

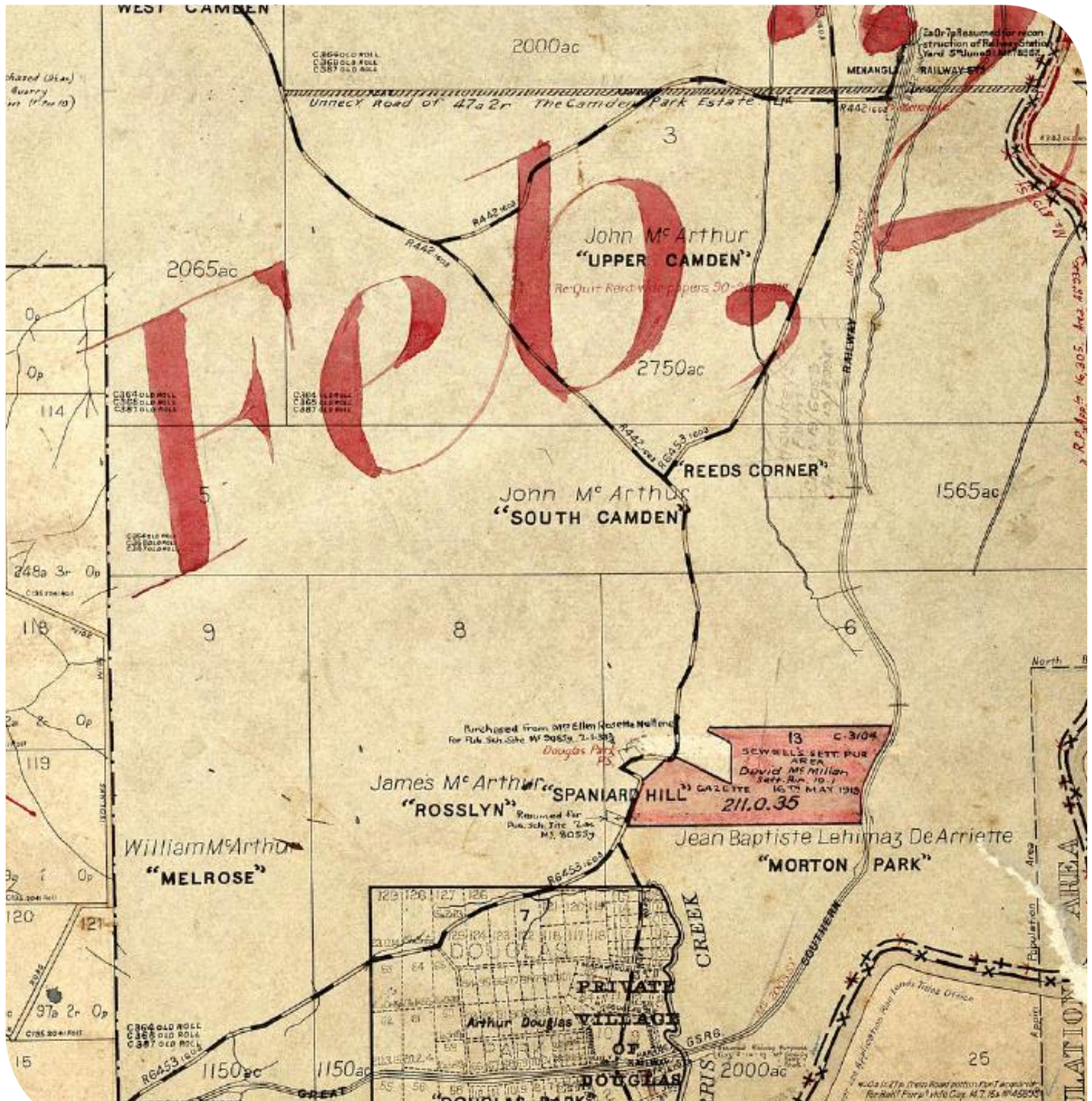


APPENDIX G

Historical Heritage Assessment

Historical Heritage Assessment Appin Mine Ventilation and Access Project

Prepared for South32 Illawarra Metallurgical Coal
Prepared by Niche Environment and Heritage | 1 June 2021



Document control

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*Cover Photo- Parish of Camden Map circa. 1921

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1. Introduction

1.1 Project Background

Niche Environment and Heritage Pty Ltd (Niche) was commissioned by South32 Illawarra Metallurgical Coal (IMC) to prepare a Historical Heritage Assessment (HHA) for the Appin Mine Ventilation and Mine Access Project (hereafter referred to as 'the Project') at Menangle.

1.2 Location of the Subject Area and Proposed Works

The focus of this report is within the area of land located at 345 Menangle Road, Menangle, New South Wales (henceforth referred to as the 'Subject Area'). The Subject Area is comprised of Lot 20A DP 4450 (Figure 1).

An integral requirement of underground mining is adequate ventilation infrastructure and mine access facilities to ensure a safe and efficient underground working environment. Appin Mine operations are progressing further away from the existing surface infrastructure located in the Appin and Douglas Park areas, and additional infrastructure is required to support the ongoing operations.

The Project involves the construction and operation of a downcast ventilation shaft (Ventilation Shaft 7), an upcast ventilation shaft (Ventilation Shaft 8), three (3) extraction fans, ducting and evases and associated ancillary infrastructure. Based on the current mining schedule, the additional ventilation shafts are required to be operational prior to 2025.

The Project also involves the development of mine access facilities including a headframe and personnel and materials winder (within Ventilation Shaft 7) and surface facilities consisting of offices, stores, bathhouse facilities and car parking areas. The establishment of these facilities would provide access for personnel and consumable materials to the Mine and will increase the safety and efficiency of transporting personnel and consumable materials underground.

To support the key infrastructure noted above, the Project will also include the following activities:

- Installation of temporary and permanent site access arrangements, including upgrade or improvement to the Menangle Road intersection, internal roadways, associated hardstand and car parking areas.
- Site preparation, including clearing of vegetation, demolition of existing structures and earthworks.
- Installation of appropriate security (e.g. fencing) to prevent unauthorised access to the site.
- Installation of a water supply, power supply and transmission and associated electrical switch rooms, transformers and ancillary infrastructure.
- Shaft material/spoil handling and emplacement activities and associated revegetation and landscaping activities to minimise visual impact of the site.
- Installation of personnel amenities such as bathhouses (e.g. changerooms), administration facilities and mines rescue facilities.
- Installation of diesel storage tanks and associated pipelines.
- Progressive development of sumps, pumps, pipelines, water storages and other water management infrastructure including fire protection and sewerage treatment facilities.
- Installation of covered storage areas.
- Installation of communications equipment including fibre optic cable and wireless infrastructure.
- Installation of a service borehole to provide underground services.
- Controlled release of excess water and/or re-use or water where practicable.
- Progressive rehabilitation of disturbed areas post construction.

- Installation of erosion and sediment control infrastructure, where required.
- Other associated minor infrastructure, plant, equipment and activities.

The Project would be similar to previously approved ventilation and mine access infrastructure of the Appin Mine and will not increase the volume of coal produced. Coal handling infrastructure is not proposed as part of the Project.

The shafts would be constructed from the surface down to the underground workings using conventional shaft sinking methods (mechanical excavation, drilling and controlled blasting) with material from the excavation being removed from the top of the shaft. The excavated material resulting from the construction of the shafts would be used as engineered fill and for construction of earth screening bunds and sediment dams. Where practicable, excess material would be stockpiled on-site, revegetated and used for future rehabilitation of the shaft site upon decommissioning.

The project will comprise multiple phases of construction and operation.

Construction of the ventilation shafts is critical to the ongoing safe and efficient operation of the Appin Mine, and as such, will take priority for the construction phase. Construction of the downcast shaft will commence first. Once the shaft sinking is complete and the ventilation infrastructure is installed, each shaft will commence commissioning and operation immediately.

The construction phase (12-18 months) for establishing mine access infrastructure would occur subsequent to the ventilation infrastructure. Construction of mine access infrastructure will be influenced by scheduling and timing of longwall operations over the life of the BSO Project and will be developed in parallel with the requirements of the ongoing mining operations.

Activities associated with sinking the shafts would occur 24 hours per day, seven days per week. The remainder of construction activities associated with the facility (e.g. installation of surface infrastructure) would generally be limited to daytime construction hours¹. Once operational, the site would be required to operate 24 hours per day, seven days per week, consistent with other similar facilities of the Mine.

1.3 Project objectives

This HHA report addresses the following outcomes:

- **Statutory overview:** identification of the statutory constraints which apply to the proposed works.
- **Historical overview:** analysis of the history of the Subject Area in order to inform the assessment of heritage significance and archaeological profile of the site.
- **Physical evidence at the site:** a site inspection of the Subject Area which is used to further inform this assessment and amend or confirm the historical analysis.
- **Significance assessment:** use of the standard NSW assessment criteria to develop a statement of heritage significance which entails the assessment of the Subject Area with respect to the immediate region and the individual significance of items identified within the Subject Area.
- **Recommendations:** recommend strategies to manage the impacts of the proposed works on the heritage significance of the Subject Area and its components. The assessment will also provide recommendations for unexpected finds during excavation activities.

¹ Daytime construction hours are defined as Monday to Saturday, 7.00am to 6.00pm.

1.4 Methodology

This HHA has been prepared in accordance with the principles and methodology contained in *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (2013), hereafter referred to as 'the Burra Charter'.

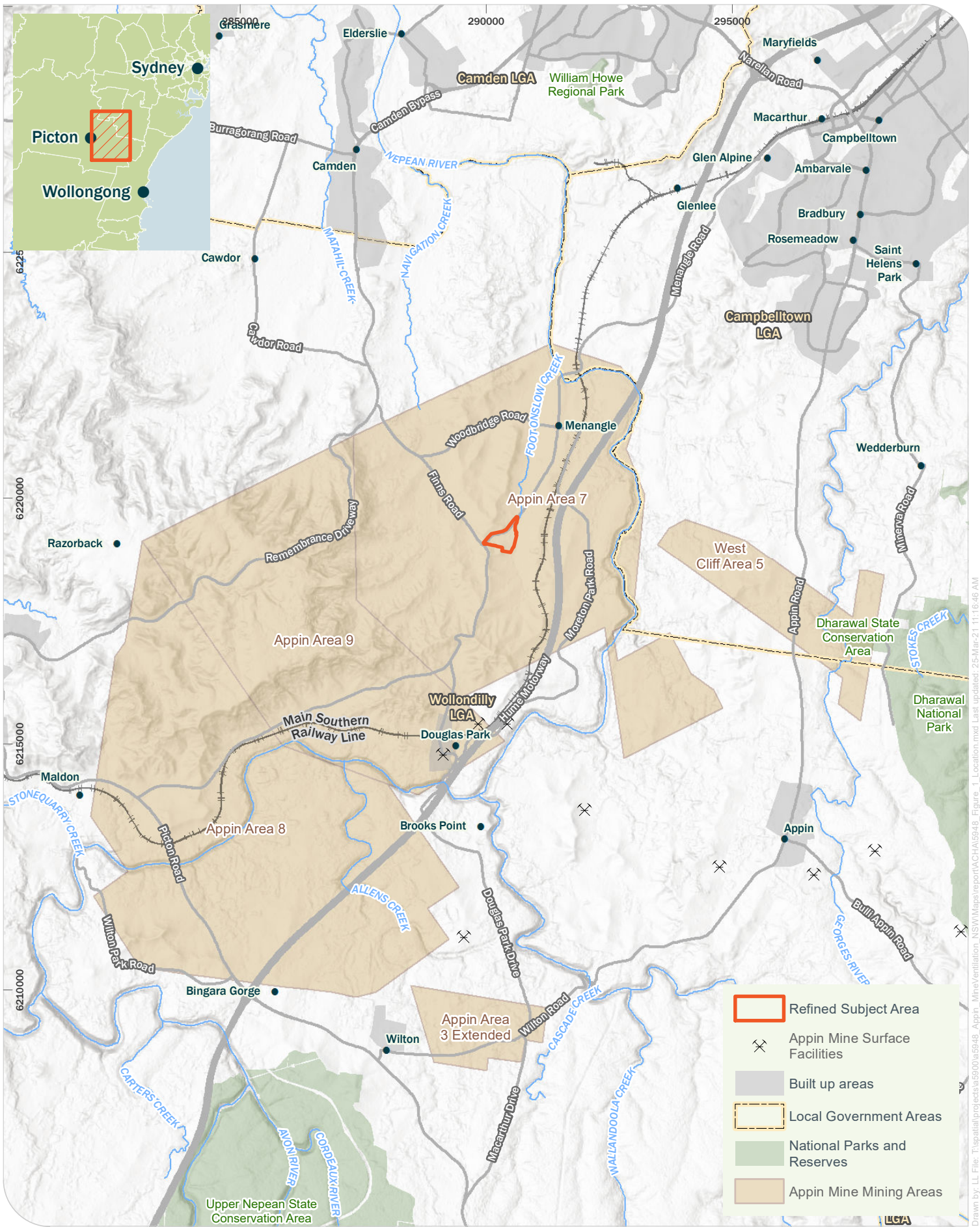
The Burra Charter outlines a series of best practice principles and measures for heritage investigation and conservation. The Burra Charter is supported by a series of Practice Notes that provide practical advice in the application of the Burra Charter. The Burra Charter was first adopted in 1979 and has been subject to numerous updates with the most recent iteration adopted in October 2013. The policies and legislative guidelines developed by the Heritage Council of NSW are guided by the Burra Charter.

This report has also been prepared in accordance with the best practice standards set out by the NSW Heritage Division including:

- *Assessing Heritage Significance* (Heritage Office (former), 2001)
- *Assessing Significance for Historical Archaeological Sites and 'Relics'* (Heritage Council, 2009).

1.5 Authorship and acknowledgements

This HHA has been written by John McLellan Gillen (Heritage Consultant) and Sarah McGuinness (Senior Heritage Consultant, Niche), with document review and quality control provided by Renée Regal (Team Leader- NSW Heritage) with technical assistance provided by Matthew Harris (Team Leader- GIS). Unless otherwise attributed, images used in this report are produced by Niche.



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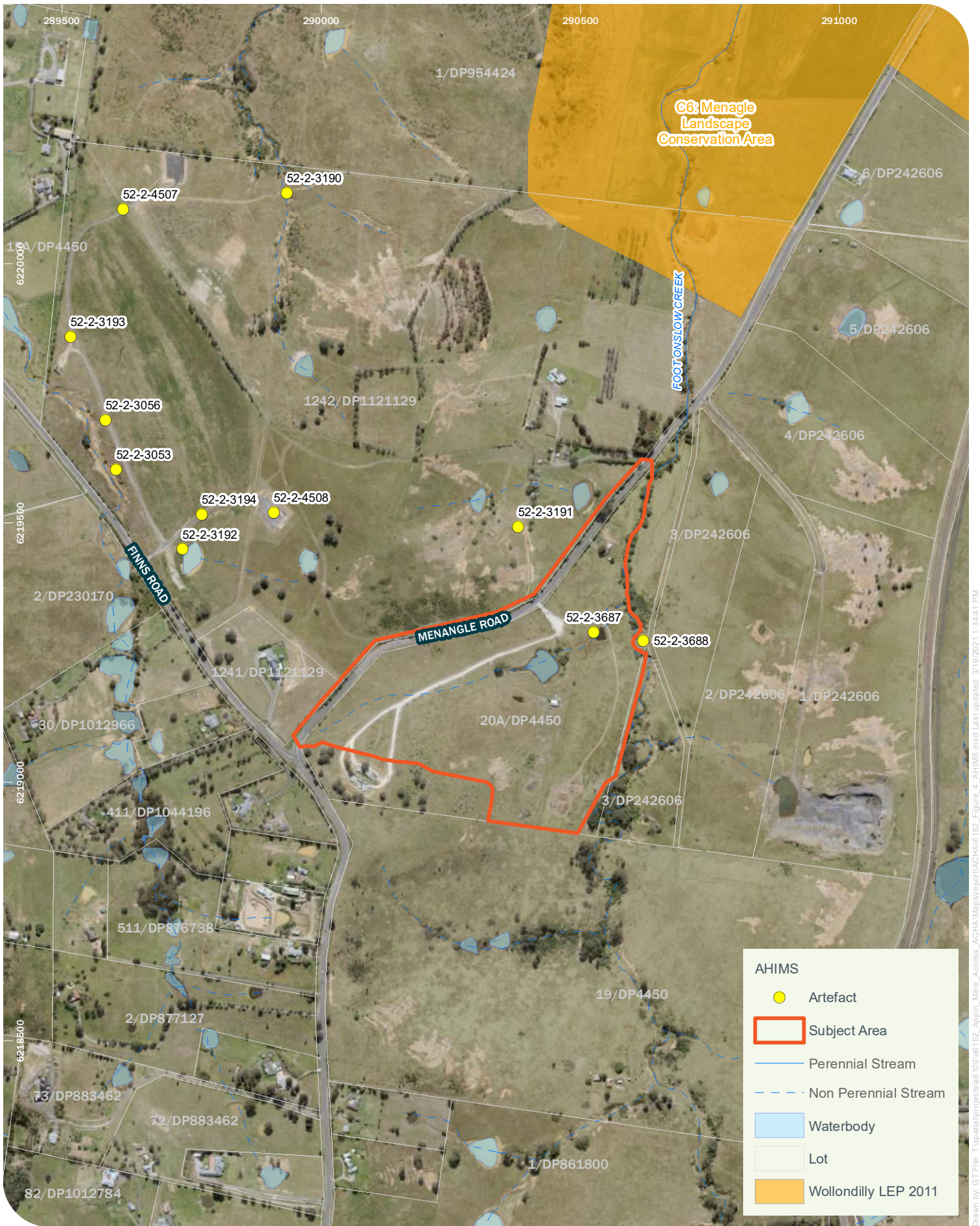
Regional Location
 Appin Mine Ventilation and Access Project
 HHA

Figure 1

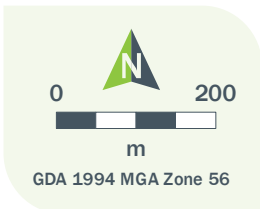
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Subject Area with AHIMS and Heritage Items
 Appin Mine Access and Ventilation Project HHA

Figure 3

2. Regulatory and Assessment Framework

This section provides a summary of relevant legislation and associated planning instruments designed to protect and conserve significant heritage items and their values.

2.1 Commonwealth and National Legislation

2.1.1 Environment Protection and Biodiversity Conservation Act 1999

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places. Under the EPBC Act, protected heritage items of significance are listed on the National Heritage List (NHL) or the Commonwealth Heritage List (CHL). The NHL provides protection to places of cultural significance to the nation of Australia, while the CHL comprises natural, Aboriginal and historic heritage places owned and controlled by the Commonwealth.

No items on the CHL or NHL were identified within the Subject Area.

2.2 NSW State Legislation

Heritage Act 1977

The *Heritage Act 1977* (hereafter referred to as 'the Act') affords statutory protection to those items identified as having heritage significance and which form part of the NSW heritage record. The Act defines a heritage item as "a place, building, work, relic, moveable object or precinct". Items that are assessed as having State heritage significance are listed on the NSW State Heritage Register (SHR). Proposals to alter, damage, move or destroy heritage items listed on the SHR (or protected by an Interim Heritage Order [IHO]), require an approval under s60 of the Act.

Archaeological features and deposits are afforded statutory protection by the 'relics provisions' of the Act. A relic is defined as "any deposit, artefact, object or material evidence that relates to the settlement of the area that comprises NSW, not being Aboriginal settlement, and is of State or local heritage significance". Land disturbance or excavation that will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed is prohibited under the provisions of the Act, unless carried out in accordance with a permit issued under s140 or s139 for Local heritage sites and s60 for State heritage sites of the Act.

There is no SHR listing within the Subject Area.

State Heritage and Conservation (s.170) registers

Under s.170 of the Act, NSW government agencies are required to maintain a register of heritage assets under their control or ownership. Each government agency is responsible for ensuring that the items entered on its register under s.170 are maintained with due diligence in accordance with State Owned Heritage Management Principles. Items listed on s.170 Heritage and Conservation Registers are listed on the State Heritage Inventory (SHI), and some are also listed on the SHR.

There are no s.170 listings for the items within the Subject Area.

Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 (EP&A Act) establishes the framework for cultural heritage values to be formally assessed in the land use planning process in NSW. The EP&A Act also requires local governments to prepare planning instruments, such as Local Environmental Plans (LEPs) to provide guidance on the level of environmental assessment required.

Wollondilly Local Environmental Plan 2011

Heritage items within the Wollondilly LGA are listed in Schedule 5 of the Wollondilly LEP 2011. The Wollondilly Development Control Plan (DCP) (2011) gives guidance and outlines controls in place to regulate development within the Wollondilly LGA. These items are subject to the planning controls and provisions set out in Clause 5.10 (Heritage Conservation) of that LEP.

There no LEP listings for the items within or in near proximity the Subject Area.

2.2.1 The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance (2013)

This HHA has been prepared in accordance with the principles and methodology contained in the Burra Charter.

The Burra Charter outlines a series of best practice principles and measures for heritage investigation and conservation. The Burra Charter is supported by a series of Practice Notes that provide practical advice in the application of the Burra Charter. The Burra Charter was first adopted in 1979 and has been subject to numerous updates with the most recent iteration adopted in October 2013. The policies and legislative guidelines developed by the Heritage Council of NSW are guided by the Burra Charter.

3. Historical Context

This section discusses the history of the immediate area surrounding the Subject Area and provides an overview of the historical context of this site. The purpose of this context is to shape the understanding of heritage values connected with the site, and to provide a baseline for examining the archaeological potential of the Subject Area.

3.1 Historical 'Phases' of the Subject Area

The following historical phases of development have been identified for the Subject Area. These phases are:

- Phase 1- The Pre-European Aboriginal landscape
- Phase 2- 'Cowpastures' and the contact landscape
- Phase 3- South Camden Estate
- Phase 4- 20th Century farming.

3.2 Regional Historical Overview

3.2.1 Environmental Context

The Subject Area is located on the southern margins of the Cumberland Plain, which is characterised by low lying, gently undulating plains and hills (Hazelton and Tille 1990). The Subject Area is also located on the peripheries of the Woronora Plateau, as defined by the gorges and sandstone plateaus found to the east and the incised Nepean Gorge. Vegetation has been largely cleared across the wider area, with introduced pastoral grasses the current dominant vegetation, with isolated pockets of residual Cumberland Plain Woodland.

3.2.2 Pre-European Aboriginal Landscape

It is now proposed that Aboriginal occupation of Australia dates back at least 65,000 years based on results from Madjedbebe, a rockshelter located in northern Australia (Clarkson et al. 2017). The greater Sydney region has been inhabited by Aboriginal people for at least 35,000 years. The earliest known occupational site of the Cumberland Plain and generally in the Sydney Basin is located north of Pitt Town, south of the Hawkesbury and the cultural deposits have been dated by Optically Stimulated Luminescence (OSL) to 36,000+/-3000 BP (Williams et al. 2012).

The Menangle area is the traditional country of the Tharawal people. Tindale (1974) identified the Tharawal boundaries as being from the south side of Botany Bay to north of the Shoalhaven River, and running inland to the Campbelltown and Camden area (Attenbrow 2010: 34, SA Museum 2010). Local Aboriginal elder Glenda Chalker describes the Appin and Douglas Park area as being 'Gundungurra and Tharawal tribal country' as the area is a transitional boundary between the Tharawal and their westerly neighbours, the Gundungara (Attenbrow 2010: 23, DEC 2007: 7). Attenbrow (2010:35) points out that such boundary mapping, undertaken as it was in the nineteenth century is indicative at best, however, there appears to be reasonably strong agreement between those who have mapped language boundaries that the Douglas Park area is indeed a transitional boundary between the Tharawal and Gundungara.

The records and histories of the Tharawal and their country at the time of contact with Europeans are subject to bias and are generally fragmented, providing nothing like a complete picture of the way Aboriginal people were living prior to European interference. Nevertheless, we know the Tharawal regularly communicated, moved, traded and participated in ceremonies between their country and neighbouring

areas. It is most likely family groups or clans would ‘intermingle and interact along both physical and social boundaries’ rather than be strictly confined to the ‘tribal’ borders that were to be artificially imposed by European anthropologists (Organ 1990: xlili).

The arrival of the First Fleet in Sydney Cove in 1788 was followed the next year by a smallpox epidemic, which spread to the neighbouring regions and, although the exact effects are not known, killed over half the Aboriginal population of the areas effected (Organ 1990: 5).

3.2.3 Cowpastures and the Contact Period

The first Europeans arrived in the Appin region in the last decade of the 18th century. They discovered a large herd of cattle that had developed from animals that had escaped from the early Sydney settlement. This led to the area becoming known as ‘Cowpastures’ (Dallas 2014). A government campaign was instituted to capture some of the cattle to supply beef to the colony, with a number of small camps and posts established around the area to protect the cattle from poachers. Governor King issued a proclamation in 1803 to prevent any non-government sanctioned access into the region (Dallas 2014).

In 1805 two European settlers, John Macarthur and Walter Davidson, were noted by the government surveyor camping out at the Cowpastures. These two settlers would go on to be the first landowners of the area (Betteridge 2012). This period was a time of drought, and the competition for resources between the Europeans and the Tharawal, who were adapting to the massive changes that were so quickly upon them, led to several years of conflict. Organ (1990) documents the various skirmishes, killings and reprisals between Europeans and the Tharawal during the 1814 – 1815 period in the Cowpastures districts. Eventually this sporadic bloodshed would lead to larger scale conflict, with Governor Macquarie implementing a sustained punitive action against the Aboriginal population in the district. This resulted in the Appin Massacre of 17 April 1816, in which Aboriginal people were shot and driven over the steep cliffs (near Broughtons Pass) to their death during a surprise attack by a detachment of the 46th Regiment, in the middle of the night.

By May of 1816, Governor Macquarie had changed tact and had established a campaign of ‘banishment’ that sought to remove Aboriginal people from around towns and farms, and to prohibit settlers from harbouring, concealing or providing food and provisions to Aboriginal people. This strategy proved a much more effective tool than military campaign (Karskens 2015).

3.2.4 The first grants and South Camden Estate

Walter Davidson, an early European settler in the area, named his land grant "Manangle". The Manangle property was later incorporated into the larger Macarthur Estate, as granted to John Macarthur in 1805 (Biosis 2018). The 10,000 acre land grant within the Cowpastures region included the Upper Camden and South Camden Estates (Plate 1) and was initially utilised to develop the Macarthur wool venture. ‘Camden Fine Wool’ was sold in England in the early 19th century, with Macarthur winning gold medals from the London Society of Arts for his wool in 1822 (Britannica 2020).

The Camden Estate continued to produce high quality wool throughout the mid-19th century, with John Macarthur’s son James creating the Australian Agricultural Company to facilitate the production of wool and produce in agreement with the British Government (Biosis 2018). The township of Menangle was created by the Macarthur family as a private village, and by the mid-19th century it had undergone significant growth with the development of a railway to the town.

In the 1850’s, the Macarthur family mortgaged their estate and sold off some of the smaller allotments (Gregson 1907). The rapid growth of the wool industry had slowed, and the Macarthur family began a move

into crop production. By the last years of the 19th century, the Macarthur family had formed the Camden Estate into a company, with the six Macarthur children as shareholders (Betteridge 2012). Some of the Estate was leased to tenant farmers during this time.

Flooding and drought in the 1870s put tenants and the company of the Macarthur owned Camden Estate under financial stress, and from 1876, many tenants were given notice to quit. In 1881 William Macarthur entered into a private contract with a syndicate of four purchasers to sell 5100 acres including the flourishing north-west corner of the estate, Cobbitty Paddock and Cawdor, that consisted entirely of tenanted farms, together with all of the unsold allotments in the township of Camden.

Numerous tenants were affected by the selling of land to the syndicate. The names of the tenants are shown on a plan prepared for the first of the syndicate's sales in March 1882. The new lot arrangement of the tenants lands was intended to provide both large and small farms not only for local residents, but also for farmers from all parts of the colony as well as potential homestead lots for gentlemen from Sydney (some early hobby farmers). The first sale took place in March 1882 and again in 1887. Following the agreed sale to the syndicate, the Camden estate was reduced to 19,993 acres of which 14,030 acres were again tenanted. An annotation on the 1887 Parish Map within the Subject Area reads "Reeds Corner" (Plate 1). While no historical detail was found to identify "Reed", it is possible that it is in reference to this period of tenant farmer or subsequent purchaser.

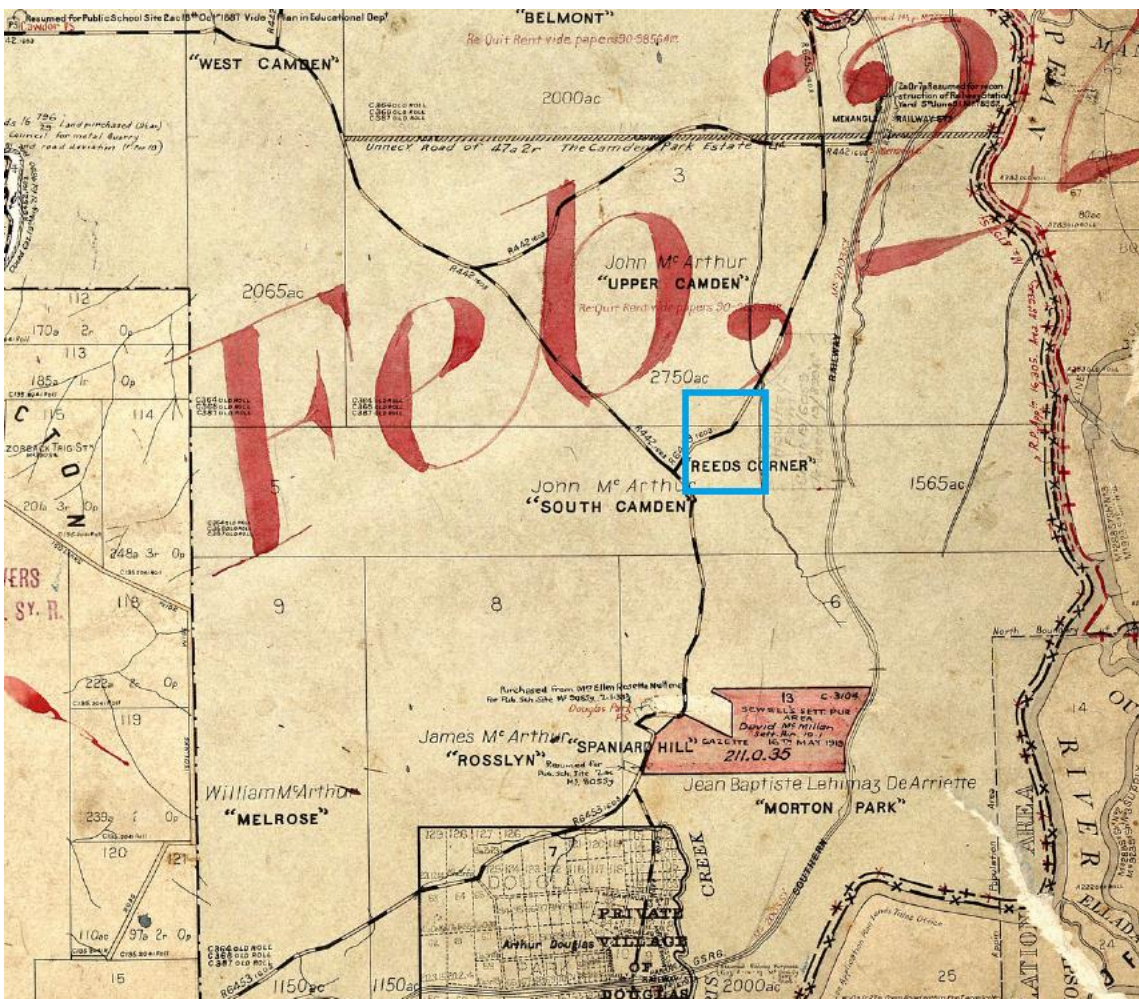


Plate 1: 1887 Parish Map of Menangle showing the Camden Estate. The general location of the Subject Area is indicated in blue (Source: Department of Land Registry Services).

3.2.5 20th Century Farming

By the late 19th century, the land around the Menangle village had undergone significant change, with the focus of the Camden Estate changed to dairy farming and production. The surrounding region was part of the evolution, with twelve cooperative farms and forty leased farms supplying milk to the Camden Park Estate Central Creamery (Biosis 2018). It is likely that the Subject Area, as part of the greater Camden Estate, would have been utilised for cattle grazing during this time.

By the early 20th century, the remaining estate had been cleared to provide additional grazing, cooperative dairy farms had been established including those at Camden and Menangle. Pig farming and bacon curing were in operation and orchard and flower cultivation were in full production.

A surveyors plan from 1932 (Plate 2) shows the Subject Area as sold to 'J. Finn'. No historical information was identified about this sale or the subsequent use of the Subject Area. As with the surrounding region, it is likely that the Subject Area continued to be used for cattle farming throughout much of the 20th century. The Camden Estate Central Creamery remained in operation until the 1970s, with much of the surrounding region continuing to operate as cooperative farms throughout this time.

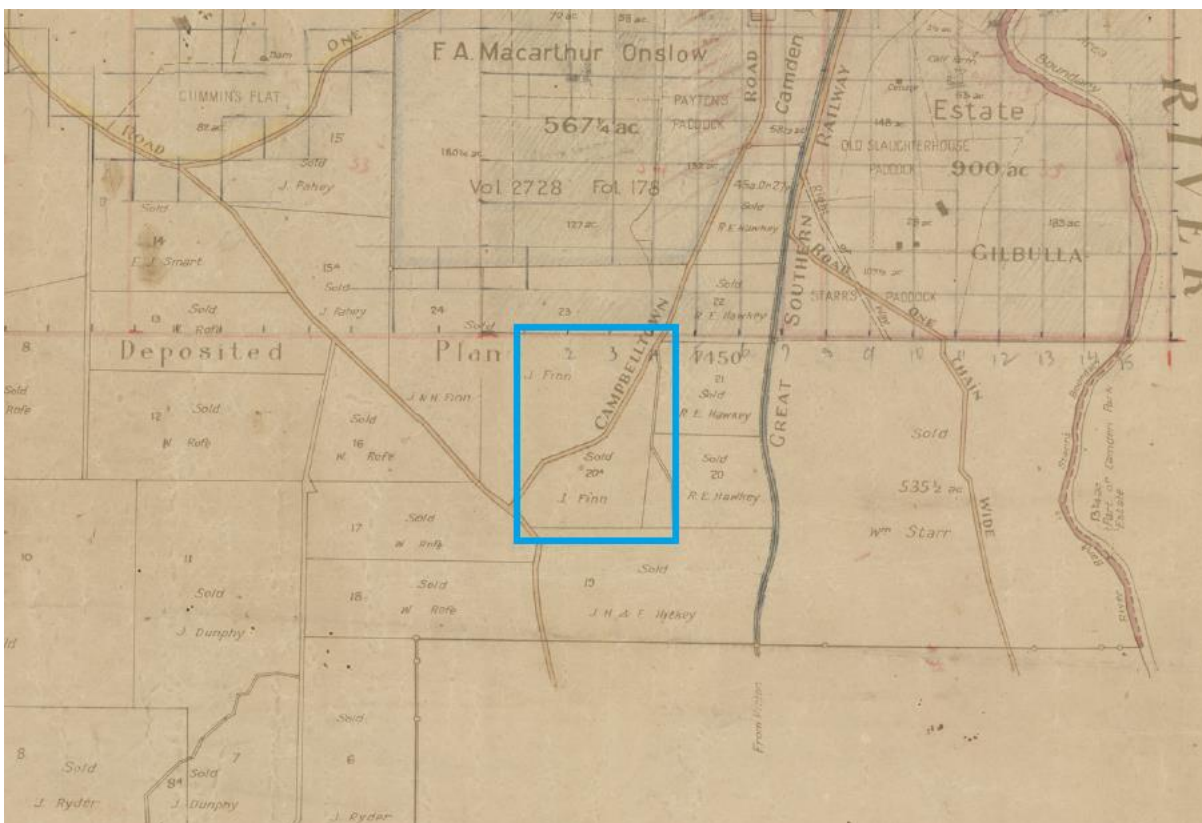


Plate 2: 1932 Surveyors Map, with the Subject Area indicated in blue (Source: Trove).

Historical aerials (Figure 4) from 1961 and 1975 indicate that little to no development occurred within the Subject Area for the latter half of the 20th century. The Physical Analysis of the Subject Area indicates that it likely continued to support cattle through the 20th century, until the initial period of assessment in 2020.

4. Physical Analysis

4.1 Site Inspection

4.1.1 Methodology

The site inspection was carried out on 7 December 2020, in conjunction with an Aboriginal cultural heritage survey of the Subject Area, by Sarah McGuinness (Senior Historical Heritage Consultant). The Subject Area was again inspected throughout a period of Aboriginal cultural heritage test excavation from 1 to 12 February 2021, following slashing of the pastoral grasses. The entire Subject Area was covered in a systematic meander and any areas of potential or disturbance were closely inspected and recorded.

4.1.2 Physical Description of Subject Area

The Subject Area is within a rural farm setting and has been subject to little development. A modern residential house is located at 345 Menangle Road (Plate 3 and Plate 10), within a small, fenced block. A modern corrugated shed is situated near one of the two dams within the Subject Area (Plate 3, Plate 9 and Plate 11). The south-eastern corner of the site has an accumulation of rubbish, stored timber and farm plant (Plate 3 and Plate 8). A series of informal farming tracks dissect the area (Plate 3 and Plate 6).

The Subject Area has been largely cleared of native vegetation, with a residual pocket of Cumberland Plain Woodland in the south-west along the ridgeline. The vegetation along Foot Onslow Creek consists of introduced or invasive species. The fields have thick growth of high, pastoral grasses that hamper visibility. Following slashing of the grass in February 2021, the Subject Area was inspected again, but ground visibility was still generally limited to areas of exposure and farm tracks.

The Subject Area has been utilised for cattle grazing until early 2021. Evidence of cattle movement across the landscape was noted in the erosion and bioturbation of the bank of Foot Onslow Creek and dams.



Plate 3: Modern residential building at 345 Menangle Road indicated in red, corrugated farm shed indicated in blue and area of rubbish dumping indicated in green (Source: Niche and LPI).



Plate 4: The Subject Area facing south.



Plate 5: The Subject Area facing north, photo taken from ridge at southern end.



Plate 6: The Subject Area facing south-west, with dirt track.



Plate 7: The northern part of the Subject Area, facing north-west. Foot Onslow Creek in background.



Plate 8: Location of modern rubbish dumping at southern end of Subject Area, facing south. Foot Onslow Creek to left of frame.



Plate 9: Large farm dam in centre of Subject Area, facing south-east.



Plate 10: Residential house located at 345 Menangle Road, facing east.



Plate 11: Modern farm shed near dam (Source: IMC).

4.2 Historical Aerial imagery

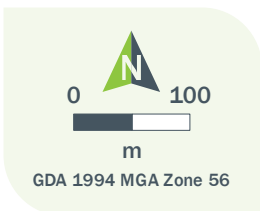
An analysis of historical aerial images from 1961 and 1975 (Figure 4) shows that the Subject Area has undergone very limited development and has retained its rural setting during this time.

The aerial from 1961 depicts the Subject Area and Foot Onslow Creek largely cleared of vegetation. The large dam has already been constructed at this time, and there is a small structure in the location of the modern shed. There is no indication of any additional development or use of the site beyond small scale farming.

The 1975 aerial is largely unchanged from the earlier depiction, with the exception of the residential block at 345 Menangle Road. The aerial does not clearly show if the house existed at this time, but a division of the block from the surrounding field and some localised vegetation growth within the immediate area indicates that it may have been occupied.



Drawn by: YH File: T:\spatial\projects\ae100\ae152_Appin_Mine_Access_ACHA\Mapareport\ACHA\6152_Figure_6_HisAP.mxd Last updated: 4/14/2021 4:36:47 PM



Historical aerial photographs
Appin Mine Access and Ventilation Project HHA

Niche PM: Sarah McGuinness
 Niche Proj. #: 6152
 Client: South32

Figure 4

4.3 Past Impacts to the Subject Area

Analysis of the physical description of the Subject Area, combined with historical aerials identified the following past impacts within the Subject Area:

- Widespread vegetation clearance.
- Likely erosion through exposed topsoils.
- Bioturbation through cattle movement.
- Construction of dams.
- Construction of small structure and modern shed near dam.
- Construction of modern residential building.
- Vehicle movement across the site and use of informal farm tracks.

4.4 Overview of Cultural Landscapes

The heritage value of a Subject Area does not exist solely with tangible items and material traces. An assessment of a cultural landscape integrates natural and cultural traces of historical phases or events and examples the connectivity between people, places and heritage items (DECC 2008).

An understanding of the historical character of the landscape in which a Subject Area is situated is a contributing factor to the heritage significance of a site. A cultural landscape can be of value through aesthetic, archaeological, historical, scientific, social or architectural values.

The framework for the assessment of cultural landscapes in NSW includes:

- Recording histories and larger patterns of land use.
- Documenting the histories of communities that have historical and contemporary connections with cultural landscapes.
- Emphasising the spatial aspects of cultural landscapes including spatial patterns and connectivity that can be mapped (DECC 2008).

4.4.1 The Cultural Landscape of the Subject Area

The Subject Area is an example of an evolved and continuing rural farming cultural landscape. The evolution of the Subject Area through vegetation clearance, lot division, the construction of farming infrastructure, grazing and continued maintenance of internal and external boundaries are all contributory factors to the cultural landscape.

As noted during the site inspection, the Subject Area has likely remained predominantly unchanged since its initial clearance and use as pasture and grazing. The boundary of the Subject Area is defined by Foot Onslow Creek and Menangle Road to the east, north and west, and a fenced lot boundary to the south (Figure 2). This boundary of major historical roads and natural landscape features is unlikely to differ greatly from historical farming boundaries, particularly as it relates to Phases 3 and 4, as identified in Section 3.

The limited modern development of and immediately surrounding the Subject Area means that it has retained its rural and agricultural character. As such, when contextualised with historical research, the physical traces of history and the intangible narrative contribute to the overall cultural landscape.

The physical traces of the cultural landscape of the Subject Area can be summarised as:

- Cleared land devoid of natural vegetation.
- Large pastures for grazing.
- Natural landscape division through Foot Onslow Creek.
- Created landscape division through Menangle Road and Finns Road.
- Internal and external boundaries and fencing.
- Farming infrastructure including dams, informal farming tracks and sheds.
- Rural views and vistas.

4.5 Consideration of Views and Vistas of the Subject Area

A consideration of the views and vistas to and from a cultural landscape is important for understanding the nature of an evolving landscape. The significant views of the Subject Area are shown below.

The views and vistas of the Subject Area are of a typical rural landscape that has been subject to widespread vegetation clearance and farming. The view corridors to and from the Subject Area have the same character of rolling hills and creek flats with fenced pasture, dams and informal farm tracks (Plate 12 and Plate 13).



Plate 12: Views north across the Subject Area, taken at the southern boundary.



Plate 13: Views west from the Subject Area, with rural landscape continuing beyond Subject Area boundary

4.6 Summary of Physical Evidence

An analysis of the modern Subject Area in combination with historic aerials reveals the following conclusions:

- The ground surface visibility is limited.
- There has been limited development within the Subject Area both historically and recently.
- The Subject Area retains the rural cultural landscape of the surrounding region.
- There is localised high disturbance across the Subject Area.

5. Assessment of Archaeological Potential

This section provides an assessment of the archaeological profile of the Subject Area. This assessment is based on the evidence derived from the archival analysis (Historical Context) and physical analysis. This profile contributes to the assessment of cultural significance of the Subject Area.

Archaeological potential is defined as the likelihood that an area may contain physical evidence related to earlier phases of occupation, activity and/or development. Physical evidence can encompass structural remains and footings, occupational deposits, artefacts and/or features. These archaeological remains have the potential to contribute to our knowledge and understanding of the development of this area and the region and its association with the community using information otherwise unavailable. The potential for preserved archaeological evidence can range from very low to high (Table 1).

Table 1: Grading of archaeological potential.

| Grade | Definition |
|----------|--|
| Very Low | The degree of ground disturbance suggests minimal or no potential for any archaeological evidence to survive. |
| Low | It is unlikely that any archaeological evidence survives. |
| Moderate | Some archaeological evidence associated with a particular historical phase or feature survives. It may be subject to some disturbance. |
| High | It is likely that archaeological evidence associated with this historical phase or feature survives intact. |

5.1 Analysis of potential archaeological evidence for the Historical Phases

Table 2 below presents an analysis of the archaeological potential of the identified historical phases, using the historical assessment and the known integrity of the Subject Area.

Table 2: Archaeological potential of Historic phases.

| Historical Phase | Analysis of Archaeological Potential Associated with Historical Phase |
|---|--|
| Phase 1: Pre-European Aboriginal Landscape | N/A – note that the assessment of Aboriginal Archaeological potential is beyond the scope of this report. Refer to Niche 2021 for an assessment of Aboriginal cultural heritage. |
| Phase 2: The Aboriginal-European Contact Landscape | <p>The Cowpastures region is known to contain archaeological contact sites, including the site of the Appin Massacre (approximately 6.5 km to the south east of the Subject Area) and flaked glass sites at Douglas Park (3.5 km south of the Subject Area) and at Appin (7 km south east of the Subject Area).</p> <p>Due to known disturbances across the site and the ephemeral nature of likely evidence, the Subject Area is unlikely to contain evidence from this phase. The most likely archaeological evidence of this phase would be glass artefacts, however test excavations in the area identified a limited potential for in situ archaeological objects and features (Niche 2021).</p> <p>The potential for an archaeological profile from this phase is very low.</p> |
| Phase 3: The South Camden Estate | <p>The Subject Area lies within the greater South Camden Estate and would have been primarily utilised for cattle grazing for most of its rural timespan.</p> <p>There is no evidence of any development within the Subject Area associated with this historical phase. The most likely archaeological evidence would consist</p> |

| Historical Phase | Analysis of Archaeological Potential Associated with Historical Phase |
|--|---|
| | <p>of postholes associated with boundary fencing or unrecorded ancillary farm buildings.</p> <p>The potential for an archaeological profile from this phase is very low.</p> |
| <p>Phase 4: 20th Century Farming</p> | <p>The rural and agricultural focus of the Subject Area has remained largely unchanged to the current day. The greater Camden Estate was held by descendants of John Macarthur until the 1970's, when it was divided and sold into smaller farms.</p> <p>Evidence of 20th Century farming within the Subject Area would likely consist of modern farming implements and tools, modern fencing and modern ancillary farm structures.</p> <p>The potential for an archaeological profile from this phase is very low.</p> |

5.2 Integrity of Archaeological Evidence

An archaeology study by AHMS (2005: 23) outlines some of factors that contribute to the survival of archaeological deposits that relate to buildings or constructed relics which, when compared to the Subject Area, may highlight the types of archaeological deposits that have the potential to occur there. It is stated in that report that:

The extent to which archaeological relics... have survived depends on the nature of the deposits and modifications made to the site following construction or deposition of the relics. Deep structures, such as main structural footings, cellars, wells, cesspits and the artefacts they normally contain, have greater potential to 'survive' than features located on former ground surfaces (ie. to remain in the place and the state that they were in at the time of their deposition). Survival of 'soft' deposits may result in the accumulation of large numbers of artefacts. These types of deposits are likely to survive in wells and cesspits in the rear yards of both allotments while additional 'soft' deposits, such as yard surfaces, underfloor deposits and surface dumps may survive within and adjacent to former building footprints.

As noted in Sections 3 and 4 and Table 2, the Subject Area is unlikely to contain archaeological deposits associated with the identified historical phases. There is a very low potential for archaeological evidence of structures and 'hard' features, as this historical analysis indicates that no such features were constructed in the area. There is a very low potential for 'soft' archaeological features due to the likelihood of such accumulations, or their preservation in the landscape.

5.3 Summary of Archaeological Profile

This assessment has found that there is a very low potential for in situ archaeological resources associated with the Aboriginal and European contact landscape, the South Camden Estate and the 20th Century farming phase in the Subject Area.

6. Assessment of Cultural Significance

6.1 Methodology for Assessing Significance

The NSW Heritage Office Manual guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) provides the framework for the following significance assessment and Statement of Significance. These guidelines incorporate the seven aspects of cultural heritage value identified in The Burra Charter into a framework currently accepted by the NSW Heritage Council.

6.1.1 Criteria for Assessing Significance

The SHR criteria are outlined in *Assessing Heritage Significance* (Heritage Office 2001) and are summarised in Table 3. Using these criteria, a place can be assessed to be of local, state or no heritage significance.

Table 3: Heritage Assessment Criteria.

| Criteria | Value | Description |
|---------------------|--------------------------|---|
| Criterion A) | Historical Significance | An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area). |
| Criterion B) | Associative significance | An item has strong or special association with the life or works of a person or group of persons, of important in NSW's cultural or natural history (or the cultural or natural history of the local area). |
| Criterion C) | Aesthetic significance | An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area). |
| Criterion D) | Social significance | An item has strong or special association with a particular community or cultural group in NSW (or the local area). for social, cultural or spiritual reasons. |
| Criterion E) | Research potential | An item has the potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area) |
| Criterion F) | Rarity | An item possesses uncommon, rare or endangered aspects of the area's cultural or natural history (or the cultural or natural history of the local area). |
| Criterion G) | Representativeness | An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places, or cultural or natural environments (or a class of the local area's cultural or natural places, or cultural or natural environments.) |

6.1.2 Grading of significance

A five-tier system detailing levels of significance is outlined in *Assessing Heritage Significance* (Heritage Office 2000). The grading system is used to identify the overall significance of items or sites being assessed. The levels of significance and their justification to be applied to items is listed in Table 4 below.

Table 4: Grading of significance.

| Grading | Justification | Status |
|--------------------|--|---|
| Exceptional | Rare or outstanding element directly contributing to an item's local or State listing. | Fulfils criteria for local and/or State significance. |
| High | High degree of original fabric. Demonstrates a key element of the item's significance. Alterations do not detract from significance. | Fulfils criteria for local and/or State significance. |
| Moderate | Altered or modified elements. Elements with little heritage value, but which contribute to the overall significance of the item. | Fulfils criteria for local and/or State significance. |
| Little | Alterations detract from significance. Difficult to interpret. | Does not fulfil criteria for local or State listing. |
| Damaging | Damaging to the item's heritage significance. | Does not fulfil criteria for local or State listing. |

6.2 Assessment of Significance for the Subject Area

6.2.1 Comparative Analysis- Dairy No 4 (SHI #184)

Table 5 below presents a comparative analysis of Dairy No 4 (SHI # 184), situated approximately 3 km north of the Subject Area. Dairy No 4 was associated with the greater Camden Estate and is a local example of the evolution of small farms from the mid-19th century through to the mid-20th century.

Table 5: Comparative Analysis.

| Item | Region | Level of Significance | Date | Description (Source: NSW Heritage Directory) |
|---|-------------|-----------------------|-----------|---|
| Cottage, feed sheds and soils (Dairy No 4) Database #3040025 | Wollondilly | Local | 1860-1890 | Farmhouse with additions, slab shed and mature trees. |

History of Dairy No 4

The listing sheet outlines the history and physical description of the heritage item:

The cottage was built in the later 19th century.

The group of buildings consist of an estate cottage, feed sheds and silos. The cottage is a single storey dwelling with a galvanised iron roof and weatherboard walls with asbestos cement additions and infill.

Dairy- is of brick with galvanised iron roof, internal has been modified to incorporate a set of cattle yards for under-cover research work.

Feed Stalls- are of timber and galvanised iron roof, some internal structure remains. Silos, are twin concrete towers (SHI Database # 3040025).

Dairy No 4 Statement of Significance

The Statement of Significance for Dairy No 4 is as follows:

The group of buildings at Dairy No 4 illustrate the changing nature of dairying activities and the importance of milk production on the Estate in the late 19th and early 20th centuries. A landmark feature of aesthetic value (SHI Database # 3040025).

6.2.2 Results of Comparative Analysis

In comparison to Dairy No 4, the Subject Area while a good example of a rural cultural landscape and a dairy farming landscape associated with the greater Camden Estate, does not hold the level of significance or archaeological potential as other, more developed early farms in the area.

There is no historical evidence that the Subject Area will contain evidence of occupation such as at the Dairy No 4 cottage, evidence of farming infrastructure such as feed sheds or silos, or archaeological resources that would contribute to the potential significance of the site.

6.3 Statement of Cultural Significance

As there were no listed heritage items nor undiscovered heritage items, no items associated within the Subject Area were assessed using the criteria outlined in *Assessing Heritage Significance* (Heritage Office 2000).

On the basis of this assessment, the Subject Area does not meet the criteria for local or state heritage significance.

7. Conclusions and Recommendations

7.1 Conclusions

The Subject Area has been found to be part of the regional cultural landscape associated with early 19th Century settlement and the development of large rural estates such as South Camden.

An analysis of historical resources has found that the Subject Area has remained largely unchanged from first European settlement and farming of the area. Little to no development has occurred within the Subject Area associated with the identified historical phases.

The Subject Area has been assessed to contain no heritage items and have a very low to low potential to contain archaeological resources associated with the identified historical phases.

7.2 Recommendations

On the basis of this assessment, the following recommendation has been formulated:

1. It is recommended that an Unexpected Finds Protocol (Appendix 1) is followed in the unlikely event that archaeological deposits are discovered.

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Appendix 1

Unexpected Finds Procedure

Introduction

The following provides a methodology to follow in the event of unexpected finds being encountered during the proposed works. These procedures have been prepared in accordance with best practice and are designed to minimise the heritage impact in the unlikely event that Human remains, or archaeological material is encountered on site.

It is noted that these procedures do not provide a guarantee against impacts caused by unexpected finds. However, they provide mitigation of the risk unexpected finds present. The procedure used in the event of human remains is derived from the NSW government guidelines and in no way supplants the authority of the NSW Police or the NSW Coroner's office over human remains found on site.

It is critical for the construction team to be aware that any suspected archaeological evidence must remain as it was found (*in situ*) until it is assessed by a qualified archaeologist, as per the below steps. These objects, and where they are located and the material around them (referred to as the object's 'context') is critical for understanding their value to the site and determining what may be located near to the area of the find. The object and its context are legally protected under the *Heritage Act 1977*.

Discovery of Suspected Human Remains

The following procedure would be followed in the event of the unexpected find of suspected human remains during the works:

- The location, including a 20 m curtilage, should be secured using barrier fencing to avoid further harm.
- The remains must be left in place and protected from harm or damage.
- The NSW Police and Coroners Office must be contacted immediately.
- No further action is to be undertaken until the NSW Police confirm the origin of the remains as non-human and provide a case number for South32's records.
- If the skeletal remains are identified as Aboriginal, South 32 or their agent must contact:
 - the Heritage NSW's Enviroline on 131 555.
- If the skeletal remains are identified as Aboriginal, no works are to continue until the Heritage NSW provides written notification to the Proponent or their Agent.

Discovery of Unexpected Suspected Archaeological Material.

The following procedure would be followed in the event of the unexpected find of suspected archaeological material during the works.

- Stop work within a 10m area around the unexpected find and secure this area.
- Notify a qualified archaeologist and engage them to assess the suspected material to determine historical significance of the find.
- If assessed to be not culturally significant, proceed with works with caution.
- If assessed to be of cultural value, works must cease in this portion of the site (within 50m of the find) and the NSW Heritage Council and Local Government Council must be contacted. Any

directions or responses from these organisations should be considered. Works of this type could include salvage excavation, testing, further monitoring and archival recording.

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Heritage management

Aboriginal heritage
Historical heritage
Conservation management
Community consultation
Archaeological, built and landscape values

Environmental management and approvals

Impact assessments
Development and activity approvals
Rehabilitation
Stakeholder consultation and facilitation
Project management

Environmental offsetting

Offset strategy and assessment (NSW, QLD, Commonwealth)
Accredited BAM assessors (NSW)
Biodiversity Stewardship Site Agreements (NSW)
Offset site establishment and management
Offset brokerage
Advanced Offset establishment (QLD)