to Joanne Goulding via phone. Stated that we would keep her updated on the project even though she did not register within the timeframe.
16/04/2014	Tharawal LALC	Megan Ely	Ryan Desic	Registration	Called TLALC to confirm if their registration is considered valid as the land is within Illawarra LALC area. Megan said she thought it was probably only relevant to Illawarra, but she would confirm with her Board and get back to me with her decision.
16/04/2014	Gundungurra Tribal Council Aboriginal Corporation	N/A	Ryan Desic	Registration	**Re: request for registered parties**: Attempted to call number provided on their website (02) 4782 9767 (which is different to the one originally in our records that also didn't work). Phone made 'beeping' sound as if it were a disconnected line. Also sent an email in a final attempt to call for registration from their organisation which included the original invitation to register. Email was sent to 'sharonbrown@gundungurra.org.au' as specified on their website.
30/04/2014	Yamanda		Ryan Desic	Registration	Called with no response to enquire if they have received their methodology as I was informed that they would only like to be contacted by email. Decision by Ryan was to send letter via post
30/04/2014	Tharawal LALC	Megan Ely	Ryan Desic	Registration	Called to follow up about their registration. Megan said that they would 'leave it to Illawarra'. Therefore effectively deregistering from the project.
1/05/2015	Tharawal LALC	Megan Ely	Ryan Desic	Registration	Email confirmation "Hi Ryan, As discussed Tharawal LALC are happy to leave this interest with Illawarra LALC".
9/05/2014	Koomurri Ngunawal (KNAC)	Glen Freeman	Ryan Desic	Contact details	Glen notified that he changed address and did not receive mail. Email was sent through to him with the assessment methodology. Hard copy sent too.
12/05/2014	NIAC	Daniela Reverberi	Ryan Desic	Cultural information	Information Re: cultural heritage significance of a burial ground. I replied by inquiring further about the burial ground and if it was in the project impact area.
12/05/2014	Koomurri Ngunawal Aboriginal Corop	Glen Freeman	Ryan Desic	Cultural information	Responded to the methodology and mentioned that Women's sites may be found adjacent to watercourses.
14/05/2014	NIAC	Daniela Reverberi	Ryan	Cultural information	Email regarding Mt Gingenbullen and Wongonbra, showing that they had previously surveyed Gingenbullen with Therin in 2007.

Date	RAP	RAP Person	EMM person	Topic	Details
19/05/2014	NIAC	Daniela Reverberi	Ryan Desic	Previous archaeological investigations	We have received information that there has been a previous archaeological investigation on Wongonbra, associated with a proposed subdivision, in which a number of artefacts were found (refer attached). The results were never submitted to AHIMS and the sites not officially recorded; they have asked that we keep this information confidential at this stage so please do not distribute.
21/05/2014	NIAC	Daniela Reverberi	Ryan Desic	Cultural information	Email with attachment with additional information regarding Gin Gen Bullen.
26/05/2014	Yamanda Aboriginal Corporation	Auntie Annie	Pamela Kottaras	Fieldwork	Rang the mobile number and spoke to Auntie Annie. She said she was from Wingecarribee but confirmed that she was representing Yamanda Local Aboriginal Land Council. I explained that we have a ILALC rep on fieldwork and as the team was of sufficient size, we wouldn't be requesting another person to represent Yamanda
26/05/2014	NIAC	Admin	Pamela Kottaras	Fieldwork	Fax of ILALC public liability insurance: Allianc. Scanned and save in file
23/05/2014	Moyengully Natural Resource	Jo Albany	Ryan Desic	Registration	Jo Albany requested registration for address 47 Sunrise rd Yerrinbool 2575. Mobile 0448882350. I replied stating on 20/08/2014 that registration commenced almost a year ago but that we would consult the group in the form of sending out any materials she requested. Jo Albany, Jo replied "Thanks for getting in touch" on 28/08/2014
31/10/2014	Yamanda Aboriginal Corporation	Auntie Annie	Ryan Desic	Fieldwork	Called Auntie Annie regarding fieldwork after discussions about insurance. Auntie Annie does not have worker's compensation for their workers and therefore I said we cannot employ people from Yamanda for insurance reasons. Auntie Annie acknowledged that she would not be participating in Stage 2 Hume field survey. I said that she should look into getting worker cover for future fieldwork, or alternatively let us know whether they are exempt from needing work cover.
2/02/2014	Yamanda Aboriginal Corporation	Auntie Annie	Ryan Desic	Fieldwork	Called Auntie Annie regarding Stage 3 fieldwork. Mentioned last staged of fieldwork and Auntie Annie said nothing had changed,
2/02/2014	Yamanda Aboriginal Corporation	Sue Purcell	Ryan Desic	Contact details	Sue called and stated that she was now the secretary for Yamanda and the previous manager had quit 5 weeks ago. Sue said that she would be the primary contact and that she would look into work cover and get back to EMM about Stage 3 survey.
4/02/2014	Yamanda Aboriginal Corporation	Sue Purcell	Ryan Desic	Fieldwork	Talked to Sue on the phone about getting a fieldworker out for the Stage 3 survey. Sue said that she had contacted Work Cover via the phone and they had said they do not need Work cover for their fieldworkers. I requested further evidence that this was correct over the phone. I followed this up with an email to Sue requesting for written evidence that they do not require workers compensation. The email explained that they would need to provide this information to be eligible to work.
17/02/2015	OEH	Jackie Taylor	Ryan Desic	Registration	Ryan emailed Jackie regarding a request for the address of Gundungurra Tribal Council Aboriginal Corporation. The letter explains the repeated attempts at contacting the group but to no avail. This group is a priority considering that it has a Native Title Claim over the area. Waiting response.
17/02/2015	Koomurri Ngunawal Aboriginal Corop	Glen Freeman	Ryan Desic	Fieldwork	Glen called about the registration of Gulgunya Ngunawal after I had requested the invoice for Stage 3 fieldwork to be from Koomurri Ngunawal Aboriginal Corporation and not Gulgunya as provided to me. Glen explained that Gulgunya was set up to allow younger people to have access to training. I explained that the invoice should still be made out as Koomurri Ngunawal Aboriginal Corporation. We would talk to Hume about further engagement with Gulgunya even though they are not technically a registered group.
17/02/2015	OEH	Jackie Taylor	Ryan Desic	OEH consultation	Jackie responded by referring the matter to Illawarra Region OEH office. South-East region is no longer part of this area.
18/02/2015	OEH	Sam Higgs	Ryan Desic	OEH consultation	EMM called OEH to identify if they had GTCAC's contact details. Sam responded to Jackie's referral and provided an alternative address for the group. I will chase this up. I responded by notifying them of other groups that are uncontactable.
6/03/2015	Gundungurra Tribal Council Aboriginal Corporation		Ryan Desic	Registration	Ryan tried new number 02 4729 3713 provided by Sam Higgs from OEH. Number was disconnected.
6/03/2015	Nicole.Maher@nntt.gov.au (Native Title Tribunal)	Nicole Maher	Ryan Desic	Registration	Ryan sent an email to Nicole requesting contact details for Gundungurra Tribal Council Aboriginal Corporation.

Date	RAP	RAP Person	EMM person	Topic	Details
9/03/2015	Nicole.Maher@nntt.gov.au (Native Title Tribunal)	Nicole Maher	Ryan Desic	Registration	Nicole replied giving the details of Eddy Neumann Lawyers who may have the details for the Gundungurra Tribal Council Aboriginal Corporation.
19/03/2015	Eddy Neumann Lawyers re: Gundungurra Tribal Council Aboriginal Corporation	Elspeth MacTavish	Ryan Desic	Registration	Ryan wrote an email requesting the contact details of Gundungurra Tribal Council Aboriginal Corporation. Elspeth replied on 26/03/2015 giving these details: '0411 146 063 or alternatively her email address is: sharonbrown@gundungurra.org.au'. Ryan noted that the mobile number was new but the email address was previously contacted on 16/04/2014 with no response.
2/04/2015	Gundungurra Tribal Council Aboriginal Corporation	Sharon Brown	Ryan Desic	Registration	Ryan emailed 'sharonbrown@gundungurra.org.au' noting that we had made numerous attempts to contact their organisation. Sharon replied saying 'Hi Ryan can you please let me know more details'.
2/04/2015	Gundungurra Tribal Council Aboriginal Corporation	Sharon Brown	Ryan Desic	Registration	Ryan called new number 0411 146 063 to contact Sharon Brown. No response, but left phone number. Still no response.
25/08/2015	Illawarra LALC	Derek Hardman	Ryan Desic	Consultation meeting 1	Derek Advised that he would not be able to attend the first meeting on 26 August 2015.
4/09/2015	OEH	Rose O'Sullivan	Ryan Desic	OEH consultation	Letter provided to OEH summarising archaeological survey to date and proposed test excavation method
15/09/2015	OEH	Rose O'Sullivan	Ryan	OEH consultation	Rose O'Sullivan provided response email to proposed test excavation method
18/09/2015	Wingecarribe Council	Reception	Ryan Desic	Gathering cultural information	Enquired to get the contact details for a Auntie Val in regard to consultation. I was provided with email address jenny.kena@wsc.nsw.gov.au. I sent an email to this address enquiring about getting Auntie Val's contact details (Note that Auntie Val is part of Yamanda).
18/09/2015	Marie Babaric	Marie Barbaric	Ryan Desic	Gathering cultural information	Called to acquire Auntie Val's contact details. No answer, but I left a message.
21/09/2015	NIAC	Daniela Reverberi	Ryan Desic	Confidential	Email concerning the project- contents to be confidential and not passed on. May be provided to OEH but not necessarily
21/09/2015	Marie Barbaric	Marie Barbaric	Ryan Desic	Gathering cultural information	Marie called back to discuss the project. Marie informed me that Auntie Val is a member of Yamanda, however she is quite old (79) and may not be the best person to talk to about the project. She mentioned that there may be someone who will assist us in identifying cultural heritage values for the area. She also expressed her concern for the number of groups registered for the project and proposed that many of them may not constitute cultural knowledge holders for the area. I resolved to provide Marie with an update of the project and recent consultation and that we still have time to identify cultural information for the project area. Marie stated that she would pass on the information to the relevant people who she thought would benefit from the information.
21/09/2015	Melissa Wiya from Wingecarribee Council	Melissa from Aboriginal affairs	Ryan Desic	Gathering cultural information	Melissa called and I responded that we have Auntie Val's details but we would benefit from getting Council's updated list. Melissa said that she would send this information through as soon as possible.
22/09/2015	Koori Kulcha	Marie Barbaric	Ryan Desic	Consultation meeting 1 and test excavation	Send out of additional information Including draft test excavation method and RAP meeting slides.
22/09/2015	Joanne Goulding	Joanne Goulding	Ryan Desic	Consultation meeting 1 and test excavation	Send out of additional information Including draft test excavation method and RAP meeting slides.
22/09/2015	Moyengully Natural Resource	Jo Albany	Ryan Desic	Consultation meeting 1 and test excavation	Send out of additional information Including draft test excavation method and RAP meeting slides.

Date	RAP	RAP Person	EMM person	Topic	Details
2/10/2015	Peter Falk Consultancy	Peter Falk	Ryan Desic	Test excavation method	Quoting Peter: "Ryan, With all the NEW finds for Hume are these sites included in the excavation or are they to be done separately?? Note: any road works and service installations with soil removal will require Aboriginal representation to MONITOR for Aboriginal Artefacts Salvage. Also any Aboriginal sites outside of the company footprint to be FENCED and POSTED copy of signs will be sent to you. The above will be in my report of your DRAFT report. Regards Peter My response: "Hi Peter, Yes we are changing the excavation to suit your previous comments and the new survey results." Note that my short response was given as a follow up letter was to be issued to all RAPs shortly on 15 October 2015.
13/10/2015	Yamanda Aboriginal Corporation	Auntie Annie	Ryan Desic	Fieldwork	I called in regard to Yamanda providing a site officer for the upcoming test excavation fieldwork. I reminded them that they require to have site officers with relevant insurance before they can go on site. Auntie Annie informed me that she would not be able to provide a fieldworker. She also stated that she opposed the Hume Coal Project, but it seemed that she was unsure of what the project involved. I reminded Auntie Annie about the meeting invitation, meeting minutes and project consultation that has been sent to her, but she still seemed unsure. I resolved that perhaps it was better for me to visit Yamanda personally to explain the project so that the project and EMM's role in the project was clear. Auntie Annie said that we could visit her at the cultural centre in Mittagong behind the RSL club on Mondays and Tuesdays from 9:30 to 2:30. I did not set a date because we had the excavation upcoming but said that we would be in touch soon.
14/10/2015	NIAC	Daniela Reverberi	Ryan Desic	Fieldwork	Called Daniela regarding the upcoming test excavation. She said that they would not be providing a fieldworker and also that their insurance had lapsed. She would possibly like to visit during the test excavation but she understands if safety prerequisites do not allow her to attend. However, she said that she would still like to be consulted in all areas.
14/10/2015	All RAPS	ALL RAPS	Ryan Desic	Fieldwork	Send out of SWMS and Medical certificate letter
15/10/2015	All RAPS	ALL RAPS	Ryan Desic	Fieldwork	Letter notification sent providing fieldwork roster and new meeting point for Monday 19 October 2015
15/10/2015	OEH	Rose O'Sullivan	Ryan Desic	OEH consultation	Revised test excavation letter sent to Rose O'Sullivan
16/05/2016	Yamanda Aboriginal Corporation	Auntie Val	Pamela Kottaras	Gathering cultural information	Telephone calls to Berrima District Historical and Family History Society; directed to Wingecarribee Shire Council Aboriginal Heritage Officer Melissa Wiya who provided the number 0412 466 430. The phone is held by Auntie Annie and Auntie Val is available at the cultural centre on Mondays and Tuesdays between 9.30 and 2.30. Will call tomorrow.
17/05/2016	Yamanda Aboriginal Corporation	Auntie Val	Pamela Chauvel	Gathering cultural information	Phoned the mobile number (above). Spoke to Cinnamon and told her that EMM will be in Hume this Thursday and would we be able to meet with Aunty Val then. She is discussing it with Aunty Val and will call back - I gave her Ryan's number.

Date	RAP	RAP Person	EMM person	Topic	Details
11/05/2016	NIAC	Daniela Reverberi	Ryan Desic	Cultural information (some comments in this letter refer to the separate farming AHIP on Hume Coal owned land).	Email as follows from Daniela: Hi Ryan, There seems to be some confusion, caused by Hume Coal. Continued farming is not as it seems. Wheat, canola (genetically modified??), etc, are not continued use but additional use. This need to be clarified and confusion by some stakeholders helped out. Also whilst Hume Coal claim the massacre site is out of the area under consideration, IT IS NOT OUT OF THE STAKE HOLDERS AREA. It is close by to the area claimed by Hume Coal - that is an important point - it means that it is probable that other burial sites are located within the study area - THAT IS THE POINT AND IT NEEDS TO BE MADE. The massacre mound (Tumuli) at Gin Gen Bullen is the highest in the state. This is an indication of the number of deaths. Stake holders need to be allowed to consider this and given the time needed. Information must be supplied to stake holders. Kind regards Daniela Reverberi (NIAC volunteer technical officer) Jenny Sajkovic - Bloodline owner Phoebe Sajcovic - Bloodline owner Keith Ball - Bloodline Owner
30/05/2016	NIAC	Daniela Reverberi	Ryan Desic	Gathering cultural information	(from Ryan) Hi Daniela, I am just chasing up some information after our recent chat regarding the burial mound that NIAC believes is on the Oldbury Farm. The two articles quoted by Chris Illert do not appear to give a specific reference to Oldbury Farm as the burial mound location. The closest reference is “On a high hill, a few miles from Berrima, is situated a tumuli, forty-four years since an old man was buried there” (Atkinson 1863, p.2). Is there any further information that you could give EMM that places the burial mound at the location (eg cultural knowledge) that may not be in historic text?
30/05/2016	NIAC	Daniela Reverberi	Ryan Desic	Gathering cultural information	(from Daniela) Hi Ryan, You need to view things in context. I have attached (pages 1, 2 & 3) some information for your reference. It would have been nice if people's comments had been included before the final version. The documents are instructions to Sgt Broadfoot, which was not public at the time but rather a private letter to a soldier from Government House itself, 8th May 1816. Then on 11th May 1816 is a public letter. Then on the 8th June 1816, a formal letter to England explaining the attempts to "apprehend or destroy", Aboriginal people, and to the massacre of 14 of them taking 5 as prisoners. But that wasn't all. On the 20 July 1816 a copy of the Sydney Gazette with 20 Aboriginals still needing capture each for ten pounds. You note that as recently as 3rd August 1816 the native Dewal, captured at Appin, was shipped to Tasmania as part of an ongoing relevant response. He was living at the Tharumba tribe which extended all the way to River Murray, and had nothing to do with Sydney's problems, but nevertheless this tribe was brought to account in the matter as well. The Governor simply didn't know who belonged to which tribe and saw all "darkies" as the same. Then five years later the bulk of the tribe at gin.gen.bulla.n is poisoned and buried on mass (after many thousands of years of previous successful occupancy). Behind the show and newsworthiness of material is the military action that is behind it. This is what is supplied here, as opposed to half known truths in the public media. There is much that could be said about this, but this is sufficient. Yours sincerely

Date	RAP	RAP Person	EMM person	Topic	Details
7/07/2016	Koori Kulcha	Marie Barbaric	Pamela Kottaras	Gathering cultural information	Called to discuss potential cultural issues and to ask who else EMM may need to consult to gather cultural information about the project area. Reception put me through to Marie's number. Left voicemail asking her to call me back.
4/07/2016	Moyengully Natural Resource Natural Resource Group	John Steward	Pamela Kottaras	Gathering cultural information	Called John's number to speak to Jo Albany and Joanne Goulding. Spoke with his wife who said she would ask John to call me back.
4/07/2016	Moyengully Natural Resource Natural Resource Group	Jo Albany	Pamela Kottaras	Gathering cultural information	Called mobile number 0448 882 350 to check in with Jo Albany to inform her that the project and Aboriginal cultural heritage assessment is underway. The main aim was to verify if Jo knew of any cultural information about the project area, as none had been provided previously. The voice prompt said not to leave a message as she doesn't check them but to send her an email. Email sent 1.13 pm to retroperspective@gmail.com
4/07/2016	Joanne Goulding	Joanne Goulding	Pamela Kottaras	Gathering cultural information	PBK called mobile 0431 543 089 to see if Joanne wanted to discuss the possibility of cultural sites. Spoke to Joanne who said she was at a NAIDOC function and asked that I call her back tomorrow at around the same time (1.14 pm).
4/07/2016	NIAC	Daniela Reverberi	Pamela Kottaras	Gathering cultural information	Called Daniela to confirm that the information I will be sending to all RAPs regarding the possible burial mound location on the Oldbury property is not confidential. I spoke to Daniela and Chris Illert who both confirmed that they wanted to share this information.
4/07/2016	Moyengully Natural Resource Group	Jo Albany	Pamela Kottaras	Gathering cultural information	Jo called back and confirmed that Moyengully Natural Resource Management Group would still like to be consulted about the project. I also asked if she knows Aunty Val and Jo said that she does and offered to speak with Aunty Val to arrange a meeting I asked if we could meet next week, either Monday or Tuesday and Jo said that she would try for those dates but that the cultural centre at Mittagong might be taking a break over the school holidays. Jo offered to get back to me about the meeting. We discussed involving Joanne Goulding as well. I will brief them on the project so far and request information on cultural sites in the area.
5/07/2016	Illawarra Local Aboriginal Land Council	Reception	Pamela Kottaras	Gathering cultural information	PBK requested Illawarra LALC's email address to send Illert's information about a burial ground at Olbury (it is the same as previously on file).
5/07/2016	Joanne Goulding	Joanne Goulding	Pamela Kottaras	Gathering cultural information	PBK spoke to Joanne who said she would like to attend the meeting that Aunty Val and Jo Albany will be at. Joanne gave me a preferred email address (refer to addresses tab).
8/07/2016	Moyengully Natural Resource Group	Jo Albany	Pamela Kottaras	Gathering cultural information	PBK emailed Jo to ask if a meeting with Aunty Val, Jo and Joanne Goulding had been arranged.
12/07/2016	Moyengully Natural Resource Group	Jo Albany	Pamela Kottaras	Gathering cultural information	PBK called Jo Albany to find out about arrangements to meet with her, Aunty Val and Joanne Goulding. Did not leave message as Jo requests an email or text. Email sent.
12/07/2016	Moyengully Natural Resource Group	Jo Albany	Pamela Kottaras	Gathering cultural information	Jo called Pamela PBK after 4.
12/07/2016	Moyengully Natural Resource Group	Jo Albany	Pamela Kottaras	Gathering cultural information	PBK called Jo regarding meeting arrangements on Monday. It was agreed that we would meet at 10.30, Monday 18 July at the Aboriginal Cultural Centre in Mittagong (corner of Henderson and Rainbow Streets behind the RSL) and that I will call Joanne Goulding to let her know so she can join us.
12/07/2016	Joanne Goulding	Joanne Goulding	Pamela Kottaras	Gathering cultural information	PBK called Joanne Goulding to invite her to the meeting with Aunty Val and Jo Albany on Monday. Went to voicemail so I left a message asking her to call me back but also left the location and time in case Joanne can't get back to me.
13/07/2016	Moyengully Natural Resource Group	Jo Albany	Pamela Kottaras	Gathering cultural information	PBK sent email to Jo Albany to confirm the meeting and to inform her that I had contacted Joanne Goulding and left a voicemail with the meeting invitation.

Date	RAP	RAP Person	EMM person	Topic	Details
18/07/2016	Meeting with elders and others	Val Mulcahy Annie Warren Kate Stevenson Ray Stevenson Pete Swain Melissa Wiya Cinnamon Johnson Jo Albany (organiser) Larry Whipper (Mayor)	Pamela Kottaras	Gathering cultural information	Meeting at the Aboriginal Community and Cultural Centre at Mittagong. We met for 2.5 hours and discussed the importance of consultation, the Aboriginal Place at Bundanoon (Jubilee Rock) and artefacts. Nobody knew of any cultural sites in the project area but all agreed that there were mass graves in the region. Jo Albany suggested that bringing a group of invited guests to site (Mereworth where the infrastructure is going to be) may be of benefit as the identification of sites is much easier when on the land.
25/07/2016	Moyengully Natural Resource Group	Jo Albany	Pamela Kottaras	Gathering cultural information	Pamela called Jo to let her know that a small group of elders were going to be invited to site. The list is Aunty Val, Aunty Annie, Aunty Kate and Uncle Ray. Jo said that Aunty Kate and Uncle Ray probably wouldn't be able to make it but that Uncle Max Harrison has a lot of knowledge about the area and we should consider inviting him. I said I would get back to her.
27/07/2016	Joanne Goulding	Joanne Goulding	Pamela Kottaras	Gathering cultural information	Pamela returned a call from Joanne about the meeting that was held on 18 July. Joanne wanted to confirm that it had gone ahead. I said it had but that there will be another meeting after the draft report had been sent to the RAPs.
27/07/2016	Moyengully Natural Resource Group	Jo Albany	Pamela Kottaras	Gathering cultural information	Email to Jo Albany inviting the elders to a site meeting
3/08/2016	Moyengully Natural Resource Group	Jo Albany	Pamela Kottaras	Gathering cultural information	Email to Jo Albany reminding her about the meeting
8/08/2016	Moyengully Natural Resource Group	Jo Albany	Pamela Kottaras	Gathering cultural information	Email from Jo Albany agreeing to Wednesday
8/08/2016	Moyengully Natural Resource Group	Jo Albany	Pamela Kottaras	Gathering cultural information	Email to Jo Albany thanking her and letting her know we'd be in touch.
16/08/2016	Moyengully Natural Resource Group	Jo Albany	Pamela Kottaras	Gathering cultural information	Telephone call from PBK to JA confirming site meeting on Wednesday 24/08. 10 am. Pickup to be determined.
23/08/2016	Moyengully Natural Resource Group	Jo Albany	Ryan Desic	Gathering cultural information	Call to Jo Albany about upcoming site visit tomorrow. Jo informed me that Aunty Annie is unwell due to a recent medical issue and that neither Aunty Val or Aunty Annie could come along. This was confirmed via email and I replied letting Jo know that we would re-assess the situation and organise another time once the Aunties are ready.
30/08/2016	ALL RAPS	ALL RAPS	Ryan Desic	Cultural information	Issued email regarding NIAC's request to inform all RAPs about a suggested burial site at the base of Mount Gingenbullen
2/09/2016	Moyengully Natural Resource Group	Jo Albany	Ryan Desic	Gathering cultural information	Ryan Desic to Jo Albany via email " I hope things are well with you. I am just touching base to see if the aunties would like to visit site soon? If Auntie Annie is still not well, would Auntie Val still like to visit? It is just that we are finalising our report and would need to cover this aspect soon to be able to include it in the report. Please let me know if sometime next week would be suitable?" Regards, Ryan

Date	RAP	RAP Person	EMM person	Topic	Details
8/09/2016	Moyengully Natural Resource Group	Jo Albany	Ryan Desic	Gathering cultural information	Ryan called Jo Albany to arrange site visit for the Aunties. No response to phone call.
11/10/2016	Peter Falk Consultancy	Peter Falk	Ryan Desic	Draft ACHA	Peter acknowledged receipt and said he was reading through the report in consultation with Duncan Falk
11/10/2016	Northern Illawarra Aboriginal Collective Inc (NIAC)	Daniela Reverberi	Ryan Desic	Draft ACHA	Mentioned that groups may not have the capacity to read the documents. Explained to Daniela how to download the report properly and what her roles and responsibilities are regarding the draft report. Noted that the key aim is to understand the impacts and management recommendations for Aboriginal cultural heritage for the project area. Also stated that we will be having a meeting that will attempt to show the evidence in more simplistic terms to get everyone on the same level. Daniela was concerned that the RAPs should not be the only ones to review the Hume Coal EIS. I informed her that the EIS will be put on public exhibition after it is lodged. Also there will be community sessions outside the upcoming RAP meeting to address other concerns.
11/10/2016	Gundungurra Aboriginal Heritage Association Inc.	Sharyn Halls	Ryan Desic	Draft ACHA	Called and left a message asking if Sharyn received the draft report or if she needed help. Ryan tried to call again on 13/10/2016 left message over voicemail again. Sharon called back to confirm receipt.
11/10/2016	Cubbitch Barta Native Title Claimants Aboriginal Corporation	Glenda Chalker	Ryan Desic	Draft ACHA	No response. Called again on 13/10/2016 and Glenda confirmed receipt of report.
11/10/2016	Yamanda Aboriginal Association	Jo Albany (see Moyengully Below)	Ryan Desic	Draft ACHA	See below regarding Jo Albany as she will facilitate the consultation.
11/10/2016	Buru Ngunawal Aboriginal Corporation (BNAC)	Wally Bell	Ryan Desic	Draft ACHA	Called Wally Bell but no response left a message about the draft. Called again on 13/10/2016 and Wally confirmed receipt
11/10/2016	Koomurri Ngunawal Aboriginal Corporation	Glen Freeman	Ryan Desic	Draft ACHA	Called and Glen confirmed receipt of report
11/10/2016	Illawarra LALC	Reception	Ryan Desic	Draft ACHA	Called and left a message regarding the report confirmation. Ryan tried to call again on 13/10/2016 left message over voicemail again
11/10/2016	Moyengully Natural Resource Management Group	Jo Albany	Ryan Desic	Draft ACHA	Called Jo Albany regarding draft report and asked what was a good date to have the upcoming meeting. She said she would print and disseminate the information to Yamanda members (Auntie Annie and Auntie Val) and try to get them to come along to the meeting.
11/10/2016	Koori Kulcha Experience	Marie Barbaric	Ryan Desic	Draft ACHA	Called Marie left a message regarding the report. I noted that she advised me previously that she was on the ILALC, and I asked whether it is more appropriate to send information directly to them. No confirmation was given.
11/10/2016	Joanne Goulding	Joanne Goulding	Ryan Desic	Draft ACHA	Called Joanne to check up on draft report. She said she would be going on leave for two weeks but would be back on 25 October. She said the most important thing would be to have Auntie Annie and Auntie Val present at the meeting to get their views on the situation.
13/10/2016	NIAC	Daniela Reverberi	Ryan Desic	Draft ACHA	Daniela sent an email regarding the draft ACHA. The email did not cover the actual report but addressed matters of confidentiality and getting a print out for ease of reading.
14/10/2016	NIAC	Daniela Reverberi	Ryan Desic	Draft ACHA	Ryan called Daniela to discuss the points raised in an email provided 13 October 2016. The outcomes of the conversation are summarised in an email from Ryan Desic to NIAC dated 14/10/2016
14/10/2016	NIAC	Daniela Reverberi	Ryan Desic	Draft ACHA	Ryan responded to Daniela's email dated 13 October 2016. This also includes the outcomes of the phone discussion on 14/10/2016.
26/10/2016	NIAC	Daniela Reverberi	Ryan Desic	Draft ACHA	Ryan called to discuss NIAC's response on 24/10/2016. Ryan sought further information on a number of the points provided in the email. Discussed maybe continuing the conversation the next day. Outcomes of conversation provided as part of EMM's response to NIAC's comments to the draft ACHA. It was concluded that Ryan would summarise the points of discussion over the telephone and include them in report.

Date	RAP	RAP Person	EMM person	Topic	Details
1/12/2016	NIAC	Daniela Reverberi	Ryan Desic	Draft ACHA	NIAC provided email responding to EMM's letter dated 15 November 2016 which provided clarification of NIAC's comments (see entry above) along with a response to each of their draft ACHA comments. NIACs email stated that it did not wish to be paraphrased and that they now wanted to provide their own clarifications on the matter.
10/02/2017	NIAC	Daniela Reverberi	Ryan Desic	Draft ACHA	Ryan called Daniela to discuss NIAC providing thier own clarification of the draft ACHA comments (refer previous two comments above). Daniela stated that they would revise the letter sent by EMM on 15 November 2016 in attempt to clarify some of the comments they made about the draft ACHA on 24 October 2016.

A.2 Stage 1 – notification and registration of registered Aboriginal parties

This section contains the following documents:

- Government agency requests and responses (first round in 2012 and second round in 2013);
- Public media notifications (first round in 2012 and second round in 2013);
- Aboriginal party invitation to register for the project (first round in 2012 and second round in 2013);
- Aboriginal party registrations of interest; and
- Notification to OEH and LALCs of registered parties.

EMGA MitchellMcLennan

Ground Floor, Suite 01, 20 Chandos St
St Leonards NSW 2065
PO Box 21
St Leonards NSW 1590

T +61 2 9493 9500
F +61 2 9493 9599
E info@www.emmconsulting.com.au

www.www.emmconsulting.com.au

10 August 2012

«Agency»
«Address1»
«Address2»
«Address3»

Re: Aboriginal consultation Hume Mine Project - identification of Aboriginal parties

Dear Sir/Madam,

EMGA Mitchell McLennan Pty Limited (EMM), on behalf of Cockatoo Coal Limited, is seeking to identify Aboriginal organisations or Aboriginal persons who hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or Aboriginal places in the area of the Hume Coal Project between Exeter and Belanglo State Forest, NSW which is bisected by the Hume Highway (see attached map).

The proposed development comprises an underground cut coal mine and related infrastructure within the area of Authorisation 349 shown on the attached map.

In accordance with the OEH *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* EMM requests information about relevant Aboriginal persons and Aboriginal organisations who you consider may have cultural knowledge relevant to the Authorisation 349 area and should be invited to register for consultation.

I would be appreciative of your response by 5 September 2012 to:

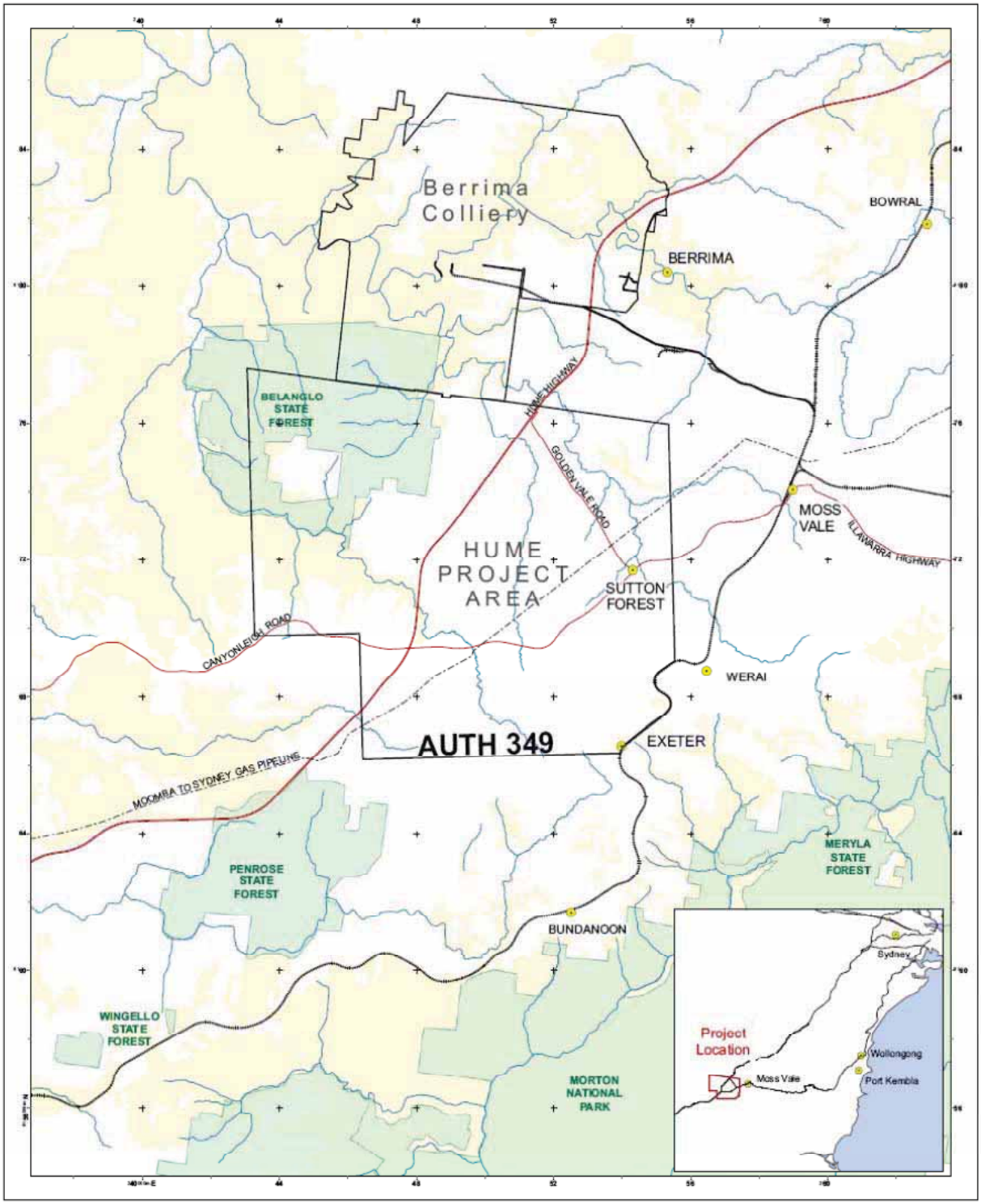
Hume Coal Project
c/o EMGA Mitchell McLennan
ATN: Neville Baker
PO Box 21
St Leonards NSW 1590

Fax: 9493 9599
email: nbaker@www.emmconsulting.com.au

Please advise at your earliest convenience if additional time is required to provide this information. Information received after 5 September 2012 might not be considered in the consultation process due to the assessment timeframe.

Yours sincerely

Neville Baker
Associate Director - Archaeologist
nbaker@www.emmconsulting.com.au



PROJECT: Hume Coal Project

TITLE: Figure 2.1 Regional context

DISCLAIMER: Cockatoo Coal Ltd has exercised all due care in the production of this map. However, Cockatoo Coal Ltd makes no warranty or representation to the client or third parties expressed or implied in respect to the information conveyed in this map, particularly with regard to any commercial investment decision made on the basis of this map. Use of this map by the client or third parties shall be at their own risk, and this map or extracts thereof may only be published with the permission of Cockatoo Coal Ltd.

DATA SOURCES: VECTOR DATA: BASED ON GEOSCIENCE AUSTRALIA AND LPI. PUBLICLY ACCESSIBLE DATA HAS BEEN INCORPORATED INTO THIS MAP (ACCREDITED ABOVE). COCKATOO COAL PROVIDES NO WARRANTY TO THE ACCURACY, COMPLETENESS OR CURRENCY OF THIS DATA.

REV	DESCRIPTION	DATE
0	Original map output	19/03/2012
1	Add grid	19/03/2012

SCALE 1:100,000 | SIZE A3 | DATUM GDA 94 | PROJECTION MGA ZONE 56

CURRENT ISSUE SIGNATURES: DRAWN SLG; CHECKED; APPROVED

HUME COAL

STATUS: CONFIDENTIAL

PROJECT NO: HUME | DRAWING NO: 120319-02

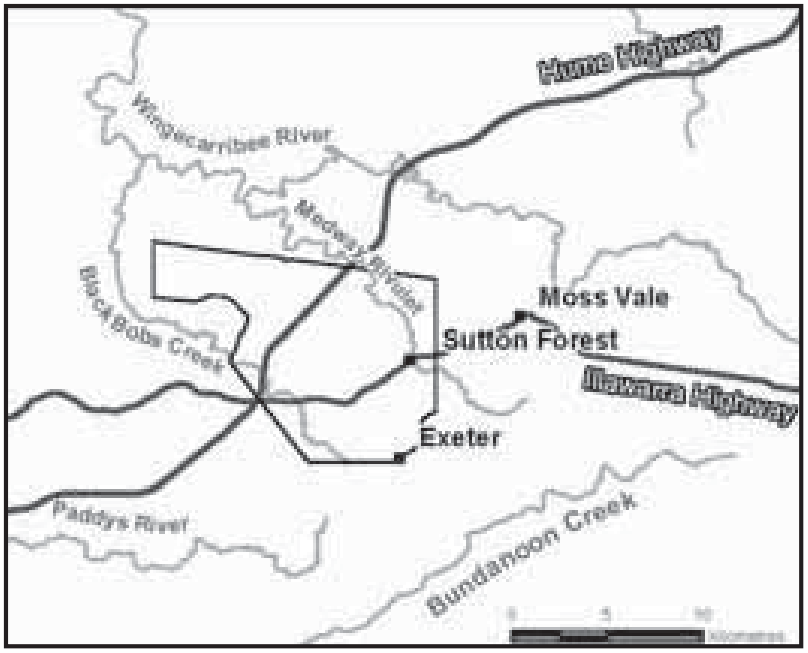
Path: N:\Hume\PROJECTS\120319_All_Jobs\120319_HUM_REF2\120319_HUM_REF2_Fig01-Locality-2.mxd

Notice of Aboriginal Consultation

Project name: Hume Project

Proponent: Hume Coal Pty Limited with project management by Cockatoo Coal Pty Limited

Location: Authorisation A349 located approx. 4 km west of Moss Vale (Wingecaribee local government area) including Sutton Forest, Belanglo Forest in the north west and Exeter in the south east.



The proposed project includes underground mining of coal with surface coal processing facilities and associated infrastructure.

Aboriginal organisations or Aboriginal persons who hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or Aboriginal places in the area of the proposed project are invited to register an interest in a process of community consultation with the proponent regarding the proposed activity.

The purpose of community consultation with Aboriginal people is to assist the proposed applicant in: 1) assessing the Aboriginal heritage values of the area, 2) preparing an Environmental Impact Statement under Part 4, Division 4.1 of the Environmental Planning and Assessment Act 1979, preparing any application for an AHIP (should one be required) and 3) to assist regulators in the assessment of Aboriginal heritage reports prepared for this project.

Registrations of interest must be submitted in writing on or before 20 September 2012. Registrations should include the name of a contact person, address and other relevant contact details, preferably including an email address. The names of registered Aboriginal parties will be passed on to the relevant Local Aboriginal Land Council and the Office of Environment and Heritage unless a request to the contrary is made.

Send registrations of interest to:
Hume Project
C/o EMGA Mitchell McLennan Pty Ltd
PO Box 21, St Leonards, NSW, 1590
Fax: (02) 9394 9599
Registration of interest does not guarantee paid involvement

Neville Baker

From: Southern Highland News Classifieds [classifieds.highlandnews@ruralpress.com]
Sent: Thursday, 30 August 2012 11:22 AM
To: Neville Baker
Subject: Re: Public Notice for 6 September edition
Attachments: Aborig Consultation_300812.pdf

Hi Neville,
Attached is a proof for the ad as provided to appear in the Public Notices of Highlands Post on Thursday 6/9/12.
Cost for ad based on size of content using base font size (18cmx 3columns) is $$718-74.
Payment and approval for ad are required by Monday 11am.

Kind Regards

HEATHER McLAUGHLIN
CLASSIFIEDS MANAGER
classifieds.highlandnews@ruralpress.com
28 Wingecarribee Street
P.O. Box 109
BOWRAL NSW 2576
T. (02) 4861 2333
F. (02) 4861 6905
www.southernhighlandnews.com.au

Fairfax Media

SOUTHERN HIGHLAND NEWS
HIGHLANDS POST
SNAPSHOT MAGAZINE

----- Original Message -----
From: Mail - Highlands Post
To: classifieds.highlandnews@ruralpress.com
Sent: Wednesday, August 29, 2012 5:22 PM
Subject: FW: Public Notice for 6 September edition

Classified Heather.

NATALIE MACPHERSON
ADVERTISING/SALES MANAGER
natalie.macpherson@ruralpress.com
28 Wingecarribee Street
P.O. Box 109
BOWRAL NSW 2576
T. (02) 4861 2333
F. (02) 4861 6905
www.southernhighlandnews.com.au

Fairfax Media

SOUTHERN HIGHLAND NEWS
HIGHLANDS POST
SNAPSHOT MAGAZINE

From: Neville Baker [mailto:nbaker@emgamm.com]
Sent: Wednesday, 29 August 2012 5:14 PM
To: mail.highlandspost@ruralpress.com
Subject: Public Notice for 6 September edition

Dear editor,

I wish to place the text and image in the attached document in the Public Notices section of the Highland Post 6 September 2012 Edition. The Notice should be an ordinary small font single column notice as per standard notice size.

Would you please advise the cost or if there is an alternate means of lodging this. The online method did not seem appropriate to this task as it did not allow for a line drawing, nor limited to single edition. I will arrange for credit card payment when advised.

Please reply by email or telephone 0488 939 505.

Best regards,

Neville Baker
Associate Director - Archaeologist

Now in Sydney, Newcastle and Brisbane.

EMM
EMGA Mitchell McLennan

Ground Floor, Suite 01
20 Chandos Street
St Leonards NSW 2065

PO Box 21
St Leonards NSW 1590

T 02 9493 9500 | D 02 9493 9516 | M 0488 939 505 | F 02 9493 9599

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St Leonards, NSW, 2065
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St Leonards, NSW, 1590

T +61 2 9493 9500
F +61 2 9493 9599
E info@www.emmconsulting.com.au

www.www.emmconsulting.com.au

4 September 2012

Re: Aboriginal Consultation for the Hume Project - identification of Aboriginal parties

Dear

EMGA Mitchell McLennan Pty Ltd (EMM), on behalf of Cockatoo Coal Limited is seeking to identify Aboriginal organisations or Aboriginal persons who hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or Aboriginal places in the area of Authorisation A349 located approximately 4 km west of Moss Vale (Wingecaribee Local Government Area) including Sutton Forest, Belanglo Forest in the north-west and Exeter in the south-east.

Your organisation has been identified by the Office of Environment and Heritage as having potential interest in registering for consultation in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*.

Cockatoo Coal Limited proposes to construct an underground cut coal mine and related infrastructure within the area of Authorisation 349. The project involves development activities under Part 4, Division 4.1 of the *Environmental Planning and Assessment Act* 1979.

If you wish to register your interest as an Aboriginal party your registration must be in writing (letter, fax or email), and include:

- your name/organisation; and
- current contact details (postal address, email, phone number/s).

This information must be received by Neville Baker (see contact details below) by close of business on Thursday 20 September 2012.

Hume Coal Project
Neville Baker
EMGA Mitchell McLennan
PO Box 21
St Leonards NSW 1590
Fax: 02 9493 9599

As required by OEH guidelines, details of people registering as Aboriginal Parties will be forwarded to OEH and the relevant Local Aboriginal Land Council unless you specify otherwise.

Registration of interest does not guarantee employment on fieldwork.

Yours sincerely

Neville Baker
Associate Director - Archaeologist
nbaker@www.emmconsulting.com.au

Notice of Aboriginal Consultation

Project name: Hume Project

Proponent: Hume Coal Pty Limited with project management by Hume Coal Pty Limited.

Location: Authorisation A349 located approx. 4km west of Moss Vale (Wingecarribee local government area) including Sutton Forest, Belanglo Forest in the north west and Exeter in the south east.

The proposed project includes underground mining of coal with surface coal processing facilities and associated infrastructure.

Aboriginal organisations or Aboriginal persons who hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or Aboriginal places in the area of the proposed project are invited to register an interest in a process of community consultation with the proponent regarding the proposed activity.

The purpose of community consultation with Aboriginal people is to assist the proposed applicant in: 1) assessing the Aboriginal heritage values of the area, 2) preparing an Environmental Impact Statement under Part 4, Division 4.1 of the Environmental Planning and Assessment Act 1979, preparing any application for an AHIP (should one be required) and 3) to assist regulators in the assessment of Aboriginal heritage reports prepared for this project.

Registrations of interest must be submitted in writing on or before Monday 26th August, 2013. Registrations should include the name of a contact person, address and other relevant contact details, preferably including an email address. The names of registered Aboriginal parties will be passed on to the relevant Local Aboriginal Land Council and the Office of Environment and Heritage unless a request to the contrary is made.

Send registrations of interest to:

Hume Project
C/o Ryan Desic
EMGA Mitchell McLennan Pty Ltd
PO Box 21, St Leonards, NSW, 1590
Ph: 02 9493 9500
Fax: 02 9493 9599

Registration of interest does not guarantee paid involvement.

Neville Baker

From: Nicole Williams [Nicole.Williams@wsc.nsw.gov.au]
Sent: Wednesday, 29 August 2012 4:27 PM
To: Neville Baker
Cc: Mark Pepping
Subject: Aboriginal Consultation Hume Mine Project List of interested Aboriginal Organisations/community Members
Attachments: List of Aboriginal Stakeholders Contact Groups.xls

Dear Neville,

Thank you for your recent request for the contact details of local Aboriginal organisations and community members who have an interest and/or knowledge of local Aboriginal heritage and sites of significance.

Please find attached a copy of the contact details of these persons/organisations.

Please note that during an update of this list, I have been unable to reach the contacts highlighted in blue to update their details so can only assume that they are still operating/residing at the same address.

If you have any further enquiries, please feel free to contact myself or Mark Pepping, Manager of Strategic and Community Development on 024868 085.

Kind regards,

Nicole

NICOLE WILLIAMS | Community Development Coordinator | Wingecarribee Shire Council
P: 4868 0866 | F: 4869 1203 | E: nicole.williams@wsc.nsw.gov.au | www.wsc.nsw.gov.au
Civic Centre Elizabeth Street Moss Vale NSW 2577 | PO Box 141 Moss Vale NSW 2577 | DX 4961 Bowral NSW 2576

Wingecarribee Council List of Aboriginal Stakeholders

Name	Contact Person	Contact Details
Cubbitch Barta	Chairperson: Glenda Chalker Cubbitch Barta Native Title Claimants Aboriginal Corporation.	
ILALC (Illawarra Local Aboriginal Land Council)	CEO: Sharalyn Robinson	
TLALC Tharawal Local Aboriginal Land Council)	Chairperson:Ross Evans	
Indigenious Historical Research	Adrian Shafer	
Gundungurra Aboriginal Heritage Association Inc.	Chairperson: Merle Williams	
Moyengully Natural Resource Management Group	John Steward	
Peter FalkConsultancy	Peter Falk	
Coomaditchie United Aboriginal Corporation	Po Box 160 Warrawong NSW 2502	
Korewal Elouera Jerrungarugh	Uncle Ruben Aunty Gwen Brown	
Kim Moran	Bellambi Indigenous Corporation 48 Rothery Road Bellambi NSW 2518 Ph: 42856836	
Wodi Wodi Traditional Owners Corporation	Aunty Elaine STURGEON	
Pejar Local Aboriginal Land Council (Goulburn to MossVale)	Coordinator Delise FREEMANChairperson: Alfie Walker	
Yamanda Aboriginal Association		
Kula N Gadu Association		
Gibbergunyah Aboriginal Association	Aunty Sandra Brooks	

List of Aboriginal Stakeholders

Name	Contact Person	Contact Details
Cubbitch Barta	Chairperson: Glenda Chalker Cubbitch Barta Native Title Claimants Aboriginal Corporation.	
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Gundungurra Aboriginal Heritage Association Inc.	Chairperson: Merle Williams	
Moyengully Natural Resource Management Group	John Steward	
Peter FalkConsultancy	Peter Falk	
Coomaditchie United Aboriginal Corporation	Po Box 160 Warrawong NSW 2502	
Korewal Elouera Jerrungarugh	Uncle Ruben Aunty Gwen Brown	
Kim Moran	Bellambi Indigenous Corporation 48 Rothery Road Bellambi NSW 2518 Ph: 42856836	
Wodi Wodi Traditional Owners Corporation	Aunty Elaine STURGEON	
Pejar Local Aboriginal Land Council (Goulburn to MossVale)	Coordinator Delise FREEMANChairperson: Alfie Walker	
Yamanda Aboriginal Association		
Kula N Gadu Association		
Gibbergunyah Aboriginal Association	Aunty Sandra Brooks	

Neville Baker

From: John Lennis [John.Lennis@cma.nsw.gov.au]
Sent: Tuesday, 28 August 2012 8:58 AM
To: Neville Baker
Subject: info

Nick

Under the act that we work under I am not allowed to pass on the information that you requested in your email of today 10th August 2012.
The Hawkesbury Nepean CMA has no interest in this project and will pass your email on to the member of our Advisory Committee for their information if they comment on this it is a individual person and not a representative of the Hawkesbury Nepean Catchment Management Authority

John Richard Lennis
Catchment Officer Aboriginal Communities
Hawkesbury-Nepean Catchment Management Authority
Level 4 | 2-6 Station St | Penrith NSW 2750 | PO Box 4515 Penrith Westfields NSW 2750
T: 02 4725 3046 | F: 02 4725 3088 | E: john.lennis@cma.nsw.gov.au
www.hn.cma.nsw.gov.au

Neville Baker

From: S Robinson [srobinson@exemail.com.au]
Sent: Tuesday, 11 December 2012 12:45 PM
To: Neville Baker
Subject: Expression of interest

Hi Neville

Thankyou for your letter dated 4 September 2012 regarding Cockatoo Coal Limited.

The Illawarra Local Aboriginal Land Council is a key stakeholder in the protection and preservation of Aboriginal Heritage and culture. The ILALC has a number of Aboriginal Site Officers that hold the knowledge required to participate in all Aboriginal studies and assessments.

If you require any further information regarding this matter, please don't hesitate to contact me on the number listed below.

Yours in UNITY

Sharralyn Robinson
Illawarra Local Aboriginal Land Council
CEO

I acknowledge the traditional owners and custodians of the land I work on as the first people of this country.

Neville Baker

From: Di Blasio, Jessica [Jessica.DiBlasio@nntt.gov.au]
Sent: Friday, 17 August 2012 4:11 PM
To: Neville Baker
Subject: National Native Title Search Results [SEC=UNCLASSIFIED]
Attachments: Search Results.pdf; NC97_7.pdf

UNCLASSIFIED

Dear Neville,

Thank you for your native title search request over AUTH 349.

Please find attached:

- search results
- NNTT fact sheet to help you understand the search result
- Map attachment

If you require any additional information, please feel free to contact me on the numbers below.

Regards,

Jessica Di Blasio | EXECUTIVE ASSISTANT/CLIENT SERVICES OFFICER
National Native Title Tribunal | Sydney office, Operations East
Level 16, Law Courts Building, Queens Square, Sydney, New South Wales 2000
Telephone (02) 9227 4000 | Facsimile (02) 9227 4030 | Email jessica.diblasio@nntt.gov.au
Freecall 1800 640 501 | www.nntt.gov.au
Facilitating timely and effective outcomes.

National Native Title Tribunal

Sydney Office, Operations East
Level 16, Law Courts Building,
Queens Square
Sydney NSW 2000
GPO Box 9973
Sydney NSW 2000
Telephone (02) 9227 4000
Facsimile (02) 9227 4030

17 August 2012

Neville Baker
Associate Director- Archaeologist
EMGA Mitchell McLennan
PO Box 21
St Leonards NSW 1590

Our Reference: 5072/12jd

Dear Mr Baker

Native Title Search Results of AUTH 349

Thank you for your search request of 10 August 2012 in relation to the above area.

Search Results
The results provided are based on the information you supplied and are derived from a search of the following Tribunal databases:

Register Type	NNTT Reference Numbers
Schedule of Applications (unregistered claimant applications)	Nil.
Register of Native Title Claims	NC97/7
National Native Title Register	Nil.
Register of Indigenous Land Use Agreements	Nil.
Notified Indigenous Land Use Agreements	Nil.

I have included a register extract, map attachment and a NNTT Registers fact sheet to help you understand the search result.

Please note that there may be a delay between a native title determination application being lodged in the Federal Court and its transfer to the Tribunal. As a result, some native title determination applications recently filed in the Federal Court may not appear on the Tribunal's databases.

The search results are based on analysis against external boundaries of applications only. Native title applications commonly contain exclusions clauses which remove areas from within the

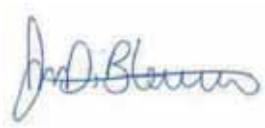
external boundary. To determine whether the areas described are in fact subject to claim, you need to refer to "Area covered by claim" section of the relevant Register Extract or Application Summary and any maps attached.

Search results and the existence of native title
Please note that the enclosed information from the Register of Native Title Claims and/or the Schedule of Applications is **not** confirmation of the existence of native title in this area. This cannot be confirmed until the Federal Court makes a determination that native title does or does not exist in relation to the area. Such determinations are registered on the National Native Title Register.

Tribunal accepts no liability for reliance placed on enclosed information
The enclosed information has been provided in good faith. Use of this information is at your sole risk. The National Native Title Tribunal makes no representative, either express or implied, as to the accuracy or suitability of the information enclosed for any particular purpose and accepts no liability for use of the information or reliance placed on it.

If you have any further queries, please contact me on 1800 640 501.

Yours sincerely



Jessica Di Blasio | EXECUTIVE ASSISTANT/CLIENT SERVICES OFFICER
National Native Title Tribunal | Sydney office, Operations East
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