

APPENDIX 15

Historic Heritage Assessment





MANGOOLA
OPEN CUT
—
GLENORE

**MANGOOLA COAL
CONTINUED OPERATIONS
PROJECT**

Historical Heritage Assessment

FINAL

April 2019



MANGOOLA COAL CONTINUED OPERATIONS PROJECT

Historical Heritage Assessment

FINAL

Prepared by
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on behalf of
Mangoola Coal Operations Pty Ltd

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1.0 Introduction

Mangoola Coal Operations Pty Limited (Mangoola) engaged Umwelt (Australia) Pty Limited (Umwelt) to complete a Historic Heritage Assessment (HHA) for the Mangoola Coal Continued Operations Project (MCCO Project). The purpose of the assessment was to identify and assess any impacts of the MCCO Project on historic heritage values. The HHA will form part of an Environmental Impact Statement (EIS) being prepared to accompany an application for development consent under Division 4.1 and 4.7 of Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for the MCCO Project.

1.1 Project Overview

Mangoola Coal Mine is an open cut coal mine located approximately 20 kilometres (km) west of Muswellbrook and 10 km north of Denman in the Upper Hunter Valley of NSW (refer **Figure 1.1**). Mangoola has operated the Mangoola Coal Mine under Project Approval (PA) 06_0014 since mining commenced at the site in September 2010.

The MCCO Project will allow for the continuation of mining at Mangoola Coal Mine into a new mining area to the immediate north of the existing operations. The MCCO Project will extend the life of the existing operation providing for ongoing employment opportunities for the existing Mangoola workforce. The MCCO Project Area includes the existing Approved Project Area for Mangoola Coal Mine and the MCCO Additional Project Area as shown on **Figure 1.1**.

The MCCO Project generally comprises:

- open cut mining peaking at up to the same rate as that currently approved (13.5 Million tonnes per annum (Mtpa) of run of mine (ROM) coal) using truck and excavator mining methods
- mining operations in a new mining area located north of the existing Mangoola Coal Mine and Wybong Road, south of Ridgeland Road and east of the 500 kilovolt (kV) Electricity Transmission Line (ETL)
- continued operations within the existing Mangoola Coal Mine
- construction of a haul road overpass over Big Flat Creek and Wybong Road to provide access from the existing mine to the proposed Additional Mining Area
- establishment of an out-of-pit overburden emplacement area
- distribution of overburden between the proposed Additional Mining Area and the existing mine in order to optimise the final landform design of the integrated operation
- realignment of a portion of Wybong Post Office Road
- the use of all existing or approved infrastructure and equipment for the Mangoola Coal Mine with some minor additions to the existing mobile equipment fleet
- construction of a water management system to manage sediment laden water runoff, divert clean water catchment, provide flood protection from Big Flat Creek and provide for reticulation of mine water. The water management system will be connected to that of the existing operations
- continued ability to discharge excess water in accordance with the Hunter River Salinity Trading Scheme (HRSTS)

- establishment of a final landform in line with current design standards at Mangoola Coal Mine including use of natural landform design principles consistent with the existing site
- rehabilitation of the proposed Additional Mining Area using the same revegetation techniques as at the existing mine
- a likely construction workforce of approximately 145 persons. No change to the existing approved operational workforce
- continued use of the existing mine access for operations. Access to/from Wybong Road, Wybong Post Office Road and Ridglands Road to the MCCO Project Area for construction, emergency services, ongoing operational environmental monitoring and property maintenance.

Figure 1.2 illustrates the key features of the MCCO Project.

1.2 The Study Area

The study area assessed in this HHA comprises:

- **The MCCO Additional Project Area** which encompasses the MCCO Proposed Disturbance Area listed below, as well as some surrounding land owned by Mangoola (refer to **Figure 1.2**)
- **The MCCO Proposed Disturbance Area** within the wider MCCO Additional Project Area, including the MCCO Proposed Additional Mining Area (i.e. the 'pit shell'), proposed emplacement and stockpile areas, proposed road realignments and other MCCO Project works (refer to **Figure 1.2**)
- **The wider study area**, being a nominal three kilometre buffer radius that extends outward from the perimeter of the MCCO Proposed Additional Mining Area. This buffer allows for appropriate assessment of potential impacts associated with blasting and vibration. The wider study area is shown in **Figure 1.3**.

It is noted that this HHA does not include consideration of the area assessed in the 2006 *Historical Heritage Assessment – Anvil Hill Project* prepared by Umwelt. The 'Project Area' used in the 2006 Umwelt assessment, as shown in Figure 3.2 of that report, has already been comprehensively assessed with regards to historical heritage.

Further, the impacts of the existing Mangoola Coal Mine are approved and a management strategy for the historical heritage items identified within the 2006 assessment area has already been developed and approved under PA06_0014. In addition to this, the *Conservation Management Strategy* for the Mangoola Open Cut Mine has recently been updated (November 2018) to reflect the status of all heritage items within the previously assessed 'Project Area'. The content of this Strategy, which has been prepared to reflect all obtained approvals to date, has been referenced in the preparation of this report, and is discussed in greater detail in **Section 5.2**. The Strategy was approved by the Department of Planning and Environment in November 2018.

The study area, including the areas outlined above is shown in **Figure 1.3**.

1.3 Historical Heritage Assessment

The MCCO Project is a State Significant Development (SSD) as discussed further in **Section 2.0**. The SEARs for the MCCO Project were issued by the NSW Department of Planning and Environment (DPE) on 15 February 2019 (replacing a previous version of the SEARs issued on 22 August 2017) and identify the

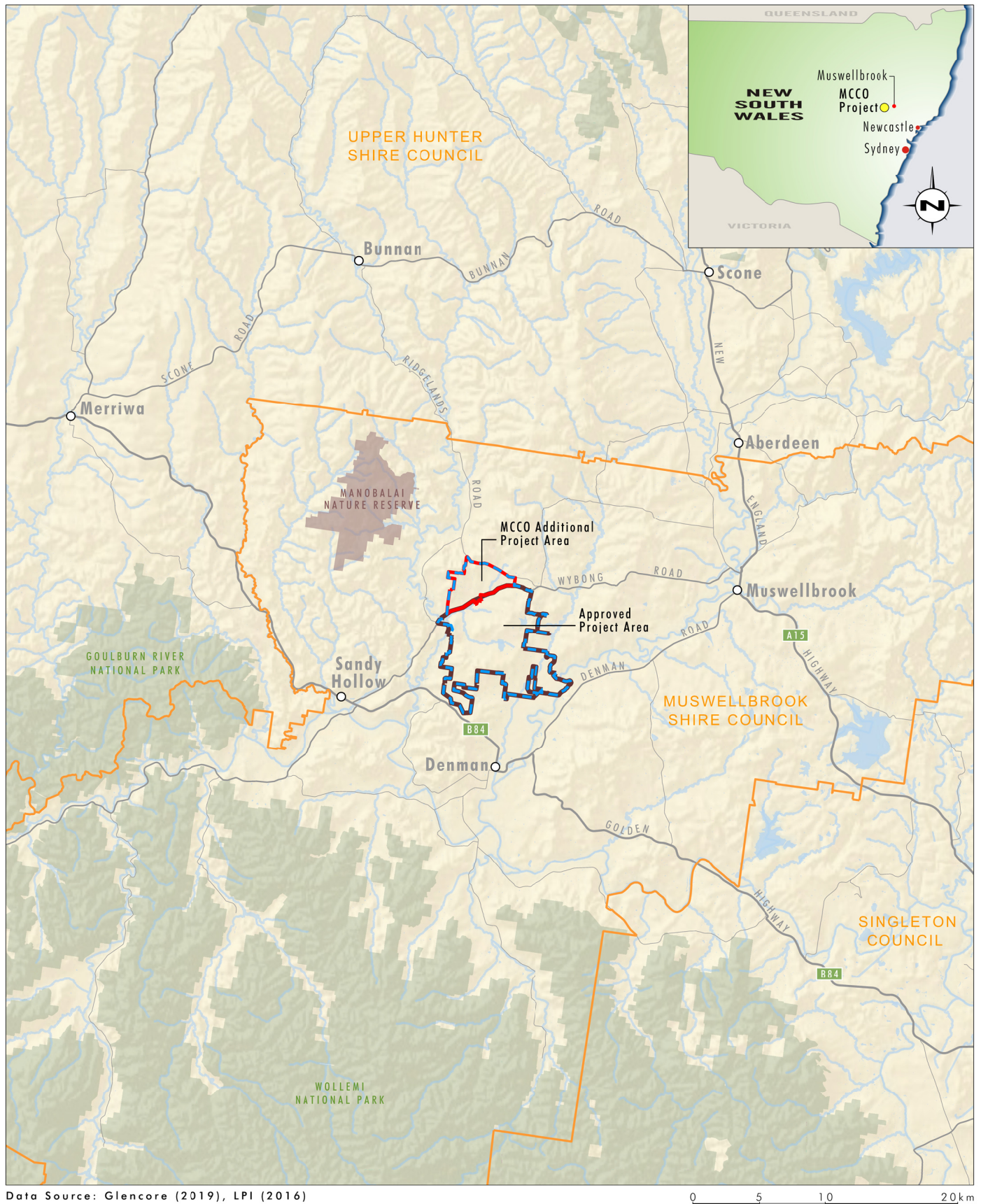
specific requirements to be addressed by the EIS for the project. The SEAR relating to historical heritage requires:

'... identification of historic heritage in the vicinity of the development and an assessment of the likelihood and significance of impacts on heritage items, having regard to the relevant policies and guidelines listed in Attachment 1.'

It is also noted that input on the above SEAR was received from the Office of Environment and Heritage (OEH) with regards to historical heritage on 18 August 2017. OEH provided the following input:

The EIS must provide a heritage assessment including but not limited to an assessment of impacts to State and local heritage including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall:

- a) outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996),*
- b) be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria),*
- c) include a statement of heritage impact for all heritage items (including significance assessment),*
- d) consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and*
- e) where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations.*



Legend

- MCO Project Area
- Approved Project Area
- MCO Additional Project Area
- Local Government Area

FIGURE 1.1

Regional Locality Plan

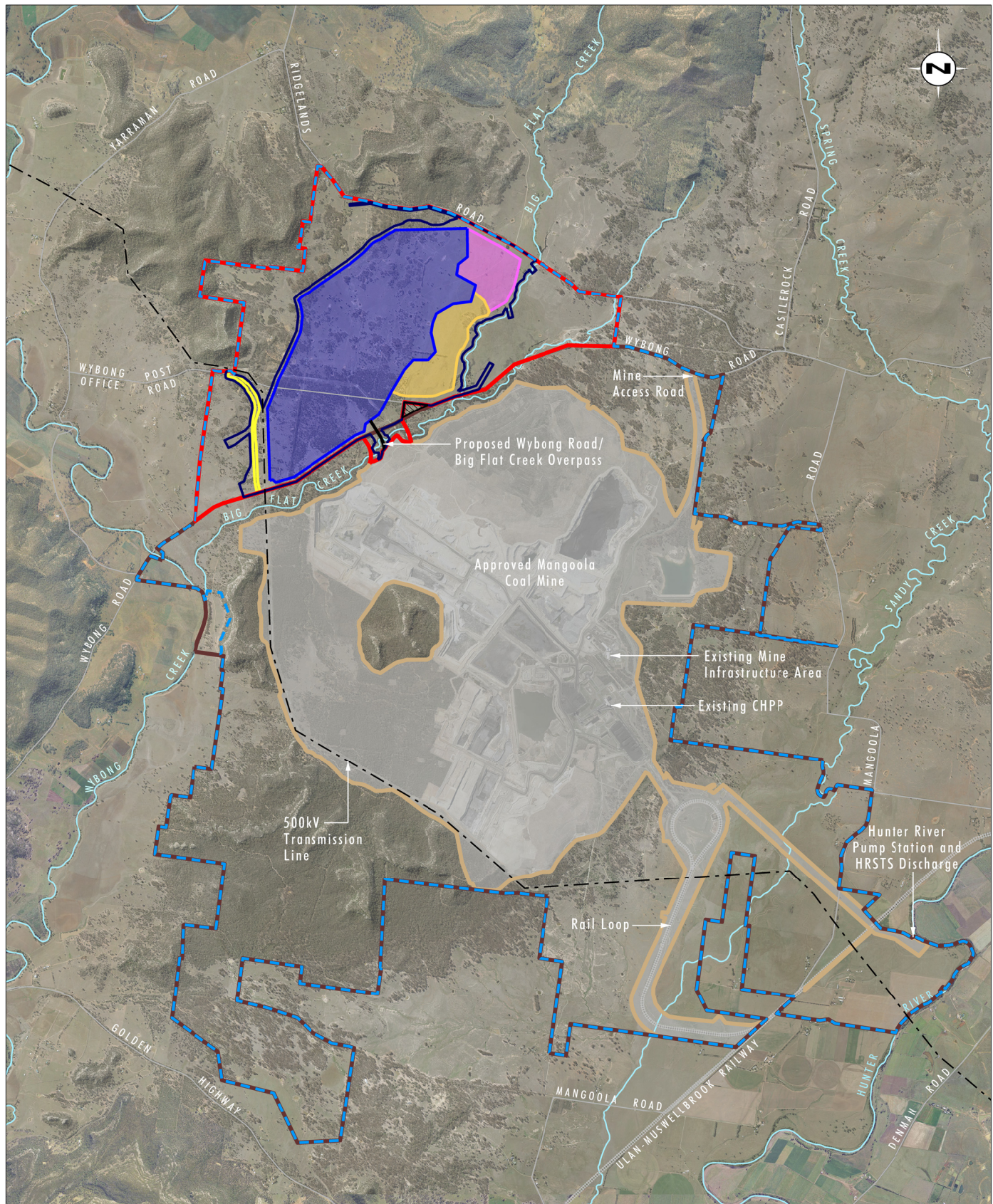


Image Source: Glencore (April 2018)
Data Source: Glencore (2019)

Legend

- MCCO Project Area
- Approved Project Area
- Approved Mangoola Coal Mine Disturbance Area
- MCCO Additional Project Area
- MCCO Additional Disturbance Area
- Proposed Additional Mining Area
- Proposed Employment Area
- Proposed Topsoil Stockpile Area
- Wybong Post Office Road Realignment
- Crown Land (TSR) Excluded from MCCO Project Area

FIGURE 1.2

Conceptual Project Layout

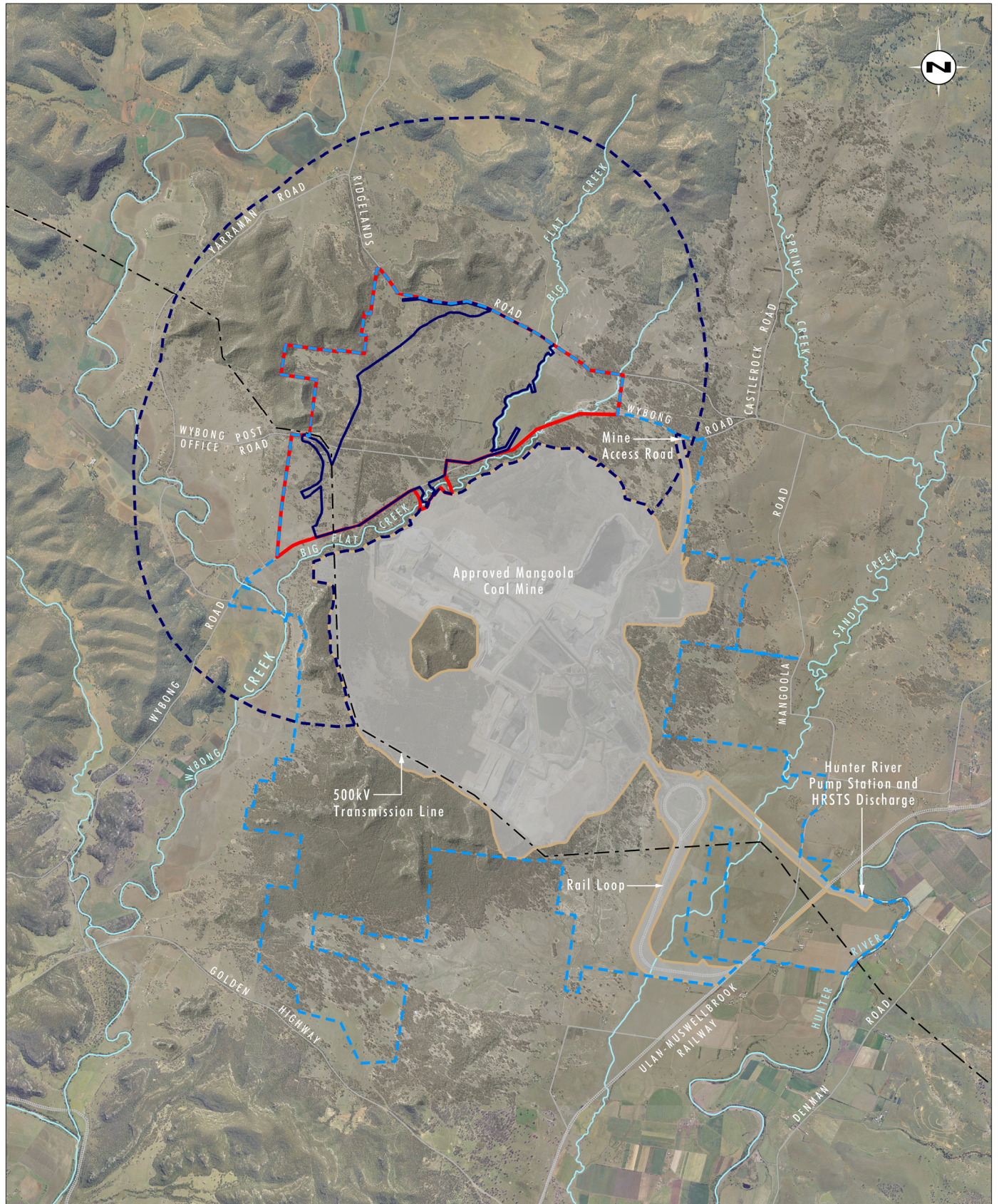


Image Source: Glencore (April 2018)
Data Source: Glencore (2019)

0 1.0 2.0 4.0 km

Legend

- MCO Project Area
- Approved Mangoola Coal Mine Disturbance Area
- MCO Additional Project Area
- MCO Additional Disturbance Area
- Historic Heritage Study Area

FIGURE 1.3
The Study Area

The purpose of this HHA is therefore to:

- Satisfy the assessment requirements of the SEARs
- Identify and tabulate listed heritage items located within or in proximity to the MCCO Additional Project Area:
 - For the purposes of this HHA, 'in proximity to the MCCO Additional Project Area' is defined by the wider study area, which allows for an assessment of physical impacts as well as of potential blast impacts.
- Identify and assess items, buildings, structures or other elements of potential historical heritage significance (i.e. those which are not listed) located within or in proximity to the MCCO Additional Project Area
- Identify and assess the likelihood, extent and nature of potential impacts to any listed or unlisted items of heritage significance located within or in proximity to the MCCO Additional Project Area
- Develop appropriate measures to avoid, manage and/or mitigate any identified impacts.

The policies and guidelines referenced in the SEAR are outlined in **Section 2.1**.

1.3.1 Study Team

This report was prepared by Karyn Virgin (Senior Heritage Consultant) and reviewed by Tim Adams (Principal Archaeologist – Historical Heritage), both of Umwelt. The site inspections and landholder interviews were carried out by Karyn Virgin and Alison Lamond (Senior Archaeologist, Umwelt).

Due to the proximity and overlapping historical contexts of the study area assessed in the *Historical Heritage Assessment – Anvil Hill Project* prepared by Umwelt in 2006 for Centennial Hunter Pty Ltd, relevant information from this previous report has been used in the preparation of this HHA. The 2006 report assessed the historical (non-Aboriginal) heritage of the (now) approved and operational Mangoola Coal Mine, and is therefore directly relevant to the current MCCO Additional Project Area.

1.3.2 Acknowledgements

The authors of this report would like to acknowledge the following individuals/organisations for their assistance with the preparation of this HHA:

- The local residents and families of the Wybong area
- The Muswellbrook Shire Local Family and History Society (MSLfaHS).

1.3.3 Limitations

This HHA has been prepared to assess the historical (non-Aboriginal) heritage of the study area only, and does not consider or assess Aboriginal cultural heritage or archaeology. Aboriginal cultural heritage and archaeology are being separately assessed for the MCCO Project

As discussed at **Section 3.2** one of the properties identified for further assessment and visual inspection was not able to be accessed during the visual survey; access to 'Castle Hill', located at Lot 9 DP 750968, was

not granted to allow its visual inspection to provide further information for this HHA. 'Castle Hill' is located approximately 1.8 kilometres to the south west of the MCCO Additional Project Area.

1.3.4 Report Structure

The structure of this report is outlined in **Table 1.1** below.

Table 1.1 Outline of report structure

Report Section	Section outcomes
Section 1	An introduction to and summary of the MCCO Project and the aims of the assessment
Section 2	An outline of the statutory context and the heritage significance legislative framework
Section 3	An overview of the methodology used for the preparation of this HHA
Section 4	An outline of the historical context for the study area
Section 5	An outline of the assessment context for the study area, including relevant heritage listings and assessments previously undertaken in the vicinity
Section 6	An outline of the physical context of the study area, including the results of the field survey and visual inspections
Section 7	An assessment of the heritage significance of the study area and its component elements, where relevant
Section 8	Heritage impact statement(s), based on the assessed level of significance
Section 9	Conclusion and recommendations
Section 10	A list of references used for the HHA

2.0 Statutory and Policy Framework

Being development for the purpose of coal mining, the MCCO Project is declared to be a State Significant Development (SSD) under the provisions of State Environmental Planning Policy (State and Regional Development) 2011 and will require Development Consent under Division 4.1 of Part 4 of the EP&A Act.

The Minister for Planning (or delegate) is the consent authority to make decisions on SSD applications where there are less than 25 objections to the application, has not been objected to by the local council, and there have been no reportable political donations.

The NSW Independent Planning Commission is the consent authority for SSD applications (including any modification applications), where:

- there have been 25 or more public objections to the application, or
- the local council has objected, or
- a reportable political donation has been made.

As the MCCO Project is classified as SSD, the provisions of the *NSW Heritage Act 1977* do not apply and instead heritage management requirements will be incorporated into the development consent should the project be approved. This means that Section 140 and 60 permits, or Section 139 exceptions and Section 57 exemptions under the *NSW Heritage Act 1977* will not be required for any works undertaken as part of the MCCO Project, if approved. This includes any further built heritage and/or archaeological investigation or salvage works.

Should the MCCO Project be approved, any further assessment, investigation, salvage of historical heritage sites, items or elements within the study area is proposed to be undertaken in accordance with the management strategies outlined in **Section 9.0** of this report.

In accordance with the relevant SEAR and best practice, the policies and guidelines referenced at **Section 2.1** have been considered in the preparation of this HHA.

2.1 Policies and Guidelines

As outlined in the above referenced SEAR, this HHA has been undertaken in accordance with guidelines set out in the *NSW Heritage Manual 1996* (Heritage Office and Department of Urban Affairs & Planning), including:

- *Archaeological Assessments*
- *Assessing Heritage Significance*
- *Statements of Heritage Impact*
- *Heritage Terms and Abbreviations.*

This HHA has also been prepared with consideration of the principles contained in the:

- *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 1999* (Australia ICOMOS. 2000)

- NSW Heritage Branch (now Division), Department of Planning, 2009, *Assessing Significance for Historical Archaeological Sites and 'Relics'*
- NSW Heritage office (now Division), Department of Planning, 2006, *The Historical Archaeology Code of Practice*.

3.0 Methodology

The purpose of this HHA is to identify and assess historical heritage items and areas of potential heritage and historical archaeological sensitivity within the study area. This section of the report sets out the methodology used to:

- Undertake background and historical research
- Identify areas for further visual inspection and assessment
- Undertake visual inspections
- Assess significance.

3.1 Historical Research

Historical research for the region and study area was compiled based on:

- previous heritage assessments that have been undertaken in the area, including but not limited to:
 - *Historical Themes of the Shire of Muswellbrook* prepared in 1995 by Dr. J. W. Turner
 - *Muswellbrook Shire Wide Heritage Study* prepared in 1996 by the EJE Group for Muswellbrook Shire Council
 - *Regional Histories of New South Wales* prepared in 1996 by the Heritage Office, Department of Urban Affairs and Planning
 - *Historical Heritage Assessment – Anvil Hill Project* prepared in 2006 by Umwelt for Centennial Hunter Pty Ltd
 - *Mangoola Coal Wybong Oral Heritage Report* prepared in 2008 by Hansen Baily Environmental Consultants for Xstrata Mangoola Pty Ltd
 - *Aboriginal and Historical Cultural Heritage Assessment: Mangoola Coal Continued Operations Project Pre-Feasibility Study*, prepared by EMM in 2016 for Glencore Coal Assets Australia.
- information provided by the MSLFaHS:
 - In November 2017 the MSLFaHS was contacted via email, and a formal information request was lodged for any historical information relevant to the study area. A response was received on 14 December 2017, which stated that the only information within the MSLFaHS database for the study area are the assessments previously prepared by Umwelt (2006, 2008, 2010a and 2010b, 2015)
 - A follow-up meeting was held with the MSLFaHS on 23 January 2018 at their offices within the Muswellbrook Local Library. During this meeting, the MSLFaHS database was again searched. Searches undertaken pertained to both the wider study area as well as to individual property names and locations as identified as part of further historical research conducted by Umwelt between December 2017 and the meeting date (January 2018)

- With the exception of five photos of 'Castle Hill', dated 2006, these searches did not reveal any further historical information relevant to the study area or to specific properties located within the study area.
- a review of the following sources, databases and/or references:
 - National Library of Australia (Trove)
 - Picture Australia, National Library of Australia Photographic Database
 - National Archives of Australia
 - NSW Land and Property Information
 - Mitchell Library, PICMAN catalogue (Pictures and Manuscripts), State Library NSW
 - State Records NSW.
- Interviews conducted with property owners/occupiers, undertaken as part of the visual inspections of individual properties within the study area.

The historical and archaeological context provided in this report is based on information from the above listed sources.

3.2 Identifying Areas Requiring Visual Inspection and Assessment

Background research was undertaken prior to undertaking the visual inspection of the study area, so as to enable the identification of items, properties or areas that required further assessment. Properties targeted for more detailed historical research and/or visual inspection were identified on the basis of:

- being heritage listed (local or state) properties/items
- appearing/being mentioned in the historical research undertaken to inform this assessment (e.g. mentioned by local residents as part of the oral history compiled in 2008, or being noted within previously prepared regional and local historical assessments)
- being visible on either the 1930 historical aerials or the 1974 topographic map (which shows historical structures/elements), or both.

All other areas were considered unlikely to contain items, properties or areas that required further assessment, based on a review of all available background information and mapping.

Also included was an inspection of Wybong Post Office Road. This was undertaken as:

- a portion of this road is proposed to be re-aligned as part of the MCCO Project
- the road is visible in available parish maps, indicating that it was one of the earlier roads or tracks established in the local area.

A 'shortlist' of 25 properties or areas was established prior to undertaking the visual inspection of the study area. Of the 25 'shortlisted' properties, all but one was subject to visual inspection; the owners of 'Castle Hill', located at Lot 9 DP 750968, did not grant access to their property and did not wish to participate in

the study. As already noted above, 'Castle Hill' is located approximately 1.8 kilometres to the south west of the MCCO Additional Project Area.

A summary of the 25 'shortlisted' properties is provided below for reference. They are also shown in **Figure 3.1**.

Table 3.1 Summary of 'shortlisted' properties targeted for inspection/further assessment

ID	Property Details	Sources	Inspected? (Y/N)
Within the MCCO Proposed Disturbance Area			
1	'Yards and structures' Lot 655 DP 263080	1974 topographic map (labelled as 'yards' and also indicated by unlabelled points)	Y
2	"Millville", structure, yard and tank' Lot 41 DP 531030	2008 oral history EMM 2016 assessment 1974 topographic map (labelled as 'yards' and also indicated by unlabelled points) 1930 aerial	Y
3	'Structures' Lot 3 DP 7590	1974 topographic map (indicated by unlabelled points) (Note: this property is located partially within the MCCO Additional Disturbance Area)	Y
4	'Timber stockyards' Lot 42 DP 531030	EMM 2016 assessment	Y
5	Wybong Post Office Road (part)	Early parish maps	Y
Within the MCCO Additional Project Area (but outside of the MCCO Proposed Disturbance Area)			
6	'Windmill' Lot 198 DP 750968	EMM 2016 assessment	Y
Within the wider study area			
7	'Yarlett and structures' Lot 122 DP 585122	1974 topographic map (shown as 'Yarlett' and indicated by unlabelled points)	Y
8	'Hidden Valley' Lot 14 DP 750915	1974 topographic map (shown as 'Hidden Valley ' and indicated by unlabelled points)	Y
9	'Sheds and yards' Lot 2 DP 555166	1974 topographic map (labelled as 'yards')	Y
10	'Clematis' Lot 100 DP 1156069	1974 topographic map (shown as 'Clematis' and indicated by unlabelled points)	Y

ID	Property Details	Sources	Inspected? (Y/N)
11	'Yards and sheds' Lot 7 DP 252956	1974 topographic map (labelled as 'yards' and 'sheds')	Y
12	'Brogheda Ruins, Shed and Silo' Part of Lot 101 DP 1116579 and Part of Lot 1001 DP 1162479 Refer to Section 5.1.1 for further information regarding the location of this item/property.	Local heritage listing 2008 oral history 1974 topographic map (labelled as 'Brogheda', 'shed', 'silo' and 'ruin')	Y
13	'Structure and shed' Lot 170 DP 750968	1974 topographic map (labelled as 'sheds')	Y
14	'Dwelling, being the former Wybong Post Office and shed' Lot 122 DP 665563	2008 oral history 1974 topographic map (indicated by unlabelled points) 1930 aerial	Y
15	'Wybong Public Hall' Lot 100 DP 1111213	2008 oral history Umwelt 2006 assessment 1974 topographic map (shown as 'Wybong Hall' and 'yards') 1930 aerial	Y
16	'Dwelling, being a relocated slab hut from Anvil Hill and marked tree (non-Aboriginal)' Lot 1 DP 240086	1974 topographic map (indicated by unlabelled points)	Y
17	'Yarraman, being a relocated slab hut from Anvil Hill' Lot 2 DP 240086	1974 topographic map (shown as 'Yarraman' and indicated by unlabelled points)	Y
18	'Structure' Lot 8 DP 240086	1974 topographic map (indicated by unlabelled points)	Y
19	'Gurewah' Lot 11 DP 240086	1974 topographic map (shown as 'Gurewah' and indicated by unlabelled points) 1930 aerial	Y
20	'Callatoota' Lot 72 DP 631197	2008 oral history Umwelt 2006 assessment 1974 topographic map (shown as 'Callatoota' and indicated by unlabelled points) 1930 aerial	Y

ID	Property Details	Sources	Inspected? (Y/N)
21	'Wybong Cemetery' Lot 7004 DP 93976, Lot 80, 81, 82, 83, 84, 85, 86 DP 7509696	Locally listed heritage item 2008 oral history Umwelt 2006 assessment 1974 topographic map (shown as 'Wybong Cemetery') 1930 aerial	Y
22	'Dwelling (Rosedale) and structure (shed)' Lot 18 DP 750969	2008 oral history Umwelt 2006 assessment 1974 topographic map (indicated by unlabelled points [house] and shown as 'shed' [shed]) 1930 aerial	Y
23	'Former Church of St Thomas Aquinas' Lot 1 DP 910116	2008 oral history Umwelt 2006 assessment 1974 topographic map (labelled as 'C') 1930 aerial	Y
24	'Collareen' Lot 6 DP 750969	2008 oral history Umwelt 2006 assessment 1974 topographic map (shown as 'Collareen' and indicated by unlabelled points) 1930 aerial	Y
25	'Castle Hill' Lot 9 DP 750968	2008 oral history 2006 and 2010 Umwelt assessments 1974 topographic map (shown as 'Castle Hill' and indicated by unlabelled points) 1930 aerial	N

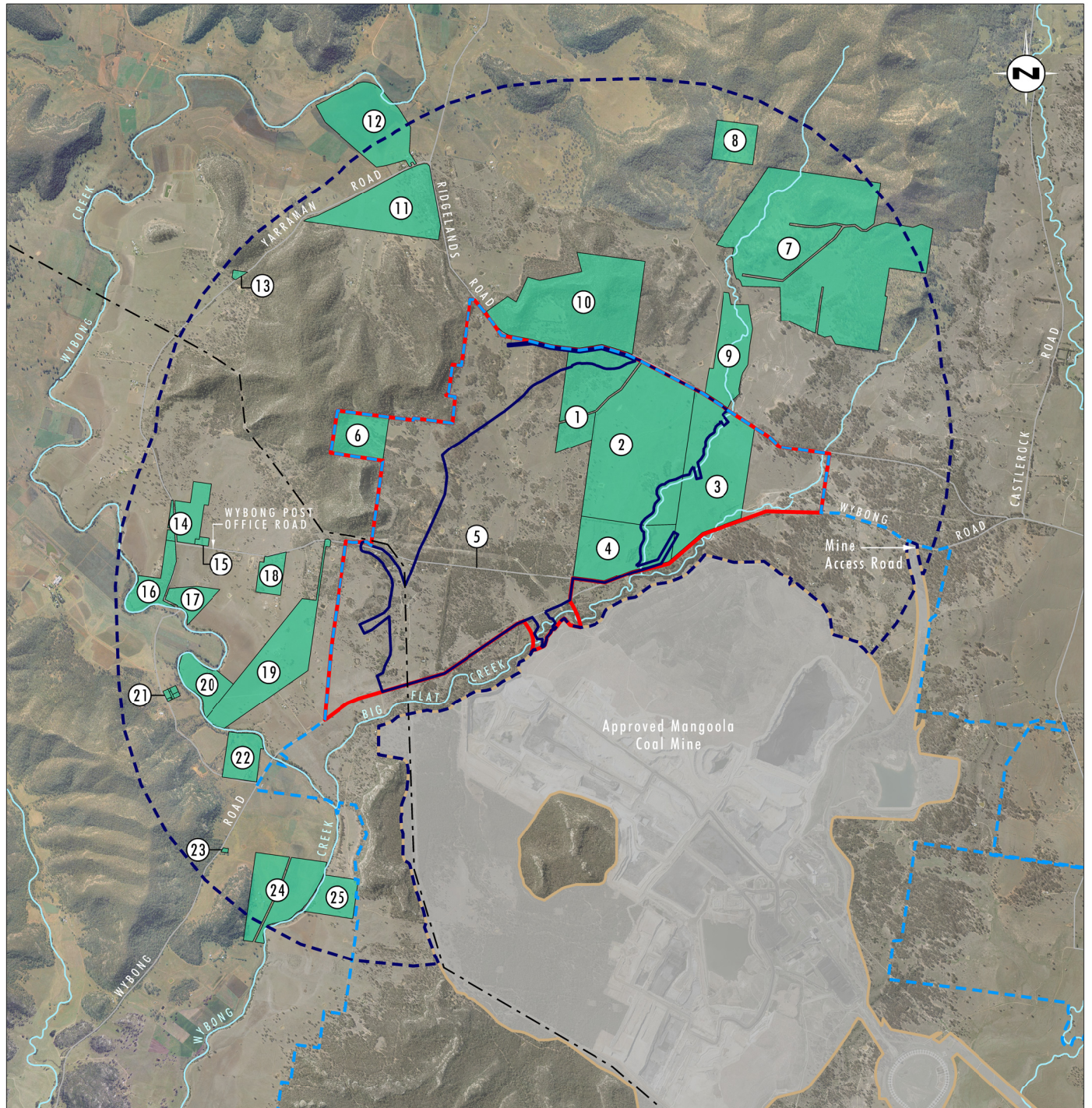


Image Source: Glencore (April 2018)

Data Source: Glencore (2019)

0 1.0 2.0 3.0km

Legend

- MCCO Project Area
- Approved Mangoola Coal Mine Disturbance Area
- MCCO Additional Project Area
- MCCO Additional Disturbance Area
- Historic Heritage Study Area
- Properties targeted for further Assessment/Inspection

Properties targeted for further Assessment/Inspection:

- | | |
|--|--|
| 1 'Yards and structures' | 11 'Yards and sheds' |
| 2 'Millville', structure, yard and tank' | 12 'Brogheda Ruins, Shed and Silo' |
| 3 'Structures' | 13 'Structure and shed' |
| 4 'Timber stockyards' | 14 'Dwelling, being the former Wybong Post Office and shed' |
| 5 'Wybong Post Office Road' | 15 'Wybong Public Hall' |
| 6 'Windmill' | 16 'Dwelling, being a relocated slab hut from Anvil Hill and marked tree (non-Aboriginal)' |
| 7 'Yarlett and structures' | 17 'Yarraman, being a relocated slab hut from Anvil Hill' |
| 8 'Hidden Valley' | 18 'Structure' |
| 9 'Sheds and yards' | 19 'Gurewah' |
| 10 'Clematis' | 20 'Callatoota' |
| | 21 'Wybong Cemetery' |
| | 22 'Dwelling (Rosedale) and structure (shed)' |
| | 23 'Former Church of St Thomas Aquinas' |
| | 24 'Collareen' |
| | 25 'Castle Hill' |

FIGURE 3.1

'Shortlisted' Properties Targeted for Further Assessment/Inspection within the Study Area

3.3 Field Survey and Visual Inspections

The field survey and targeted visual inspections were undertaken over two days (23 and 24 January 2018) by Umwelt Senior Heritage Consultant Karyn Virgin and Umwelt Senior Archaeologist Alison Lamond. The Umwelt survey team was escorted within the study area by Project Approvals Officer Lori Dennen-King of Mangoola.

As discussed at **Section 3.2** above, ‘shortlisted’ properties were identified on the basis of background research, which included a review of historical aerials and mapping, oral history, and previous assessments of the area. All but one of the ‘shortlisted’ properties were able to be inspected during the field survey.

3.3.1 Targeted Visual Inspections

The list of properties/areas requiring targeted inspection was provided to Mangoola prior to scheduling the field survey, so that access could be arranged with private land owners and Mangoola property tenants. As part of this consultation and organisation process, owners and tenants were advised that:

- Their property had been identified on the basis of background research undertaken on behalf of Mangoola
- The study team would ideally require access to the entirety of the property for the purposes of a HHA as part of the wider MCCO Project. This included internal access to any dwelling(s), shed(s), and other structures
- Any information that they were aware of pertaining to the history of the property would be beneficial to the overall objects of the study. This included information about:
 - The history of their property (including how long they had been in residence)
 - The history of the local area
 - Past tenants, users, or occupiers of the property
 - Any buildings, structures or other elements known to have been previously located on their property or within the local area
 - Any changes that had occurred to extant structures, elements or areas within their property.

On the basis of the above, ‘shortlisted’ properties were subject to pedestrian survey, with owners and/or tenants in attendance. The below dot points outline the basic methodology used for the field survey and targeted property inspections.

- All built elements within the properties were inspected externally. Where external inspection indicated that it was warranted, internal inspection was also undertaken
- Land within the properties was subject to pedestrian survey, so as to enable the identification of any visible archaeological material, areas of archaeological potential, or landscape and landform features of note
- Discussions were held with owners/tenants during the visual inspection. Information pertaining to the history of the property and area provided by owners/tenants was recorded as field notes

- The locations of inspected structures and elements within the properties were recorded using a handheld Garmin GPS
- Structures and elements within the properties were also photographed.

3.3.2 General Field Survey

In addition to the above described targeted visual inspections of ‘shortlisted’ properties, a more generalised field survey of the study area was also undertaken. This involved the inspection of non-‘shortlisted’ properties within the study area from adjacent roadways, tracks, and boundary fences, where possible. This was undertaken to determine if further visual inspection/assessment of these properties, which were not identified in the background research, was required.

Aboriginal archaeological surveys of the MCCO Additional Project Area were undertaken in February 2018, and again in May 2018 and subsequent Aboriginal archaeological test excavations were conducted in March 2018 by OzArk and the registered Aboriginal parties for the MCCO Project.

Consultation between Umwelt and OzArk revealed a number of remnant infrastructure elements such as fences, a broken windmill of poor condition, and building remnants. However a review of the photography undertaken by OzArk confirms that none of these remnant elements are of heritage significance; all remnants identified are typical of the rural landscape within which they were found, and none appear to be in particularly good condition. Overall, no additional potential historical heritage sites or items were identified during the 2018 Aboriginal survey or test excavations.

3.3.3 Correlation with the 2016 EMM Assessment

Prefeasibility assessments for the MCCO Project were prepared to inform the preliminary project design process and identify items or areas that require detailed assessment throughout feasibility. The Aboriginal and Historic Cultural Heritage Assessment Pre-feasibility Study (EMM 2016 assessment), adopted a similar field survey methodology as described in the below excerpt:

Potential historical items and structures designated for field inspection were identified using current aerial photography and historical aerial photography of c.1930 and 1967 provided in the original Historical Heritage Assessment (Umwelt 2006b). Although only one structure was identified on the 1930s and 1967 aerial (Item 1), all visible structures in or near the project assessment footprint on current aerial photography were inspected to ensure any potential historical items were not overlooked on the lower resolution historical photography.

A more extensive survey of the project assessment footprint was carried out as part of the Aboriginal heritage survey. The survey coverage for built historical items was much broader than the transect width of 20 metres because such items were easily visible from a distance in the cleared paddocks that made up most of the project assessment footprint. During this survey any items/structures of potential historical heritage significance were photographed and recorded using GPS.

EMM, 2016, p. 53

The 2016 EMM assessment does not provide any clear definition of the extent or location of the area that was assessed to inform the pre-feasibility study, or the extent of the area that was subject to field survey. However, mapping provided at Figure 4.1 of the EMM report clearly shows that the ‘structures targeted for inspection’ as part of the historical heritage component of their assessment cover a large portion of the current study area.

The 'structures targeted for inspection' as part of the 2016 EMM assessment are shown in relation to the current study area in **Figure 3.2**. As is evident within the figure, a number of the locations targeted by EMM were also included in the 'shortlist' of properties developed for the current assessment. The EMM study covered a larger area than the MCCO Project Additional Project Area, and therefore some of the locations covered by the EMM study were not revisited in this HHA. Further, the EMM assessment conclusively identified that some of those 'structures targeted for inspection' did not have any heritage significance; these structures (indicated by pink circles on **Figure 3.2**) were therefore not required to be re-inspected as part of the current HHA. Only those structures located within the current study area and identified by EMM in 2016 to be of potential heritage significance were re-inspected as part of the current HHA. It is noted that the EMM report does not provide an assessment of the heritage significance of these items (describes them as being of potential significance only). A significance assessment has been undertaken as part of this assessment.

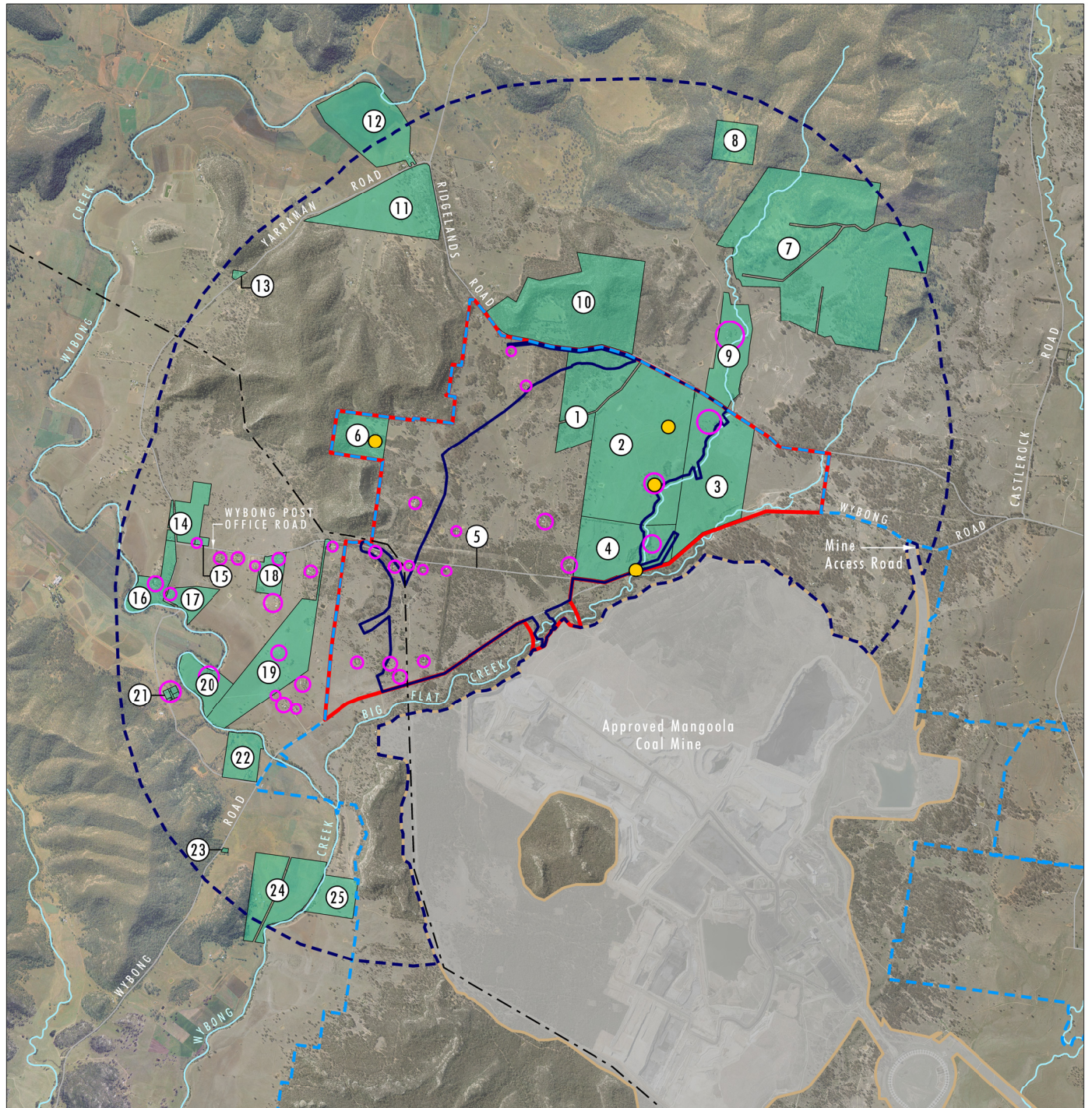


Image Source: Glencore (April 2018)
Data Source: Glencore (2019), EMM (2016)

0 1.0 2.0 3.0km

Legend

- MCCO Project Area
- Approved Mangoola Coal Mine Disturbance Area
- MCCO Additional Project Area
- MCCO Additional Disturbance Area
- Historic Heritage Study Area
- Properties targeted for further Assessment/Inspection
- Pre-feasibility Studies Structures targeted for Inspection (2016 EMM Assessment)
- Pre-feasibility Studies Historic "Heritage Items" (2016 EMM Assessment)

Properties targeted for further Assessment/Inspection:

- | | |
|--|--|
| 1 'Yards and structures' | 8 'Hidden Valley' |
| 2 'Millville', structure, yard and tank' | 9 'Sheds and yards' |
| 3 'Structures' | 10 'Clematis' |
| 4 'Timber stockyards' | 11 'Yards and sheds' |
| 5 'Wybong Post Office Road' | 12 'Brogheda Ruins, Shed and Silo' |
| 6 'Windmill' | 13 'Structure and shed' |
| 7 'Yarlett and structures' | 14 'Dwelling, being the former Wybong Post Office and shed' |
| | 15 'Wybong Public Hall' |
| | 16 'Dwelling, being a relocated slab hut from Anvil Hill and marked tree (non-Aboriginal)' |
| | 17 'Yarraman, being a relocated slab hut from Anvil Hill' |
| | 18 'Structure' |
| | 19 'Gurewah' |
| | 20 'Callatoota' |
| | 21 'Wybong Cemetery' |
| | 22 'Dwelling (Rosedale) and structure (shed)' |
| | 23 'Former Church of St Thomas Aquinas' |
| | 24 'Collareen' |
| | 25 'Castle Hill' |

FIGURE 3.2

Correlation between the Current
HHA and the 2016 EMM Assessment

3.3.4 Predictive Model

Based on a review of historical heritage assessments that have previously been undertaken in the local and regional area, a predictive model outlining the most likely historical heritage elements, structures or buildings anticipated to be encountered within the study area was able to be established prior to undertaking the field survey.

Historical mapping, regional histories, previous assessments and the 2008 oral history collectively suggest that the historical heritage of the study area is most likely to comprise:

- Development that dates from the 1860s onwards:
 - It is acknowledged that limited examples of development dating from the 1820s onwards are extant within the wider Muswellbrook Local Government Area (LGA). It is noted, however, that the oldest known surviving historical heritage items within the local area (being the suburb of Wybong) date from the late 1800s onwards
 - Prior to 1861, there had only been three owners of freehold land within the Parish of Wybong. Settlement of the area increased dramatically after this time
 - Development that pre-dates the 1860s (at the earliest) was not, based on background research, anticipated to be present within the study area.
- Vernacular dwellings and associated yards, most likely dating from the late 1800s and early 1900s
- Farming infrastructure, equipment and structures, including vernacular sheds, fencing, windmills, wells, stockyards and harvesters, etc.

Based on the results of previous studies, it was also anticipated that potential historical heritage items were likely to have been subject to modification and change over time. Such changes may include or have been caused by:

- Deterioration due to age and dis-use
- Property renovations and upgrades
- Piecemeal removal or change of building elements, structures or infrastructure over time, as a result of damage, deterioration, or the need to re-purpose building materials
- General disturbances associated with ongoing and sustained agricultural land use practices.

3.4 Assessing Significance

The Australian ICOMOS *Burra Charter* 1999 (the *Burra Charter*) defines cultural significance as meaning 'aesthetic, historic, scientific or social value for past, present or future generations' (Article 1.2). The *Burra Charter* was written to explain the basic principles and procedures that should be followed in looking after important places.

Cultural significance is defined as being present in the 'fabric, setting, use, associations, meanings, records, related places and related objects'. The fabric of a place refers to its physical material and can include built elements, sub-surface remains and natural material (Australia ICOMOS 2000).

3.4.1 Built Heritage

The *NSW Heritage Manual* (1996) published by the then NSW Heritage Office and Department of Urban Affairs and Planning, sets out a detailed process for conducting assessments of heritage significance. The manual provides a set of specific criteria for assessing the significance of an item, including guidelines for inclusion and exclusion.

The seven criteria defined by the Heritage Division, OEH, and used by the NSW Heritage Council as an assessment format within NSW have been used in the preparation of this HHA. The seven criteria are:

Criterion (a) an item is important in the course, or pattern, of NSW's cultural or natural history.

Criterion (b) an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history.

Criterion (c) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW.

Criterion (d) an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons.

Criterion (e) an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history.

Criterion (f) an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history.

Criterion (g) an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments.

The Heritage Council of NSW recognises four levels of significance for heritage in NSW: local, state, national and world. An item has local heritage significance when it is important to the local area. An item has state heritage significance when it is important in NSW. Most heritage in NSW is of local significance.

3.4.2 Archaeology

As a component of the holistic concept of significance, archaeological significance has traditionally been described as a measure by which a site may contribute knowledge, not available from other sources, to current research themes in historical archaeology and related disciplines (Bickford & Sullivan 1984 19-26). Archaeological significance has traditionally been linked to archaeological research potential in that 'a site or resource is said to be scientifically significant when its further study may be expected to help answer questions...' that is scientific significance is defined as research potential (Bickford & Sullivan 1984 23-24).

Following Bickford and Sullivan's work on archaeological significance (Bickford & Sullivan 1984) the following questions are generally used as a guide to assessing the significance of an archaeological site in terms of its research potential (Criterion (e) of the NSW Heritage assessment criteria):

- Can the site contribute knowledge that no other resource can?
- Can the site contribute knowledge that no other site can?
- Is this knowledge relevant to general questions about human history or other substantive questions relating to Australian history, or does it contribute to other major research questions?

In 2009 the Heritage Council of NSW endorsed the Heritage Branch Department for Planning (now Heritage Division OEH) guideline *Assessing Significance for Historical Archaeological Sites and 'Relics'* which considers a broader approach to archaeological significance rather than a focus on the research potential of an archaeological site only.

The assessment of archaeological potential and significance presented in **Section 7.3** is based upon the broader questions detailed in the 2009 endorsed guidelines.

3.4.3 Significance Assessment Limitations

It is noted that the OEH letter providing input to the SEARs requires that:

Where impacts to State or locally significant heritage items are identified, the assessment shall:

- a) include a statement of heritage impact for all heritage items (including significance assessment).*

In accordance with the above, this report includes a statement of heritage impact and significance assessment only for those items, structures or elements for which potential direct and/or indirect impacts have been identified. Direct and indirect impacts of the MCCO Project as they relate to historical heritage are discussed further in **Section 8**.

A broader significance assessment has, however, been prepared for the wider study area, as presented in **Section 7.0**. This broader assessment includes consideration of all other properties, elements or sites located within the wider study area that will not be subject to any direct or indirect impacts as a result of the MCCO Project, but which have been identified through visual inspection and background research to be of potential or established heritage significance.

4.0 Historical Context

This section of the report provides an historical context for the broader locality to provide an understanding of the significance of the historical heritage of the study area.

4.1 Aboriginal Cultural Heritage

The MCCO Additional Project Area is located in the overlapping boundaries of the Wonnarua and Gomeroi tribal areas of the upper Hunter Valley. The following overview of the ethnohistorical sources of regional Aboriginal culture relevant to the MCCO Additional Project Area has been sourced directly from the *Aboriginal Archaeological Impact Assessment* prepared for the MCCO Project by OzArk (2018).

Tocomwall (2017: 49) notes that ethnographic accounts and anthropological notes written in the mid- to late-19th century indicate that the traditional territory of the Wonnarua people extended over a two thousand square mile area of land that included the Hunter River and all its tributaries from within ten miles of Maitland to the apex of the Liverpool Ranges. This interpretation is challenged by the Wonnarua Local Aboriginal Land Council (Tocomwall 2017: 482) who state that there is much debate about the tribal boundaries and that the dividing line between the Wonnarua and the Gomeroi (Kamilaroi) may have been much further south in the area of 'Jerrys Plains'.

The Aboriginal people in the region of the MCCO Additional Project Area lived in an environment rich in food resources. Freshwater fish, shellfish, reptiles, mammals, birds and plant food provide a diverse diet (see Brayshaw 1981). Brayshaw (1986: 82) suggests that inland groups visited the coast during the summer when marine resources were plentiful, and coastal groups travelled inland to participate in the winter kangaroo hunts. Trade and/or exchange also occurred between the coastal and inland groups including visiting by coastal and inland groups for initiations and ceremonies seemed to occur. These were conducted within earthen circles. Carved trees were associated with these sites (Brayshaw 1981: 12). Reed spears and shells were traded inland for possum skin rugs and fur cord (Brayshaw 1986: 41).

The only known ethnographic mentions of the use stone artefacts relate to the use of stone hatchets as multi-purpose tools and of the attachment of quartz flakes as barbs on spears (Brayshaw 1986: 66, 68). There is also little ethnographic evidence concerning the locations of regional Aboriginal camping places, however, the factors of proximity to fresh water and of elevation for visibility are mentioned as important considerations (Fawcett 1898).

4.2 Regional History

At the beginning of European settlement, the land was considered terra nullius (no one's land) by the British Government and all ownership of land was vested in the Crown. While this belief was found to be flawed in the 20th century, it governed the sale and lease of Crown land during the early period of land settlement by Europeans in the 19th and early 20th century.

Following the closure of Newcastle as a convict settlement in the early 1820s, the distribution of land within the Hunter Valley began in earnest. In the early 1820s, following the release of the Bigge reports into the state of New South Wales, there was a push to stimulate the economy and encourage free settlers (rather than convicts) to take up land. The British Government therefore implemented a policy of free land grants. The size of the grants was based on the amount of capital held by the settler and the ability of the settler to develop the land and maintain a number of assigned servants (convicts). This policy would develop the country and relieve the British government of the cost of maintaining convicts.

By 1826 all the land with river frontage along the Hunter as far up as the Pages River and the lower parts of the Williams and Paterson Rivers had been alienated or reserved for villages or church and school estates. After this, early settlers followed the Goulburn River and its tributaries such as Wybong Creek.

4.3 Local History of Wybong

4.3.1 Land Tenure and Early Settlement, Including the History of Selection

The first person to select land in the Parish of Wybong was Charles Hunter McIntosh. On 4 April 1827 he was promised 640 acres by Governor Richard Bourke. The land was selected on the east bank of Wybong Creek and he was allowed to take possession on 21 September 1827. It is not known if McIntosh settled on his block or if he leased it to others. He was granted the land on 30 September 1834 (Department of Land, LTO, Grant Index Series 34: 103). There was often a long period between taking possession and obtaining the deeds. On 18 March 1836 McIntosh sold the 640 acres to John Pike of Pickering for £320.

In 1831 the British Government passed an Act which allowed the sale of Crown land in New South Wales and ceased to provide free grants of land. The land could be selected, but it was then put up for auction with a reserve of five shillings per acre (King 1957: 41). At the same time the Government allowed the leasing of Crown land annually by auction with a minimum of £1 per section of 640 acres. This was increased to £5 per section in 1840 (King 1957: 41).

John Pike was one of the original settlers in the Denman area. His base station was 'Pickering', but he took up a number of blocks along the Goulburn River and Wybong Creek under lease and purchase. In 1840, Pike indicated that he wished to purchase two 640 acres blocks in the Parish of Wybong. They were put up for auction and Pike paid £384 for each block. He received his deeds on 5 January 1841 (Department of Land, LTO, Grant Index Series 73: 44-5). Pike was to remain the sole owner of land within the Parish of Wybong until 16 April 1859 when he sold the three 640 acre blocks (Portion 1-3) to Henry Nowland of Muswellbrook. Nowland paid £1440 for the properties.

In 1861, John Robertson's land reform became law under the *Crown Land Alienation Act* and the *Crown Lands Occupation Act*. This radical land reform introduced the concept of conditional purchase, which is actually a purchase on terms subject to conditions such as residency, fencing and improvements. A deposit was paid and the balance paid off with annual instalments. When all debts to the Crown had been paid, the holder received freehold title to the land. Along with the conditional purchase were additional conditional purchases and conditional leases which allowed the holder of a conditional purchase to take up further land (King 1957: 80). There were a number of changes to the Acts, but they were the system of acquiring land from the Crown in the Parish of Wybong from 1861. The normal sale and lease of land between individuals continued.

Prior to 1861, there had only been three owners of freehold land within the Parish of Wybong: Charles H McIntosh, John Pike and Henry Nowland. Following Robertson's 1861 Land Act, settlers moved into the area as shown in **Table 4.1**. This information has been sourced from NSW State Records, Map for Parish Wybong, 1st and 4th editions.

Table 4.1 Wybong Land Settlers between 1861 and 1889

Name	Year Land was Taken Up
Wybong Land Settlers between 1861 and 1869	
Joseph Ashburn	1866

Name	Year Land was Taken Up
WH Bannister	1868-9
AA Clark	1869
Michael Cody	1869
James Cook	1867
WJ Dickerson	1869
S Gallagher	1867
Patrick Galvin	1865-9
J Maloney	1869
William Nowland	1862-9
AB Smith	1868
ED Sweeney	1864-8
SL Thornton	1869
Wybong Land Settlers between 1870 and 1879	
Charles Clark	1873-77
James Clark	1872
John Cody	1872
William Enright	1877
Martin Flanagan	1873-7
Patrick Galvin	1873-6
J Gannon	1870
P Godfrey	1875
Joseph Jones	1875
James Maloney	1873-7
J McHugh	1870-6
D, J, Michael and Patrick Moloney	1870-7
DA Nicol	1874
Nowland Family	1873-8
S Saunders	1871-5

Name	Year Land was Taken Up
AB & RH Smith	1875-7
AR Stafford	1874
J Sweeney	1873
Wybong Land Settlers between 1880 and 1889	
William Almond	1886
William Bates	1881-6
John Boorer	1885-8
George Clark	1887-8
William E Clark	1889
John Cody	1881
T Hogan	1880
JH & RT Keys	1880-2
ER & J McTaggart	1884-6
EH & W Nowland	1883-6
GF Rowland	1885-6
SL Thornton	1881-9

In 1906, the Shire of Wybong was formed. **Table 4.2** details the persons in the Parish of Wybong or who had land in a number of parishes that included part of Wybong.

Table 4.2 Wybong land ownership in 1906

Name	Property	Type
Frederick Barwick	200ac CP Ph Wybong	Owner
William Bates Jnr	600ac CP Ph Brogheda	Owner
Henry W Bell	418ac 2r freehold 1250ac Crown land Ph Wybong	Joint Owner
FS Bell	418ac 2r freehold 1250ac Crown land Ph Wybong 467ac 2r f Clanricard	Joint Owner
John R Boorer	for Mrs Boorer, Millville, Wybong	Manager
Mary Ann Boorer	2199ac CP Ph Wybong	Owner
William E Clark	300ac CP Ph Wybong	Owner

Name	Property	Type
Benjamin Cowan	160ac CP Ph Wybong	Owner
Martin Flanagan	120ac CP Ph Wybong	Owner
John P Galvin	224ac CP Ph Wybong	Owner
Michael Galvin	275ac CP Ph Brogheda	Owner
James Googe	40ac CP Ph Brogheda	Owner
John T Hogan	150ac CP Ph Wybong	Occupier
Thomas Hogan	500ac CP Ph Wybong	Owner
William Huggins	60ac CP Ph Wybong	Owner
JH Keys	80ac CP Ph Brogheda	Owner
Richard T Keys	19500ac CP 3455ac CL Ph Clanricard & Brogheda	Owner
James A McHugh	200ac CP Ph Brogheda	Owner
Joseph McHugh	390ac CP Ph Wybong	Owner
Amos A McTaggart	180ac CP, 113ac PPL Ph Wybong	Owner
Margaret McTaggart	200ac CP Ph Wybong	Owner
Charles McTaggart	261ac 3r CPPh Wybong	Owner
John F McLean	1565ac CP Ph Wybong	Joint Owner
Patrick Moloney	390ac CP Ph Wybong	Owner
John Moloney	160ac CP Ph Wybong	Owner
Pauline Nowland	1088ac freehold, 235ac CL, Ph Wybong	Owner
Walter V Parkinson	1200ac lease, Ph Wybong	Joint Occupier
Charles R Ray	80ac CP Ph Wybong	Owner
Sidney J Thornton	346ac CP Ph Brogheda	Owner
Stephen S Thornton	40ac CP, 120ac CL Ph Brogheda	Owner
Sylvester Thornton	1480ac CP 200ac CL, Ph Brogheda	Owner
Edward A Tompson	1565ac CP Ph Wybong	Joint Owner
Alexander Weidmann	560ac CP, 240ac CL Ph Wybong	Owner

Parish maps dated 1910, 1921 and 1932 are provided in **Figure 4.1**, **Figure 4.2** and **Figure 4.3**.



Image Source: Land Registry Services - NSW
Data Source: Glencore (2019)

FIGURE 4.1

1910 Parish of Wybong Map Showing the MCCO Additional Project Area and Historic Heritage Study Area



Image Source: Land Registry Services - NSW
Data Source: Glencore (2019)

Legend

- MCCO Project Area
- Approved Mangoola Coal Mine Disturbance Area
- MCCO Additional Project Area
- MCCO Additional Disturbance Area
- Historic Heritage Study Area

FIGURE 4.2

1921 Parish of Wybong Map Showing the
MCCO Additional Project Area and
Historic Heritage Study Area

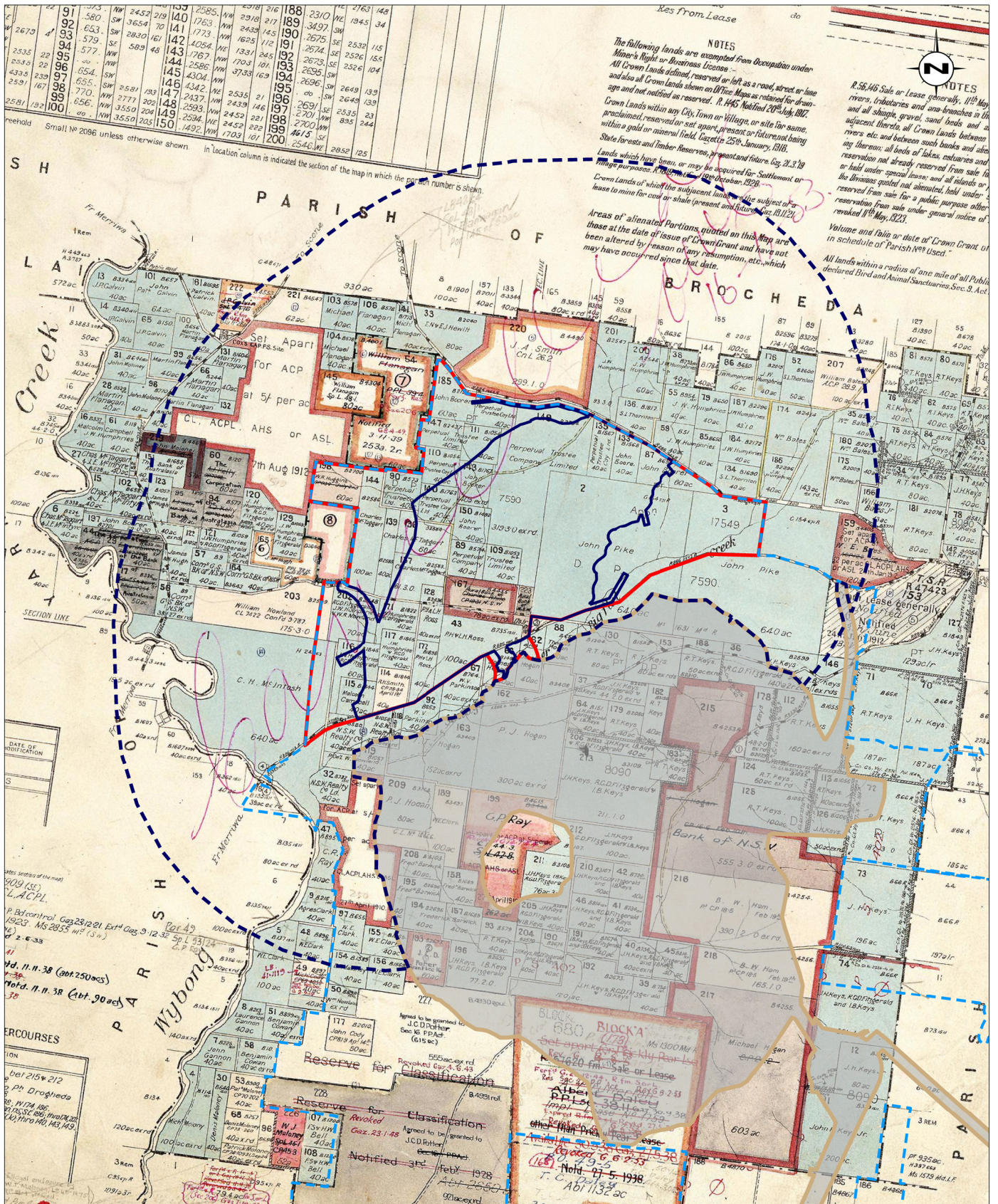


Image Source: Land Registry Services - NSW
Data Source: Glencore (2019)

- Legend**
- MCCO Project Area
 - Approved Mangoola Coal Mine Disturbance Area
 - MCCO Additional Project Area
 - MCCO Additional Disturbance Area
 - Historic Heritage Study Area

FIGURE 4.3

1932 Parish of Wybong Map Showing the MCCO Additional Project Area and Historic Heritage Study Area

4.3.2 Historical Land Uses in Wybong

By the end of the 19th century, most of the Crown land in the Parish of Wybong had been taken up. *The Journal of the Legislative Council of NSW, Appendix 2, 1885, Vol. 39 Part 1* provides information on persons in the area along with acres held and stock numbers, as shown in **Table 4.3**.

Table 4.3 Wybong land settlers' land use in 1885

Name	Acres	Horses	Cattle	Sheep	Pigs
M Cody	80	2	5		2
Charles McTaggart	660	12	10		1
T Hogan	40	8	16		1
W Bates	560	9		300	
James Clark	200	14	24		3
EC Googe	40	5	7		2
JJ Googe	170	5	5		
John Googe	80	1	4		3
E Sweeney	130	0	20		
J McHugh	80	3	14		1
James Galvin	140	10	11		
J Maloney	80	12	4		
P Quinn	150	10	6		7
J McHugh Snr	80	4	15		2
M Flanagan	620	16	35		4
J Sellings	160	2	5		2

4.3.3 World War II

World War II led to the increase of settlement within Wybong with soldiers being encouraged to settle in the area. World War II had an important part in the local history of Wybong; for example, the Castle Rock School (which closed in 1950) was noted for its contribution during World War II. Camouflage nets as well as knitted garments were produced by the school's pupils and funds were raised (Doyle, H., 1984).

The Ray property 'Castle Hill', located outside of the current MCCO Additional Project Area (but within the wider study area) was also used by the RAAF during WWII for observation as Gordon Ray writes:

The Airforce picked our place during the war time as an observation post to identify enemy planes and lost planes. We were issued with code names which changes each Monday...

(Ray [Gordon Philip] 1984:37)

4.3.4 Religion and Education

Religion was the most important aspect of social life in the nineteenth century. Four years after the gazettal of Muswellbrook the Church of England and Presbyterian Church both officiated church services in the town and it was these two organisations which were first to build churches in the town of Muswellbrook in 1843 (Turner 1995: 36-37).

According to the MSLaFHS and previous studies (Umwelt 2006), the original Church of St Thomas Aquinas at Wybong was built in 1872, but was not officially blessed and opened until 1888. However, no primary source is cited for this information and the Diocese of Maitland-Newcastle were unable to provide a date for the original church when enquiries were made by the MSLaFHS (Weir Phillips 2009: 7).

An article from the *St Bernard's Parish, Denman Newsletter* stated of the original church:

'It was a slab walled building but not quite the size it is now. The Church was not officially opened and blessed until 1888. One wonders why, but I guess as travel was by horse and buggy, and our Bishop resided at Maitland, it would have been a long buggy ride from there!'

(Hogan, P., 2000)

The time taken between the construction of the church and its official consecration may be due to the acre of land on which the church stands not being conveyed to the Catholic Church until 1888.

On 7 July 1901 a small convent constructed by a local farmer and builder, John Hogan, was opened in the vicinity of the current church location. The convent was a simple weatherboard building of four main rooms and a detached kitchen. The community of sisters that inhabited and used the convent were the Sisters of St Joseph.

The Sisters of the convent opened a school in the former Church of St Thomas Aquinas around this time, which was known as the Lower Wybong School. A second school, approximately five miles further north on Yarraman Road, was established in 1902 and was known as the Upper Wybong School. The Sisters would travel between the schools as needed. Both schools comprised less than twenty students each (Weir Phillips 2009: 8).

In 1908 the convent at Lower Wybong was extended to provide boarding facilities to girls from outlying areas, while boys were sent to Aberdeen. Pupil numbers began to dwindle, however, and by 1919 the Convent and its school were moved to Denman. The convent building itself was removed from the site.

The Former Church of St Thomas Aquinas was either subject to extensive renovations or substantially rebuilt in 1919. The Hogan family undertook this work, with Oscar Hogan stating:

'The little church, which from time to time has been re-built by my family, the original slab one was built by the family. The priest who used to stay here [Old Angle Vale]... they built him a little annex down on the church so he could stay with the church... so it was a little room there, where he used to stay.'

(Hansen Bailey 2008: 46)

The above suggests that the extant weatherboard church on Wybong Road was constructed around 1919 to replace the original slab building; this is supported by newspaper articles at the time which announced the opening of a 'new church at Wybong' (*Freeman's Journal* 24 Apr 1919: 36). It is also noted that the fabric of the Priest's room at the extant Church indicates that it was added later than the main body of the building (Weir Phillips 2009: 10). The date that the Church ceased operations is not known.

The Wybong Cemetery is also located at Wybong off Yarraman Road. This cemetery was dedicated in March 1877. It contains the graves of members of notable local families, including the McTaggart, Thornton, Moloney, and Boorer families. It is a locally listed heritage item under Schedule 5 of the Muswellbrook LEP 2009.

The historical record also contains a number of references to the death of a 'lad named Galvin' in 1874 (*Evening News* 14 Feb 1874: 2). The child, named Dan Galvin, is reported to have drowned in the 'Yarrimin hole in the Wybong Creek' (*The Muswellbrook Chronicle* 4 Jun 1935: 3), which is located adjacent to the existing Yarraman Bridge (where Yarraman Road crosses Wybong Creek). The 2008 oral history by Hansen Bailey suggests that Dan Galvin was buried near to St Thomas Aquinas, on the 'Collareen' property and in proximity to the boundary line between 'Collareen' and 'Minnie Vale' and near to the creek.

The location of the grave site has since been confirmed by Glencore staff; the grave site is located outside of the current study area and further to the west of the creek than indicated by the 2008 oral history. For reasons of sensitivity, the exact location of the grave site has not been included in this report. The grave site is formally marked with a headstone and fencing.

4.4 Industries of Wybong

Throughout the nineteenth and early twentieth centuries, a number of core industries characterised the local area of Wybong, and strongly influenced the spatial distribution and nature of development and land use within the landscape. These industries are discussed further below.

4.4.1 Dairying

Dairying was one of the initial impetuses for the division of large estates in the Upper Hunter. By the early 20th century the Upper Hunter was mostly occupied by dairy farms of up to 500 acres in size (Heritage Office & DUAP, 1996:49). The 1828 census indicates that of the 191 large (over 1,000 acre) estates occupying the Upper Hunter Valley 'only one third were sheep grazing enterprises with cattle raising being much more common' (Turner 1995: 18).

By the 1890s dairying had become an important industry in the Upper Hunter. This importance coincided with the 'development of the mechanical separation of milk and refrigeration causing a re-shaping of the pattern of farming' in the Muswellbrook LGA, due to the increased demand for dairy products in Australia and overseas (Turner 1995:19).

In 1893 there was a creamery established at Kayuga, in 1903 the creamery at 'Overton' was set up by Thomas Blunt, and the Denman Co-operative Dairy Company was founded in 1907. These were the earliest creameries within the locality.

In 1905, dairying had commenced on many of the farms within the region; in July 1905 the Muswellbrook Chronicle reported that the following properties were engaged in dairying:

- B Cowan (60 cows being milked)
- C McTaggart 60 cows being milked)
- W Clarke (20 cows being milked)
- H McHugh (26 cows being milked)
- T Hogan (20 cows being milked)
- Mrs McTaggart (40 cows being milked)
- M Flanagan (20 cows being milked)
- P Flanagan (20 cows being milked)
- W Ireland (35 cows being milked)
- W Power (15 cows being milked)
- J Galvin (20 cows being milked)
- J Hannan (50 cows being milked)
- Mrs Dann (11 cows being milked)
- A Googe (12 cows being milked)
- Michael McTaggart (14 cows being milked).

4.4.2 Timber Clearing

The timber industry was common in the Upper Hunter Valley where dense timber has been felled in accessible areas and large regions of open forest thinned and/or ringbarked (Heritage Office & DUAP, 1996:46). Timber was being used for mining props and commercial sale. Timber was also used for charcoal retorts during World War II on the northern bank of Big Flat Creek. The charcoal was used to fuel early cars during the War years.

4.4.3 Rabbiting

Rabbiting was also an important industry from the beginning of the twentieth century during the Depression years, until the introduction of myxomatosis in the 1950s. Rabbits were destructive to the environment and increased erosion of the natural topsoil. Ripping for rabbits also lead to the destruction and disturbance of the natural environment. Rabbit canning and freezing works were established in Muswellbrook during the early twentieth century.

4.4.4 Saw Milling and Flour Milling

As noted at **Section 4.5.5**, the local area is known to have contained both saw mills and flour mills during the late 1800s. The historical record suggests that these industries operated on a small scale within the local area.

4.4.5 Vineyards

Vineyards existed in the Upper Hunter Valley in 1829 at Pickering and Bengalla. Vineyards declined when the larger estates were broken up and changed hands in the 1850s. Free selectors were mainly graziers and did not continue the vineyards, with the exception of the Brecht Brothers who developed a large vineyard at Rosemount near Myambit.

The industry was destroyed by an outbreak of an insect called Phylloxera in 1910 which led to vineyards being dug up to destroy the bug and prevent it from spreading. It was not until the 1960s that winemaking was redeveloped and earlier traditions revived including the development of the Penfolds estate at Dalwood (Turner 1995:22).

Vineyards were an important industry which still remain visible in the regional area, though the majority of wineries that operated out of the Wybong area have ceased operation. This includes the 'Callatoota' Estate, which was established in 1973 for the Cruickshanks family and purchased by Glencore in 2013. 'Cruickshank Wines' no longer produces from within Wybong.

4.4.6 Development of Coal Mining

Coal was known to exist in Muswellbrook and its surrounding areas since early exploration but coal was not exploited until the 1890s. Mining was small until local businessmen formed the Kayuga Coal Mining Company Limited to develop the Kayuga mine and two years later the No.1 Colliery of the Muswellbrook Coal Company was also established (Turner 1995:26). Coal mining and electricity generation have become major industries in the Muswellbrook area since the 1950s with the first wave of collieries built to meet export demand, particularly in Japan, at Liddell, Foybrook and Liddell State. In 1964 the State Electricity Commission commenced construction for the Liddell power station, a project which changed the lifestyle of Muswellbrook LGA's residents by affecting employment, population, housing, commerce and character of the locality.

The wider study area was first explored for coal by Thiess who sunk an exploratory shaft on the Hogan's property in the 1940s (Pat Hogan pers. comm. April 2006). The shaft still exists and is currently fenced off. No records regarding the shaft have been identified to date.

4.5 Notable Properties within the Wybong Area

4.5.1 'Brogheda'

'Brogheda' as it is currently known was established sometime after 1909, when the extant homestead was built in the Federation style. Prior to this time, the homestead complex is reported to have been located further to the north and on the opposite side of Wybong Creek; the earlier complex was destroyed by fire in 1909, prompting the construction of the current dwelling further south of the creek line (*Albury Banner and Wodonga Express* 15 Jan 1909: 34).

The overall property, which has since been subdivided, originally belonged to the Cox family, and was sold to the Hewitt family in the 1880s. In 1919, 'Brogheda' was an estate under the Late Thomas Hewitt who

employed two managers, Phillips and Crouch from Maitland. At that time, the property consisted of three dairies, and ran 40 horses and 675 cattle on 5,000 acres.

The location of 'Brogheda', as defined by its locally listed heritage curtilage boundary (rather than property/ownership boundary) is shown in **Figure 3.1, Figure 3.2, Figure 5.1, Figure 6.1 and Figure 6.2.**

4.5.2 The Ray Family and 'Castle Hill'

The 'Castle Hill' property originally formed part of the holdings of the Ray family. Charles and Harriette Ray are known to have lived in the Wybong area from 1906 onward, though it has previously been postulated that the family may have arrived in the area and established 'Castle Hill' as early as the 1870s (Umwelt 2006: 3.6). However, this is not evidenced in the historical record. It is also not known how many properties the Ray's held, or the extent of development that occurred on any other properties.

The property formerly featured a large dairy owned by Gordon Phillip Ray, where Ray produced cream for the Denman butter factory and cream milk for the Muswellbrook milk factory when it opened in 1908 (Umwelt 2006: 3.6).

At the time of the most recent visual inspection of the property, undertaken by Umwelt in 2006, 'Castle Hill' was recorded as comprising an undated two-roomed slab hut with a front verandah and rear skillion extension. Part of the front verandah had been infilled to access a side extension. The interior was substantially intact with lining boards and Wunderlich ceilings. There was also a detached kitchen with a brick hearth, which was in a ruinous condition in 2006. A later, undated extension of weatherboard construction, with asbestos cement cladding and brick chimney, was also identified on one side of the slab hut. Roofs were of corrugated iron, and these may have replaced timber shingles. Associated buildings included yards, dairy buildings, an outside toilet and various sheds.

A photograph of the slab hut at 'Castle Hill', dated 2006 is provided below. As discussed in **Section 1.3.3** access to the 'Castle Hill' was not granted for this study.

The location of 'Castle Hill' is shown in **Figure 3.1, Figure 3.2, Figure 5.1, Figure 5.2 and Figure 6.2.**

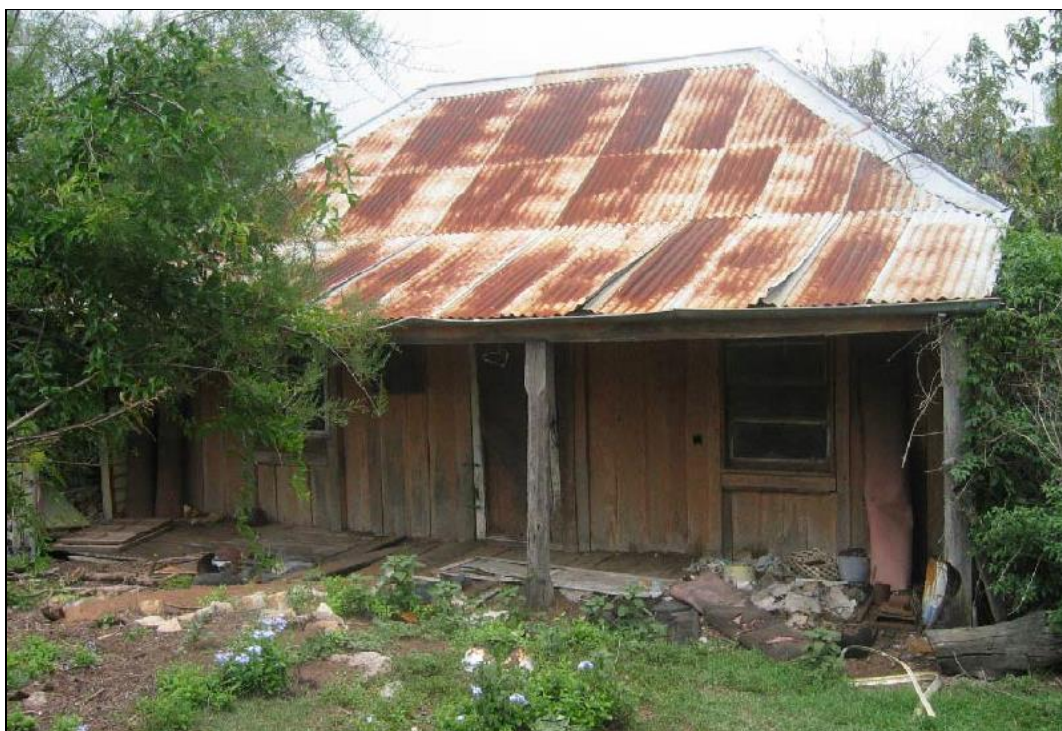


Plate 4.1 The two room slab hut located at 'Castle Hill', dated 2006

© Umwelt 2006

4.5.3 The Hogan Family Properties

The Hogan family held a number of leaseholds in the local Wybong and Muswellbrook areas by 1901. A Thomas Hogan is listed in the Sands Country Directory and Gazetteer of 1884-5 at 'Anvil Creek', 'farmer.'

The directory of the following year lists a Timothy Hogan as a 'freeholder', 'Muswellbrook' and Thomas Hogan, as 'freeholder', 'Anvil Creek.' William and Thomas Hogan are listed by the Electoral Roll of 1899-1900 at Anvil Creek, farmers. Thomas Hogan is listed in the 1907 Pastoral Section of Sands Directory (under Denman) at Wybong. The listing indicates that he was running 11 horses and 60 head of cattle.

Later listings in Sands are as follows:

Table 4.4 Summary of Hogan family property holdings from 1910 to 1932

Sands Directory Year	Name and Location Recorded	Description
1910 Directory	J.T. Hogan, Wybong	8 horses; 60 head of cattle
1915 Directory	J.T. Hogan, Wybong	13 horses; 58 head of cattle; 152 acres
1920 Directory	J.T. Hogan, Wybong	14 horses; 71 head of cattle; 719 acres.
	M. Hogan, Wybong	280 sheep; 603 acres.

Sands Directory Year	Name and Location Recorded	Description
1925 Directory	J.T. Hogan, Wybong Road, Muswellbrook	18 horses; 16 head of cattle; 191 sheep; 711 acres.
	M. Hogan, Ridge Dale, Wybong	447 sheep; 603 acres.
	P. Hogan, Wybong Road, Muswellbrook	6 horses; 40 cattle; 590 acres.
1932 Directory	J.T Hogan, Wybong Road, Muswellbrook	10 horses; 38 cattle; 740 sheep; over 1,000 acres.
	M. Hogan, Ridge Dale, Wybong	748 sheep; unknown acres.

The below descriptions and images of ‘Spring Vale’, ‘Angle Vale’ and ‘Old Angle Vale’, being dwellings/properties formerly owned and occupied by the Hogan family, have been sourced from the 2006 Umwelt assessment. Updated photos of the remnant structures/elements at the ‘Old Angle Vale’ site are dated 2018 and have been provided by Mangoola, the current owner of this property.

‘Spring Vale’

Formerly located on Wybong Road. Externally a fibre cement sheet clad weatherboard cottage with a low-pitched roof all of modern construction. Internal inspection revealed the remnants of Victorian weatherboard lining to what the owner indicates was originally a slab house. Condition was fair in 2006, in terms of the renovations. Extant original fabric was protected by the renovations. Integrity was indicative of major modification.

‘Angle Vale’

Weatherboard house with corrugated iron roof built in 1950s. The ‘Angle Vale’ homestead was the third family home built on the property and had been occupied by Gordon Hogan and Peter’s family until Peter was about two years old. When Gordon Hogan died, Peter’s family moved to ‘Old Angle Vale’.

‘Old Angle Vale’

The homestead group comprised a substantial dwelling, obviously undergoing reconstruction in a style sympathetic to the original building. Irregularly shaped, the main building occupied an area approximately 22 metres square, and comprised a timber-framed weatherboard structure with corrugated iron roof. The house proper was almost completely surrounded by a verandah roofed in bullnose corrugated iron, in which the former timber floor had not yet been replaced apart from that of the southern elevation, which had been floored and gauged.

Off the south-eastern elevation of the house proper was located a small cottage comprising one sealed room and an adjoining open room, built in the same style and also very old. This building had been built as a detached residence and had been Peter Roger’s sleeping accommodation from an early age after his family’s move from the ‘Angle Vale’ homestead. Associated with the residence at the time of inspection were a shearing shed, hay shed and machinery shed.

The dwelling, as well as the detached cottage at the ‘Old Angle Vale’ site, have since been demolished under local council approval, as outlined in the *Conservation Management Strategy* prepared by Mangoola and approved by the Department of Environment and Planning (November 2018).

However, the shearing shed and yards have been retained at the site of 'Old Angle Vale', which is located within the MCCO Additional Project Area, but outside of the MCCO Proposed Disturbance Area.



Plate 4.2 'Spring Vale', one of the dwellings owned and occupied by the Hogan family.

Photograph dated 2006. The dwelling has since been demolished.

© Umwelt 2006



Plate 4.3 'Angle Vale', one of the dwellings formerly owned and occupied by the Hogan family.

Photograph dated 2006. The dwelling has since been demolished.

© Umwelt 2006



Plate 4.4 Main dwelling at 'Old Angle Vale'.

Photograph dated 2006. The dwelling has since been demolished.

© Umwelt 2006



Plate 4.5 Detached cottage at 'Old Angle Vale'.

Photograph dated 2006. The cottage has since been demolished

© Umwelt 2006



Plate 4.6 Yards retained *in situ* at 'Old Angle Vale'

©Mangoola 2018



Plate 4.7 Shearing shed retained *in situ* at 'Old Angle Vale'

© Mangoola 2018

The locations of these properties are shown in **Figure 5.2**.

4.5.4 'Callatoota'

The property later known as 'Callatoota' was originally granted as part of 640 acres to Charles Hunter McIntosh in 1835. In 1836 the land was subdivided and three acreages were sold off to John Pike. In 1859, Pike sold some of the acreage to Henry Nowland. In 1877, Pike sold a further two acreages to John Boorer Jnr.

In 1916, 631 acres were sold by Pauline Nowland to a Henry Simpson. The Simpsons had seven sons who started a dairy. Once established, the dairy was the largest at Wybong. In later years the farm was subdivided and sold. In 1973, the homestead block was bought by the Cruickshank family, who ran a vineyard on the property until it was sold in 2013. The homestead and associated sheds were removed following the sale (refer to **Section 4.5.4**).

Images of 'Callatoota', including the homestead and associated sheds, which were taken in 2008 and prior to the removal of buildings from the property are provided below.

The location of 'Callatoota' is shown in **Figure 3.1**, **Figure 3.2** and **Figure 6.1**.



Plate 4.8 The 'Callatoota' homestead in 2008, prior to demolition.

© Hansen Bailey 2008



Plate 4.9 Sheds and storage areas within the ‘Callatoota’ property in 2008, prior to demolition.

© Hansen Bailey 2008

4.5.5 “Millville” and the Boorer Family

The Boorer family first arrived in the local area around in the 1870s; the *Official Post Office Country Directory and Gazetteer of New South Wales* 1878-9 lists ‘John Boorer, Squatter’ under Wybong. An 1884 newspaper announcement noted that Boorer purchased Nowland’s 640 acre grant in Wybong (*New South Wales Government Gazette* 17 Oct 1884). An article in *The Maitland Mercury and Hunter River General Advertiser*, dated 24 October 1885, states that Boorer purchased land from Mary Ann Nowland in January 1878 and described him as a ‘grazier’.

© NSW Land Registry Services. file 10934201.ip2

'The building is of sawn hardwood, supplied from the saw mill of Thomas Brothers close by, and contains three floors, with front and back verandah... the roof is galvanised iron, the boiler is large and of great length, conical in shape and cost or more to set it in solid cut stone, the engine of 8-horse power, and machinery, were supplied by the firm of Messrs Chapman and Sons, engineers of Sydney, and are said to be of the best description... the mill at present is in full working order, and is a great boon to the farmers and residents...'

After 1900, listings in the Sands Directory (Pastoral Section) for the Boorer family are summarised below:

- Historical Context
45

- 1907: Mrs. Boorer, Wybong; 10 horses; 250 head of cattle.
- 1910: M.A. Boorer and son, Wybong, Muswellbrook: 9 horses; 486 head of cattle.
- 1915: John Boorer, Wybong; 11 horses; 59 cattle; 460 acres.
- 1920: No listing.

In January 1913, following the death of Mrs Boorer, the 'Millville Estate' was offered up for subdivision and sale. A 1913 advertisement described the sale as comprising six lots ranging from 210 to 503 acres each (*The Maitland Daily Mercury* 29 October 1913: 6). It is understood that James Galvin purchased the lot containing a dwelling, Charlie McTaggart purchased some of the property, and John Boorer Jnr held onto the remainder.

It appears that after John Boorer's death in 1894 and the destruction of part of the property by fire in 1901, his son established a sawmill (rather than a flour mill) on the property, which he managed for his mother until her death in 1913. In January 1916 an advertisement was placed for the sale of 'J.R. Boorer's sawmill and plant'. Several months later further advertisements were made for the 'Millville Saw Mill', announcing that it was 'now working' under John Boorer and able to produce undressed timber in any quantity (*The Muswellbrook Chronicle* 7 Jun 1916: 1). It is not known when the sawmill ceased to be used, or what became of any equipment or structures associated with it.

Following his purchase of part of the land, which contained a dwelling, Galvin leased the property out, and then left it to his daughter Mrs Matt Quinn and her husband after his death. The Quinn family lived in the dwelling from the early 1920s until it was sold to the Doyle's in 1928 with 1,220 acres of land. The Doyle family held 'Millville' for 40 years until Frank Doyle's widow Beth sold a portion of it to Ivor Smith, whom later sold it to A. D. Stevenson (Doyle, N., 1984).

The 2008 oral history report by Hansen Bailey included an interview with Pat Hogan, who had lived in the area since the 1930s. Mr Hogan, when asked if 'Millville' derived its name from the presence of a mill on the property, stated:

Don't know really why it was called that. I don't know, never in my lifetime I didn't see anything like that up there. Don't know why it was named that.

(Hansen Bailey 2008:18)

With regards to the dwelling present on the property, Peter Hogan, also a local resident, stated:

Yeah, the Homestead over at what is called Millvale now, was called Millville, that's across the road here. It was owned in later years by Ron Roberts, a fellow from Sydney, but it belonged to the Doyle family - it was Helena's brother who owned that one over there, and before that it was owned by a fellow named John Boorer, who'd be in the histories. He had a mill over there, that's why that was called Millville. But when a fellow from Sydney bought it, he changed it to Millvale for his own reason I guess, and that's a slab house. The slabs aren't vertical; they're sideways over there, so it's a very interesting home. The fellow from Sydney, he did it up the same, he didn't change it much, it's had a few extensions to it, it has sandstone chimney and that sort of thing - it's a nice little house, it's not a very big house. It only has a couple of rooms.

(Hansen Bailey 2008:42)

No other mention of a mill being present anywhere on Boorer land is made in the oral history, suggesting that any structures or elements associated with this former use had been removed from the property by

the mid-20th century. No evidence of any former structures and elements potentially associated with the mill, nor any likely former structure or element locations were identified as part of the visual inspections of this property undertaken by Umwelt (2018), Ozark (2018) or EMM (2016).

The ‘homestead’ that Peter Hogan refers to is highly likely to be extant, as are the additions and extensions that were made to it; the ‘homestead’ is highly likely to be the modified ‘slab house’ present on the property and discussed in **Table 6.1**.

The location of ‘Millville’ is shown in **Figure 6.1** and **Figure 6.2**.

4.6 Historical Themes

A historical theme is a research tool, which can be used at the national, state or local level to aid in the identification, assessment and interpretation and management of heritage places (AHC 2001:1). Nine national historical themes have been identified by the Australian Heritage Commission (now the OEH). The NSW Heritage Office (now Division) has identified thirty-five historical themes for understanding the heritage of NSW.

The development of the study area is broadly reflective of the history of the local region, and can be assessed in the context of the broader historical themes defined by the NSW Heritage Office (now Division) and OEH. The themes tabulated below are relevant to the study area and locality.

Table 4.5 Historical themes relevant to the study area

National	National Sub Themes	State Themes	Local Themes/Application
1. Developing local, regional and national economies	Developing primary production	Dairying Mining	The development of local industries including dairying (major), timber clearing and saw milling, rabbiting and vineyards. The later development of coal mining, which is ongoing.
2. Building settlements, towns and cities	Making settlements to serve rural Australia Remembering significant phases in the development of settlements, towns and cities	Land tenure Early settlement	The land tenure and early settlement of the area, including the history of selection.

National	National Sub Themes	State Themes	Local Themes/Application
3. Working	Working on the land Organising workers and workplaces	Vineyards Mining Railways	As above, the development and longevity of local industries, including dairying, vineyards, timber clearing and rabbiting and general agricultural use of the land including grazing. The development of coal mining (ongoing) in the area, and the establishment of railways to facilitate local industries.
4. Educating	Establishing schools	Religion Education	Local schools and religious institutions including St Thomas Aquinas and associated convent and school, Cox's Gap School, Castle Rock School and other local institutions.
5. Governing	Defending Australia	World War II	Association between the local area and World War II, including the encouragement of returned service people to settle in the area. Use of local sites for assistance in the war effort, including Castle Rock School and the Ray's property 'Castle Hill'.
6. Developing Australia's Cultural Life	Worshipping	Religion Education Death	As above, local churches and religious organisations including St Thomas Aquinas Catholic Church and convent and St Mark's Anglican Church.

5.0 Assessment Context

This section of the HHA provides the wider assessment context, including an overview of relevant heritage listings and an outline of heritage and archaeological assessments that have been undertaken in proximity to the current study area, or within the wider local area more broadly. In some instances, these previous assessments have included portions of the current study area.

5.1 Relevant Heritage Listings

A search of relevant heritage databases and resources has been undertaken for this HHA. This includes searches of:

- The Muswellbrook LEP 2009
- The NSW Heritage Database or State Heritage Inventory, which includes places and items listed on:
 - Local Environmental Plans
 - State Agency Heritage Registers
 - Interim Heritage Orders
 - The State Heritage Register.
- The Australian Heritage Database, which includes places and items listed on:
 - The World Heritage List
 - The National Heritage List
 - The Commonwealth Heritage List
 - The Register of the National Estate
 - The List of Overseas Places of Historical Significance to Australia.

The searches undertaken revealed that no listed heritage items are located within the MCCO Additional Project Area, including within the MCCO Proposed Disturbance Area.

The search also revealed that there are two locally listed heritage items located within the wider study area but outside of the MCCO Additional Project Area. These items, being registered as 'Brogheda' and 'Wybong Cemetery', are listed within the Muswellbrook LEP 2009, and are identified within that instrument as being of local significance. Further information regarding these two listed items is provided below.

The location of listed heritage items in relation to the current study area is shown in **Figure 5.1**.

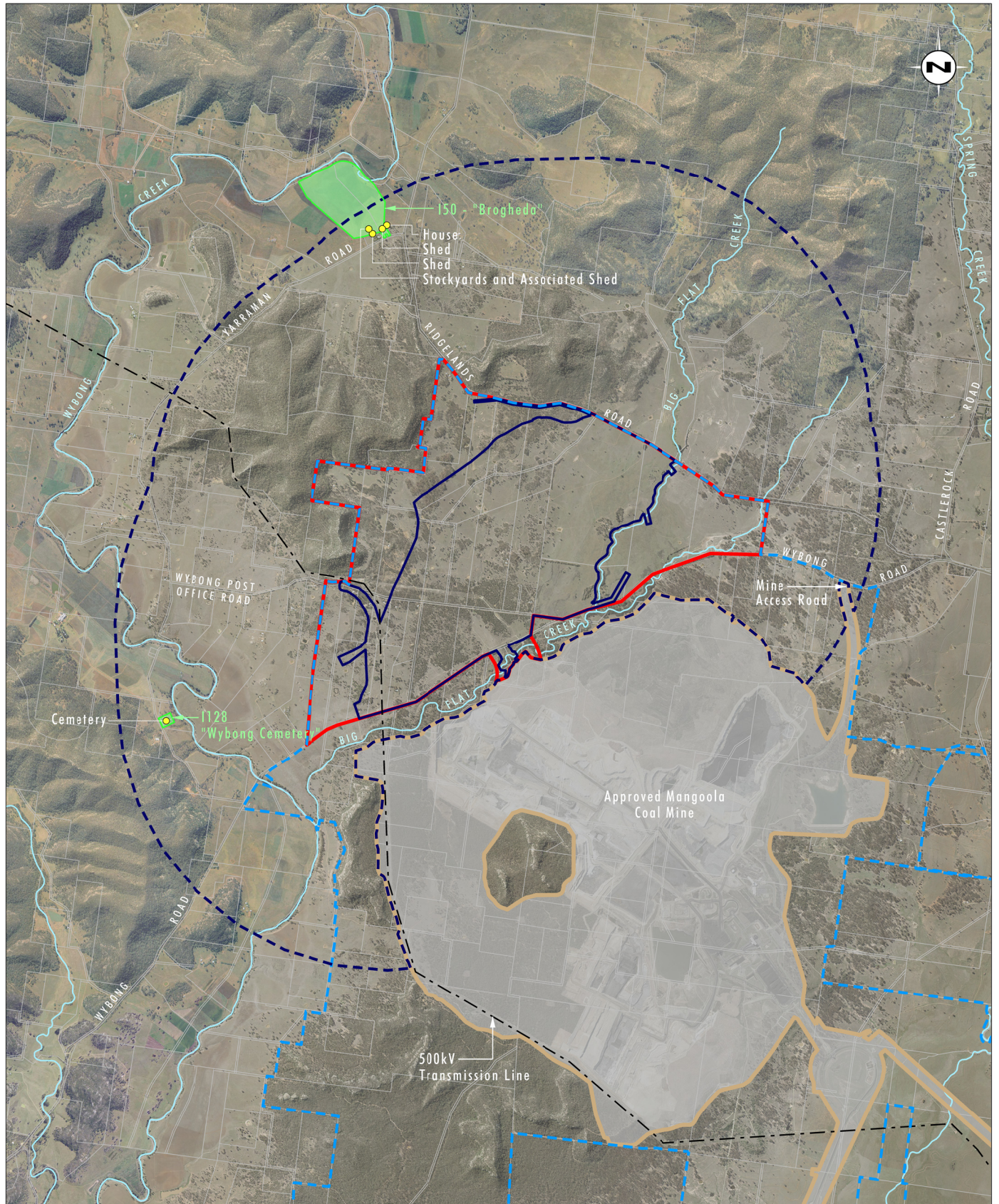


Image Source: Glencore (April 2018)

Data Source: Glencore (2019), Muswellbrook LEP (2009)

0 1.0 2.0 3.0 km

Legend

- MCCO Project Area
- Approved Mangoola Coal Mine Disturbance Area
- MCCO Additional Project Area
- MCCO Additional Disturbance Area
- Historic Heritage Study Area
- Locally Listed Heritage Item

File Name (A4): R14/4004_163.dgn
20190327 15.32

FIGURE 5.1

Listed Heritage Items in the Vicinity
of the Historic Heritage Study Area

5.1.1 'Brogheda'

'Brogheda' is a locally listed heritage item under Schedule 5 of the Muswellbrook LEP 2009 (Item ID I50). The LEP lists the location of 'Brogheda' as Lot 2-12 DP 252956 and Lot 114 DP 1008972; the corresponding mapping, however, shows 'Brogheda' to be located within parts of Lot 101 DP 1116579 and Lot 1001 DP 1162479. For the purposes of this report, the curtilage shown in the LEP heritage map is used, rather than the written lot description contained in Schedule 5 of the LEP.

The heritage listing pertains specifically to the early 1900s Federation style homestead, located at 6 Yarraman Road, and associated sheds and remnant stockyards.

An aerial view of 'Brogheda' is provided in **Plate 5.1** below, with the item's locally listed heritage curtilage shown. The listed heritage curtilage is also shown on **Figure 5.1** in relation to the study area showing it is located to the north of and well outside of the MCCO Additional Project Area.

The statement of significance included in the state heritage inventory (SHI) citation for this item states:

The building has remained in the one family for over a century and thus has considerable local significance.¹

It is noted, however, that ownership of the property has changed since the citation was authored.

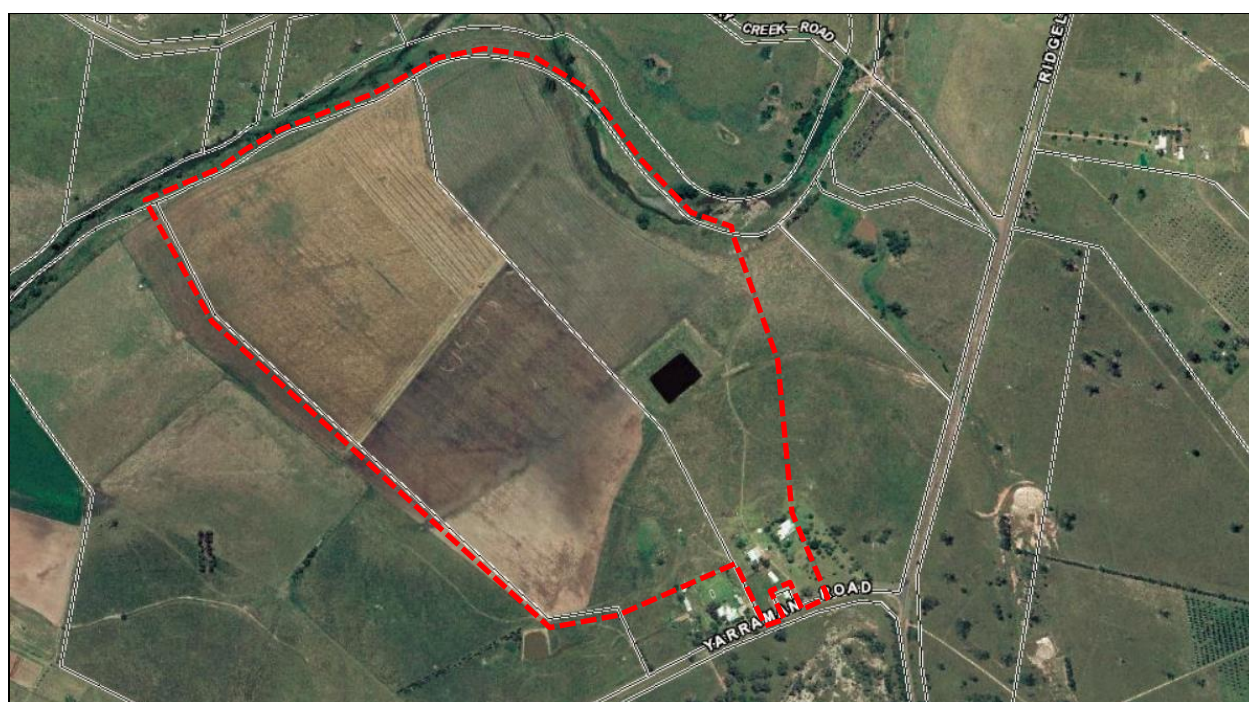


Plate 5.1 Aerial view of 'Brogheda', with locally listed curtilage shown in red.

Note the current landownership of property attached to Brogheda differs to the boundary shown in red above.

© <https://maps.six.nsw.gov.au/>

¹ <http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2120044>

5.1.2 ‘Wybong Cemetery’

Wybong Cemetery is a locally listed heritage item under Schedule 5 of the Muswellbrook LEP 2009 (Item ID I128). It comprises Lots 81-86 DP 750959 and Lot 7004 DP 93976, and was established around 1876. It contains the grave sites of a number of local historical families, including McTaggart, Maloney and Flannagan.

An aerial view of Wybong Cemetery is provided in **Plate 5.2** below, with the item’s locally listed heritage curtilage shown. The listed heritage curtilage is also shown on **Figure 5.1** in relation to the study area showing it is located to the west of and well outside of the MCCO Additional Project Area.

The statement of significance included in the state heritage inventory (SHI) citation for this item states:

Historically the cemetery has local significance for identifying the comparative spread of Irish Catholic immigration into the Upper Hunter by the late 19th century. Aesthetically the cemetery has local landscape significance for its siting and for the quality of the engraving on the headstones. Socially the cemetery has great local significance for the descendants of those buried there. Scientifically the site is of local, possibly regional significance for its potential to provide information about the number of both Catholic and Irish in the area in the closing decades of the 19th century.²



Plate 5.2 Aerial view of Wybong Cemetery, with listed curtilage shown in red

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5.2 Previous Assessments

The following assessments have been undertaken partially within or in the vicinity of the current study area. The findings and recommendations of these studies therefore have direct relevance to the current MCCO Project. All historical heritage properties, sites or elements identified as part of the previous studies

² <http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2120084>

summarised below are shown in **Figure 5.2**; it is noted that none of these properties, sites or elements have been formally listed on any statutory heritage register, including the Muswellbrook LEP 2009 or the SHR.

EJE Group, 1996, *Muswellbrook Shire Wide Heritage Study*, prepared for Muswellbrook Shire Council

In 1996 EJE Architects prepared the *Muswellbrook Shire Wide Heritage Study* on behalf of Muswellbrook Shire Council. The study was intended to update the information in the Hunter Regional Environmental Plan (Heritage) 1989.

As part of the 1996 study, no items or areas of heritage significance were mentioned or identified within the current study area.

Umwelt, 2006, *Historical Heritage Assessment – Anvil Hill Project* prepared for Centennial Hunter Pty Ltd

Umwelt prepared a Historical Heritage Assessment for the Anvil Hill Project in 2006 (Volume 7 Appendix 14 Anvil Hill Project EA). The historical research undertaken for the 2006 EA has been used, and built on, to develop the historical context for the current study area. The 2006 assessment considered the wider regional context of the Wybong locality, and its historical development in relation to nearby town centres including Muswellbrook.

To inform the 2006 assessment, Umwelt undertook an historical heritage survey of the (now) approved disturbance area; as a result of this survey, 19 non-statutory (not listed on the relevant LEP or the SHR) historical heritage sites consisting of one or more individual heritage items were identified.

Overall, the identified heritage items related to buildings constructed in the late 19th century. The survey indicated that few buildings were constructed between 1930 and 1970 because of a local decline in the economy. The majority of buildings were vernacular and constructed by local families including the Hogan's and the Ray's. A revival of construction since the 1970s was identified with the advent of hobby farms on smaller lots (Umwelt 2006, p.4.11).

The 19 non-listed historical heritage items/sites are listed in the below table.

Table 5.1 Non-listed historical heritage items identified in the 2006 Umwelt assessment

Item No.	Name	Description
Site 1	Hogan Property	Weatherboard cottage, yards, creamery, pig pens, well, hut, dam, small shed
Site 2	Spillway	Rock spillway
Site 3	Test Shaft	Mining test shaft
Site 4	Ham House 1	Slab house and dairy
Site 5	Ham House 2	Weatherboard cottage, dairy, meat house and yards
Site 6	Yarrowongah	Weatherboard cottage, dairy and sheds
Site 7	Bundabulla	Weatherboard cottage
Site 8	Fence and yards	Post and rail fencing and horse yards
Site 9	Ray Quarry	Quarry

Item No.	Name	Description
Site 10	Walker Quarry	Quarry
Site 12	Amaroo	Weatherboard cottage and outbuildings
Site 13	Charcoal retorts	Charcoal on ground surface
Site 14	Springvale	Weatherboard cottage, outbuildings and associated sawpit
Site 15	Angle Vale	Weatherboard house
Site 16	Old Angle Vale	Remnant farmstead of homestead, cottage, shearing shed, hay shed and machine shed
Site 17	Castle Hill	Extended slab hut and outbuildings
Site 18	Anvil Rock	Natural geological formation
Site 19	The Book Formation	Natural geological formation

Of the above listed items/sites, only one is located within the MCCO Additional Project Area. As noted in the above table, the site of 'Old Angle Vale' comprised a weatherboard homestead as well as a detached cottage and various sheds. The weatherboard homestead and detached cottage have been demolished under local council approval, as outlined in the 2018 *Conservation Management Strategy*. Remaining on the site *in situ* is the shearing shed and yards.

These structures are located within the MCCO Additional Project Area, but outside of the MCCO Proposed Disturbance Area. They will not be subject to direct impacts as a result of the MCCO Project, but are located in close proximity to the boundaries of the MCCO Proposed Disturbance Area.

As part of the 2006 assessment, 'Old Angle Vale' was assessed to have historical and associative significance on a local level. Neither the overall site nor its component elements were ever subject to any formal heritage listings (on either the Stage heritage register or at local level in the LEP). Based on the recognition of their local heritage value, the structures at the 'Old Angle Vale' site were comprehensively recorded as part of the *Archival Recording of Heritage Sites and Structures within Mangoola Disturbance and Blast Affection Areas*, prepared by Umwelt in 2010.

The approved removal of the principal dwelling and detached cottage has reduced the significance of the 'Old Angle Vale' site as a whole, as assessed in 2006. The approved removal of these buildings has lessened the clarity of association between the site and the Hogan family, and has lessened the historical value of the site which was originally assessed as a relatively intact homestead (rather than buildings/elements being assessed individually). In its current configuration and condition, the 'Old Angle Vale' site is not assessed to have the same level of significance as it was assessed to have in 2006, however, it is noted that the impacts of the approved removal of these structures have been mitigated by appropriately archival recording the site as required by the conditions of approval. The remnant ancillary structures associated with the site now lack a meaningful context, and their condition has deteriorated since the original recording in 2006. Based on this and noting that they are approved for removal, the ancillary structures are not considered to warrant retention on the basis of heritage significance.

The comprehensive recording of the site in 2010 provides an adequate and accurate record of the configuration and condition of the site prior to modification (principally being the approved demolition of the dwellings), and prior to deterioration in the condition of the shearing shed and yards that has since

occurred. It is also noted that as it is approved for removal and has been partially demolished, the 'Old Angle Vale' site and its component elements (including any associated recommendations) has not been included in the current applicable *Conservation Management Strategy*, which was approved by DPE in 2018.

Based on the extent to which this site has previously been assessed and approved for removal, the exclusion of the site from the current and approved *Conservation Management Strategy*, and the extent to which the remnant structures have already been archivally recorded, no further recommendations for the management of 'Old Angle Vale' are considered necessary as part of the MCCO Project. The 'Old Angle Vale' site is therefore not included in the remainder of this assessment.

None of the other identified items/sites listed within the above table are located within the current MCCO Additional Project Area. The ways in which these items/sites have been managed as part of previous project consents is discussed further below.

Umwelt, 2008, *Historical Heritage Review*, prepared on behalf of Xstrata Mangoola Pty Ltd

In 2008 Umwelt were engaged to prepare a Historical Heritage Review of modifications to an approved rail loop area, the relocation of an approved (but not yet constructed) pipeline corridor to the Hunter River and a proposed upgrade to an existing access track to the pipeline corridor within the Mangoola Open Cut Coal Mine approval area (formerly the Anvil Hill Coal Mine, approved in 2007, and located to the immediate south of the current study area).

The Review included a search of relevant heritage databases, a review of previous studies, and a site inspection of the proposed works areas. No potential historical archaeological sites or historical heritage items were identified within the assessed area, and no further historical heritage management was recommended.

Hansen Bailey, 2008 *Mangoola Coal Wybong Oral Heritage Report* prepared for Xstrata Mangoola Pty Ltd

In 2008, Hansen Bailey was engaged to prepare a historical oral history report of the Wybong Community in accordance with the conditions of the project approval for the Anvil Hill Project (PA06_0014). The report involved consultation and interviews with 13 local knowledge holders within the Mangoola Coal, 40 dBA noise contour.

The former owners/occupiers of 'Collareen' and 'Callatoota' were interviewed as part of the report; their interview transcripts have been used in the preparation of the current HHA.

Umwelt, 2010a, *Archival Recording of Heritage Sites and Structures within Mangoola Disturbance and Blast Affection Areas*, prepared on behalf of Xstrata Mangoola Pty Ltd

This archival recording followed the preparation of the 2006 Historical Heritage Assessment prepared by Umwelt for the Anvil Hill Project. Project approval was granted for the Anvil Hill Project (PA06_0014) in June 2007.

The 2006 assessment identified a total of 19 (non-listed) heritage items within the assessed area, 11 of which were to be directly impacted by the (then) proposed mining operation. The 2006 report recommended that photographic archival recording of all 19 non-listed items be undertaken prior to works commencing; this recommendation became Condition 47 of project approval PA06_0014.

The archival recording included 16 of the 19 identified non-listed items; the 'Charcoal Retorts' (Site 13), 'Castle Hill' (Site 17) and 'The Book Formation' (Site 19) were not able to be recorded in 2010 for the following reasons:

- 'Charcoal Retorts' (Site 13) were not able to be located in 2010. It was considered likely that flood episodes had washed the remains away
- 'Castle Hill' (Site 17) was not able to be recorded as the landowner did not grant access to Mangoola Coal
- 'The Book Formation' (Site 19) was identified during the preparation of the 2006 assessment from anecdotal information provided by a local family. However, a positive site identification was not possible during the archival recording undertaken by Nexus due to ambiguity in the description of the rock formation.

Three additional items of heritage value were identified during the Nexus on-site archival recording:

- Survey Mark (Site 20)
- Furnace (Site 21)
- Cottage (Site 22).

These sites were included as part of the archival record in accordance with Condition 42 of the project approval (Project Approval 06_0014).

As noted above, the only one of these identified items/sites located within the MCCO Additional Project Area is 'Old Angle Vale', which now comprises only a shearing shed and yards (the former weatherboard homestead, detached cottage and other sheds having been demolished).

Umwelt, 2010b, *Modifications to Mangoola Coal Mine Plans and Relocation of 500kV Electricity Transmission Line*, unpublished report for Mangoola Coal

Additional historical surveys were undertaken as part of the relocation of a 500 kV electricity transmission line (MOD 4) and proposed modifications to the previously approved mine plan. The area assessed was located partially within but predominately to the south of the current MCCO Additional Project Area. Three historical heritage items were identified:

- Site 20a, a derelict windmill
- Site 21a, a south aligned timber post fence
- Site 22a, a section of a former mortise and tenon timber post and one-rail fence.

All of these items were assessed to be representative of typical and common rural infrastructure, with the assessment stating that they had little research potential. As impacts to these items were assessed as unlikely, no further assessment or management was recommended.

Umwelt, 2015, *Historical heritage sites within Mangoola Coal approved disturbance area*, unpublished report for Glencore

As noted above, three additional items of heritage value were identified and recorded during the Nexus onsite archival recording undertaken within the approved disturbance area in 2010:

- Survey Mark (Site 20)
- Furnace (Site 21)
- Cottage (Site 22).

In 2015, Umwelt were engaged to provide advice regarding these items, all of which are located outside of the current study area. The 2015 advice notes that of these three items, only the 'survey mark' was able to be located in 2015, with the 'furnace' and 'timber cottage' unable to be located at their recorded locations.

The letter of advice assessed that the 'survey mark' and 'timber cottage' were of local significance, while the 'furnace', being isolated and likely out of context, was not. Overall, the advice stated that the archival recording of the items undertaken in 2010 was a sufficient record of each site, and an appropriate level of management. No further archaeological or heritage management was recommended for the three items.

EMM, 2016, *Aboriginal and Historical Cultural Heritage Assessment: Mangoola Coal Continued Operations Project Pre-Feasibility Study*, prepared for Glencore Coal Assets Australia

In November 2016, EMM undertook a prefeasibility (PFS) assessment for the MCCO Project, which was intended to inform the preliminary project design process and identify items or areas that require detailed assessment throughout feasibility.

The assessment outcomes for historical (non-Aboriginal) heritage are summarised as follows:

- No local or state listed historical heritage items were identified within the areas assessed by EMM, and no potential impacts to any historical heritage items were identified. The identified nearest listed heritage item, Wybong Cemetery, was noted as being located to the west of the assessment area, but the assessment determined that this item would not be impacted by the project.
- The assessment identified a number of potential historical items for inspection through aerial photography, and a visual survey of the project assessment footprint was carried out as part of the Aboriginal heritage survey. Most of the structures selected for inspection from aerial photography were determined in the field to have no heritage significance. Four potential non-statutory 'heritage items' were identified during the survey, and it was determined that three of these may be impacted.
- The report concluded that it was unlikely for any of the potential heritage items in the assessment footprint to meet local or state heritage listing criteria, and that there was a low degree of risk for further significant historical sites or archaeological sites to be identified in the assessment footprint; further historical research was recommended to identify if relics potentially exist in the assessment footprint.

The four non-statutory potential 'heritage items' identified during the survey are summarised in **Table 5.2**.

Table 5.2 Summary of ‘non-statutory “heritage items”’ identified during the 2016 PFS by EMM

Item and Location	Description Provided in the PFS
Item 1: House and Sheds Lot 41 DP 531030	<p><i>Item 1 is a vernacular weatherboard cottage dated to c. late nineteenth/early twentieth century identified on a rise adjacent to Big Flat Creek.</i></p> <p><i>The Cottage features a replaced corrugated iron roof and veranda. It also features later extensions to the side and rear and an original sandstone ashlar chimney and fireplace in good condition. Internal floorboards have been recently replaced.</i></p> <p><i>Outbuildings include a weatherboard outhouse, timber water tank stand and two timber sheds.</i></p> <p><i>The Item’s setting includes mature native and exotic plantings and timber fences.</i></p> <p><i>The property is currently owned by Mangoola Coal and is used to store equipment in its yards.</i></p>
Item 2: Windmill Lot 198 DP 750968 Movable Item	<p><i>Item 2 is a corrugated iron and metal windmill. It is located outside of the project assessment footprint adjacent to a small dam west of D3. Date of windmill is unknown but is likely to date to the mid twentieth century.</i></p>
Item 3: Farm Equipment – “Sunshine Harvester” Lot 41 DP 531030 Movable Item	<p><i>Item 3 is a ‘Sunshine Harvester’ or better known as a McKay Harvester after the inventor Hugh Victor McKay. Item 3 was identified adjacent to a vehicle track leading to Item 1.</i></p> <p><i>The design of the harvester was patented in 1885 and improved on during the early 1890s. There are records of the harvester being produced into the early twentieth century and used by farmers into the mid twentieth century.</i></p> <p><i>In 1911 alone 2,161 of the harvesters were manufactured at the Sunshine Harvester Works in Victoria.</i></p>
Item 4: Timber Stockyards Lot 42 DP 531030 Movable Item	<p><i>Item 4 is a timber stockyard adjacent to Wybong Road in the southern portion of the project assessment footprint. It is likely to date from the mid twentieth century.</i></p>

Glencore, 2018, *Mangoola Open Cut Conservation Management Strategy*, prepared for Mangoola Open Cut, Glencore

In November 2018, the Department of Environment and Planning approved the revised *Conservation Management Strategy* for the Mangoola Open Cut Mine. This Strategy addresses the historical heritage management issues associated with Mangoola Coal, and has been prepared to address Schedule 3, Condition 43 of PA 06_0014.

The Strategy provides an update on the status of the various heritage items/elements identified in the previous studies outlined above. This summary is provided below for reference, and has been sourced directly from the Strategy without change.

Table 5.3 Summary of the status of previously identified items, sites and elements of heritage significance

Site ID	Site Name	Description	Significance	Management
1	Hogan Property – House, Yards and Associated Structures	Ruined two room cottage with associated yard and shed	Local	Demolished
2	Hogan Property – Rock Spillway	Rock deliberately placed to form a spillway of an earth dam	Local	Demolished
3	Hogan Property – Test Shaft	A test mining shaft sunk in the 1940's for exploratory coal	Local	Demolished
4	Ruins of Ham House 1	Ruin of slab house and nearby dairy	Local	Demolished
5	Ruins of Ham House 2	Ruin of weatherboard two-room cottage with skillion verandah	Local	Demolished
6	Yarrowongah	Mid to late Victorian weatherboard cottage	Local	Demolished
7	Bundabulla	Weatherboard Victorian villa with later extensions to side and rear.	Local	Demolished
8 & 8A	Post and Rail Fences, Timber structure	Post and rail fences were found across the Mangoola Coal disturbance area concentrated along Anvil Creek	Local	Nil*
9	Ray's Quarry	Gravel quarry containing no structures	Local	Demolished
10	Walker's Quarry	Gravel quarry containing no structures	Local	Demolished
11	McLane's Property Windmill	A Comet windmill made of corrugated iron	Local	Demolished
12	Amaroo	Four room weatherboard cottage with extensions	Local	Demolished
13	Charcoal Retorts	Charcoal on ground surface	Local	Refer below
14	Springvale	Early slab hut	Local	Demolished
15	Angle Vale	Weatherboard house with corrugated iron roof	Local	Demolished
16	Old Angle Vale	Timber framed weatherboard structure	Local	Demolished

Site ID	Site Name	Description	Significance	Management
17	Castle Hill	Extended slab hut and outbuildings	Local	Refer below
18	Anvil Rock	Natural geological formation	Local	Refer below
19	The Book Formation	Natural geological formation	Local	Refer below
20	Survey Mark	Historical marked tree used for survey identification	Local	Demolished
20A	Windmill	Derelict and collapsed metal windmill and associated moveable farm equipment	Nil	No mining impacts, identified during 500kV ETL Relocation MOD
21	Furnace	A blast furnace	Nil	Demolished
21A	Timber post and eight wire fence	North to south aligned timber post and eight wire fence	Nil	No mining impacts, identified during 500kV ETL Relocation MOD
22	Cottage	Derelict timber cottage	Local	Nil*
22A	Mortise and tenon timber fence	Mortise and tenon timber post and one-rail fence	Nil	Nil, partially within RWD inundation area
23	Surveyor's Blaze Mark	European scarred tree	Nil	Cleared under PA 06_0014 approval
Note: *Sites within the disturbance boundary will be destroyed by mining when required as approved by Project Approval 06_0014.				

The heritage sites/items presented in the above table, which are not directly impacted by mining, have been identified for further management by Mangoola Coal. A summary of the applicable management measures, for these items/elements is described in the table below.

Table 5.4 Management measures for identified heritage items/elements within the *Conservation Management Strategy*

Site ID	Site Name	Impacts
13	Charcoal Retorts	<p>The charcoal retorts are located in an offset area for cultural heritage, however, have been unable to be located since the initial heritage assessment undertaken for the original EIS (note – this site has not been re-discovered and it is suspected the 2007 floods washed it away).</p> <p>Prior to any potential disturbance activities within any offset areas, a Ground Disturbance Permit must be completed. This process includes specific checks for heritage listed sites within the site GIS database.</p> <p>Should the charcoal retorts be re-identified, archival recording shall be undertaken in accordance with the requirements of Schedule 3, Condition 42 (b) of PA 06_0014.</p>

Site ID	Site Name	Impacts
17	Castle Hill	<p>Existing management measures include:</p> <ul style="list-style-type: none"> consulting with the landholder to gain access to Castle Hill to undertake a baseline dilapidation survey as required by Schedule 3, Condition 42 of PA 06_0014; undertake representative blast vibration monitoring to inform ground vibration impacts to the Castle Hill slab hut structure; and Current monitoring and modelling (by Terrock in 2018) confirms blast vibration has not exceeded the 5 mm/s limit at the Castle Hill heritage site, and is not modelled to exceed this limit for any future blasting activities. This is supported by the recent report prepared by EnviroStrata for the MCCO Project (refer to Section 8.1.2). <p>Should an agreement be reached to gain access to Castle Hill (privately owned) the following management measures shall be undertaken:</p> <ul style="list-style-type: none"> a detailed recording of the buildings and associated features to the NSW Heritage Office's standard for archival recordings of local heritage significance by a qualified heritage consultant shall be undertaken in accordance with the requirements of Schedule 3, Condition 42 (b) of PA 06_0014; a site specific historical investigation including further detailed historical research concerning the construction date and history of settlement with the property; and further assessment, monitoring and review of the structures by a qualified heritage architect with the input of a noise and vibration engineer qualified in understanding the potential impacts of blasting on historical structures. <p>If blasting results confirm 5 mm/s vibration levels have been exceeded at the representative monitoring location, the following actions will be undertaken:</p> <ul style="list-style-type: none"> contact the landholder to advise of their rights under Schedule 3, Condition 14 of PA 06_0014 to request a property investigation.

Site ID	Site Name	Impacts
18	Anvil Rock	<p>Completed management and conservation works to date include:</p> <ul style="list-style-type: none"> • archival recording completed in 2010; • specialist advice/assessment from geotechnical/engineering consultant regarding impact assessment; • six monthly site survey completed with performance reported in annual review; • blast monitoring and data review; and • visual assessment. <p>Existing management measures include:</p> <ul style="list-style-type: none"> • representative blast monitoring to inform ground vibration impacts at the structure; • limiting blast designs to stay below vibration limit; • undertake an annual review of safe blasting limits (currently 50mm/s but may be subject to change based on reviews) for rock formations and heritage structures by a suitably qualified consultant, based on an analysis of blast monitoring results and six monthly structural integrity monitoring; and • six monthly structural integrity monitoring as described in the Blast Management Plan (BMP). <p>Public access to these formations during the life of the mine shall be supervised by Mangoola Coal.</p>
19	"The Book Formation"	<p>Completed management and conservation works to date include:</p> <ul style="list-style-type: none"> • archival recording completed in 2015; • specialist advice/assessment from geotechnical/engineering consultant regarding impact assessment; • six monthly site survey completed with performance reported in annual review; • blast monitoring and data review; and • visual assessment. <p>Existing management measures include:</p> <ul style="list-style-type: none"> • representative blast monitoring to inform ground vibration impacts at structure; • limiting blast designs to stay below vibration limit; • undertake an annual review of safe blasting limits for rock formations and heritage structures (currently 50mm/s but may be subject to change based on reviews) by a suitably qualified consultant, based on an analysis of blast monitoring results and six monthly structural integrity monitoring; and • six monthly structural integrity monitoring as described in the Blast Management Plan (BMP). <p>Public access to these formations during the life of the mine shall be supervised by Mangoola Coal.</p>

As management recommendations have already been prepared and approved for the above heritage items/sites, which have been retained, no further management recommendations are required for these items/sites. These items/sites are therefore not considered within the remainder of this HHA.

Note: None of the properties, items or sites shown have been formally listed on any statutory heritage register, including the Muswellbrook LEP 2009 or the SHR

● Pre-feasibility Studies Historic "Heritage Items"
(2016 EMM Assessment)

Historical Heritage Properties, Items or Sites Identified in the Local Area as Part of Previous Heritage Assessments

6.0 Physical Context

6.1 Physical Context of the Study Area

The MCCO Project includes both the existing Approved Project Area for Mangoola Coal Mine and the MCCO Additional Project Area. The Approved Project Area is dominated by the existing mining operation, including the open cut mining area, associated infrastructure, along with areas of rehabilitated land and native vegetation.

The MCCO Additional Project Area has been used extensively for agriculture since the 1800s and is comprised of rolling grazing land and patches of native woodland. An analysis of historical aerial photography indicates that most of the area had been cleared by the 1940s. To the north and east are further areas of Mangoola owned grazing land and existing ecological offsets. Land to the north-west and west includes a parcel of forested Crown Land and private grazing properties. A small parcel of Crown land associated with a Travelling Stock Route (TSR) is located at the corner of Wybong Post Office Road and Wybong Road outside the MCCO Additional Project Area.

The topography of the MCCO Additional Project Area is characterised by lower slopes, giving way to undulating hills and rocky outcrops to the north and west. Lower topographic areas are associated with drainage lines feeding Big Flat Creek to the south. A dominant topographical feature in the surrounding landscape is the series of undulating wooded hills which occur outside and to the north of the MCCO Additional Project Area. These hills rise to a maximum height of approximately 360 metres AHD and are elevated approximately 200 metres above the surrounding area.

The MCCO Additional Project Area lies entirely within the catchment of Big Flat Creek which flows to Wybong Creek, which is part of the upper catchment of the Hunter River.

6.2 Field Survey and Visual Inspections

As outlined at **Sections 3.2 and 3.3**, the field survey of the study area and targeted visual inspections of specific properties was undertaken based on a review of:

- Previous assessments undertaken for the study area and surrounding local and regional contexts
- Information contained within the 2008 oral history collated by Hansen Bailey on behalf of Mangoola
- Information provided by the MSLFaHS
- Available historical aerial imagery and mapping.

As already noted, all but one of the 'shortlisted' properties were able to be inspected.

In addition to the targeted inspections, a general field survey was also undertaken throughout the two day site visit; this predominately involved the inspection of properties from adjacent roads, tracks or boundary fences, where possible.

Further, Aboriginal archaeological surveys of the MCCO Additional Project Area were undertaken in February and May 2018 by OzArk and the registered Aboriginal parties for the MCCO Project. OzArk identified a number of remnant infrastructure elements such as fences, a broken windmill of poor condition and general building remnants. None of these are of potential heritage significance, and are therefore not

considered to be potential historical heritage sites or items that require further investigation or assessment.

6.2.1 Properties Inspected

The 24 properties or areas (out of a 'shortlist' of 25 properties/areas) inspected as part of the targeted visual inspection are outlined in **Table 6.1**; their location, description and relevant photographs are provided. All properties inspected, and individual component elements within those properties (if identified) are shown in **Figure 6.1**.

Also included are the location, description and photographs of one potential heritage item that was identified as part of the 'general field survey' (being the agricultural equipment identified within Lot 144 DP 750968). This potential item was located within the MCCO Additional Project Area but outside of the MCCO Proposed Disturbance Area.

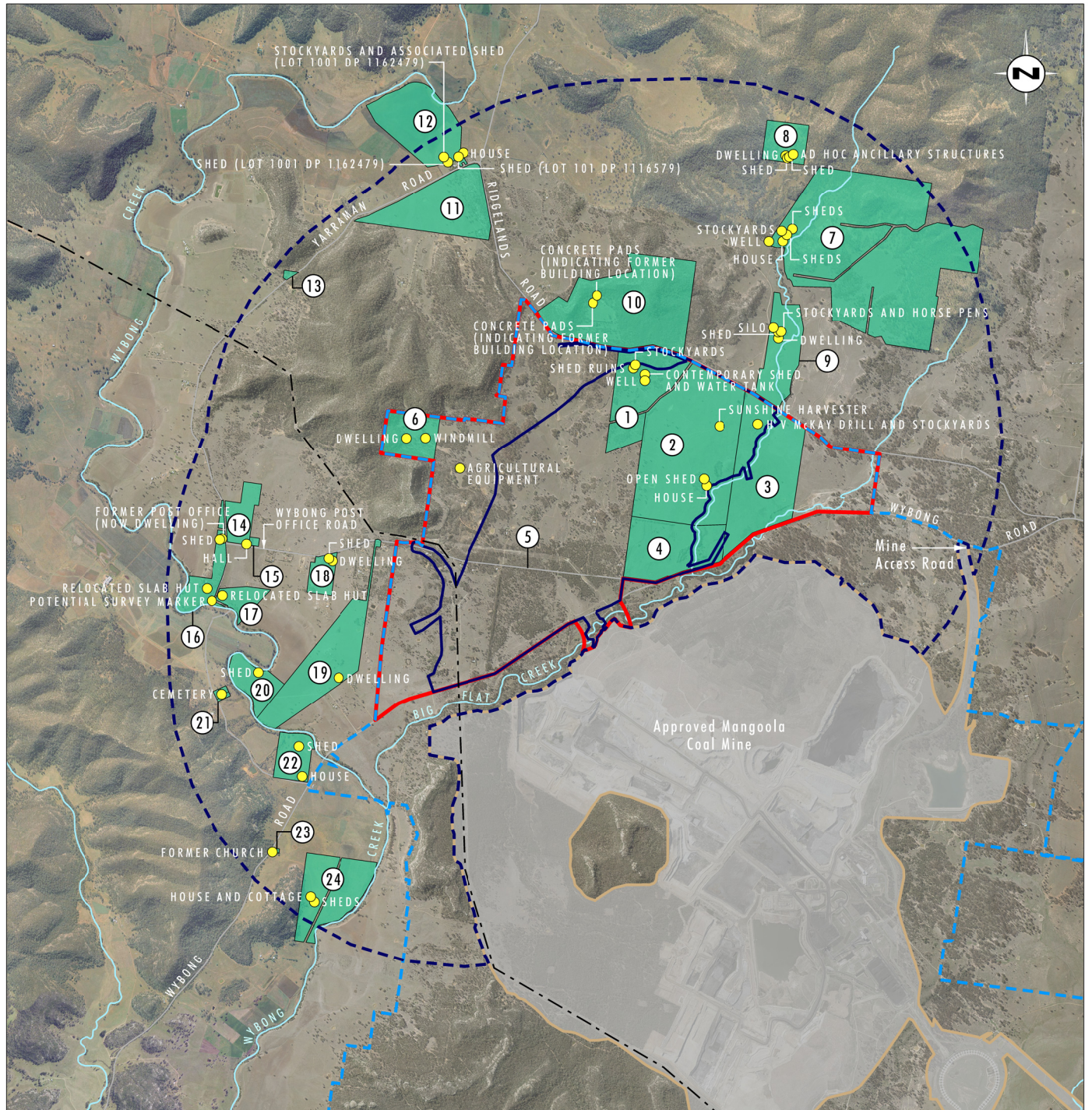


Image Source: Glencore (April 2018)
Data Source: Glencore (2019)

0 1.0 2.0 3.0km

Legend

- MCCO Project Area
 - Approved Mangoola Coal Mine Disturbance Area
 - MCCO Additional Project Area
 - MCCO Additional Disturbance Area
 - Historic Heritage Study Area
 - Properties targeted for further Assessment/Inspection
- Properties targeted for further Assessment/Inspection:



- | | |
|--|--|
| 1 'Yards and structures' | 11 'Yards and sheds' |
| 2 'Millville', structure, yard and tank' | 12 'Brogheda Ruins, Shed and Silo' |
| 3 'Structures' | 13 'Structure and shed' |
| 4 'Timber stockyards' | 14 'Dwelling, being the former Wybong Post Office and shed' |
| 5 'Wybong Post Office Road' | 15 'Wybong Public Hall' |
| 6 'Windmill' | 16 'Dwelling, being a relocated slab hut from Anvil Hill and marked tree (non-Aboriginal)' |
| 7 'Yarlett and structures' | 17 'Yarraman, being a relocated slab hut from Anvil Hill' |
| 8 'Hidden Valley' | 18 'Structure' |
| 9 'Sheds and yards' | 19 'Gurewah' |
| 10 'Clematis' | 20 'Callatoota' |
| | 21 'Wybong Cemetery' |
| | 22 'Dwelling (Rosedale) and structure (shed)' |
| | 23 'Former Church of St Thomas Aquinas' |
| | 24 'Collareen' |



FIGURE 6.1


Properties Subject to Visual Inspection
and the Location of their Component
Elements (If Identified)



Table 6.1 Results of the visual inspection



Item(s)	Description	Photographs (Umwelt 2018)
Within the MCOO Proposed Disturbance Area		
<p>“Millville”, structure, yard and tank</p> <p>Lot 41 DP 531030</p> <p><i>House</i></p> <p>GDA94 – MGA56</p> <p>Easting 282397.687</p> <p>Northing 6428522.654</p> <p><i>Open shed</i></p> <p>GDA94 – MGA56</p> <p>Easting 282372.678</p> <p>Northing 6428592.069</p> <p><i>Sunshine Harvester</i></p> <p>GDA94 – MGA56</p> <p>Easting 282531.317</p> <p>Northing 6429133.562</p>	<p>This property contains a dwelling, informally known as ‘Millville’. The dwelling presents as an early 20th century weatherboard cottage with a corrugated iron roof and wrap-around verandah that has been partially enclosed to the rear elevation; the enclosed portion of the verandah is used as a kitchen and bathroom.</p> <p>More detailed inspection of the dwelling, as well as a review of the 2008 oral history, resulted in the identification of an earlier timber slab hut encased within later fabric.</p> <p>The slab hut, which is visible in discrete areas both internally and externally, features horizontal slabs that are adze (hand) cut, and a dressed sandstone chimney that is visible from the exterior of the dwelling. The earlier slab hut has been extensively modified and substantially enclosed within the later (early 20th century) additions.</p> <p>Within the rear yard of the property is a small outhouse that features weatherboard cladding and corrugated metal roof that matches the early 20th century additions undertaken to the dwelling.</p> <p>To the northwest of the house is an open shed comprising a timber frame with a roof of corrugated metal sheeting. The open shed appears to be modern (late 20th century).</p> <p>To the north of the dwelling the ‘Sunshine Harvester’ identified during the EMM 2016 assessment was re-identified and subject to an updated inspection. The harvester was observed to be in a relatively deteriorated condition, with substantial rust evident. This style of harvester was manufactured from the early 1900s onward, with over 2,000 having been manufactured in 1911 alone.</p> <p>The location of the house, open shed and harvester are shown in Figure 6.1. This property is located within the MCOO Proposed Disturbance Area.</p>	<p>Photograph 1: Dwelling, known as ‘Millville’. Shown is the partially enclosed verandah</p>  <p>Photograph 2: Northern façade of the dwelling, with sandstone chimney visible</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>“Millville”, structure, yard and tank’</p> <p>Lot 41 DP 531030</p>		<p>Photograph 3: North western corner of the dwelling, showing the sandstone chimney and adjacent horizontal adze-cut slabs at right of frame, in contrast with the later weatherboard cladding to the left of frame</p>  <p>Photograph 4: Open shed located to the northwest of the dwelling. Shed is likely contemporary</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p data-bbox="195 258 552 321">“Millville”, structure, yard and tank’</p> <p data-bbox="195 342 394 369">Lot 41 DP 531030</p>		<p data-bbox="1647 258 2466 285">Photograph 5: Sunshine Harvester previously identified by EMM in 2016</p>  <p data-bbox="1647 1144 2466 1171">Photograph 6: Sunshine Harvester previously identified by EMM in 2016</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Yards and structures’</p> <p>Lot 655 DP 263080</p> <p><i>Contemporary shed and water tank</i></p> <p>GDA94 – MGA56</p> <p>Easting 281772.814</p> <p>Northing 6429661.699</p> <p><i>Stockyards</i></p> <p>GDA94 – MGA56</p> <p>Easting 281675.472</p> <p>Northing 6429759.996</p> <p><i>Shed Ruins</i></p> <p>GDA94 – MGA56</p> <p>Easting 281654.538</p> <p>Northing 6429725.264</p> <p><i>Well</i></p> <p>GDA94 – MGA56</p> <p>Easting 281772.291</p> <p>Northing 6429598.564</p>	<p>Complex of various elements, including a modern shed and water tank (late 20th century onward), stockyards, and ruins of a former shed structure.</p> <p>The modern shed features a metal structure with a corrugated metal roof and walls. A concrete water tank is located immediately adjacent to the shed. Internal inspection of the shed suggests it was used as an auto mechanic workshop. The shed is clearly modern (late 20th century onward) in design and construction. The water tank is likely to date from the mid-20th century onward based on its design and materials.</p> <p>The modified and weathered stockyards comprised a mixture of heavily worn timber and re-used material including contemporary metal gates, a door jamb with hinges still attached, and other miscellaneous materials. The age of the yards is not readily discernible, though the condition of timbers, use of miscellaneous materials and fixings suggests that they are likely to date from the mid-20th century onward.</p> <p>The shed ruins comprised a collapsed timber structure with corrugated metal sheeting. Based on the remnant ridge flashing still present on the collapsed corrugated roof of the shed, the roof was steeply pitched. The age of the former shed is not readily discernible, though the condition of materials and fixings suggests that it is likely to date from the mid-20th century onward.</p> <p>Construction of the stockyards and former shed (now ruins) appear to be a combination of timber post and wire and mortise and tenon methods.</p> <p>A concrete well was also identified to the south of the contemporary shed and water tank. The well was constructed of pre-cast concrete rings, and extended to a depth of approximately five metres. Pieces of worn timber were arranged around the well opening; this timber may have functioned as a barrier to the well opening (which was not capped) or as a support structure for a pulley system (no evidence of which was observed). The well is likely to be of modern (mid to late 20th century) construction based on its design, materials and condition.</p> <p>Other miscellaneous items, including discarded electrical goods (e.g. fridges), caravans, car parts, water tanks etc., were also located nearby.</p> <p>The locations of the shed and water tanks, stockyards, shed ruins and well are shown in Figure 6.1. This property is located within the MCCO Proposed Disturbance Area.</p>	<p>Photograph 1: Modern shed and water tank (late 20th century onward)</p>  <p>Photograph 2: Modified stockyards</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Yards and structures’</p> <p>Lot 655 DP 263080</p>		<p>Photograph 3: Ruins of a former shed structure</p>  <p>Photograph 4: Miscellaneous items that have been dumped on at the property</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Yards and structures’</p> <p>Lot 655 DP 263080</p>		<p>Photograph 5: Concrete well</p>  <p>Photograph 6: Internal view of the concrete well, demonstrating depth</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Structures’</p> <p>Lot 3 DP 7590</p> <p><i>H V McKay Drill and stockyards</i></p> <p>GDA94 – MGA56</p> <p>Easting 282921.632</p> <p>Northing 6429154.044</p>	<p>This property was shown on the 1974 topographic map to comprise unlabelled structures. 2008 aerial imagery also showed a dwelling and ancillary structures to be present on the property.</p> <p>The visual inspection of the property generally and the location of the former dwelling and ancillary structures specifically did not result in the identification of any extant buildings or structures (being sheds or similar), or former building locations, within the property.</p> <p>The visual inspection did, however, result in the identification of an H V McKay ‘Sun’ Seed and Fertilizer Drill and timber stockyards in the vicinity of the former dwelling and ancillary structures shown on the 2008 aerial imagery.</p> <p>The H V McKay drill was observed to be in an overall good condition, despite extensive rust and the deterioration of timber elements. Historical research has identified that this type of drill was manufactured by H V McKay ‘in great numbers from 1907’ (H V McKay Massey Harris 1954: 21).</p> <p>In association with the H V McKay drill, rusted elements of agricultural equipment were also identified. These elements were not labelled and may be home-made. They appear to comprise, at least in part, machinery used as a chaff cutter.</p> <p>To the immediate west of the H V McKay drill are timber stockyards. The yards comprise sawn cut timbers in relatively good condition, and are of timber post and wire construction. The yards appear to be relatively modern, and are likely to date to the mid to late 20th century.</p> <p>The H V McKay drill was previously identified in the 2016 EMM assessment.</p> <p>The location of the HV McKay Drill and stockyards are shown in Figure 6.1. This property is located within the MCCO Proposed Disturbance Area.</p>	<p>Photograph 1: H V McKay ‘Sun’ Seed and Fertilizer Drill</p>  <p>Photograph 2: H V McKay ‘Sun’ Seed and Fertilizer Drill</p> 



Item(s)	Description	Photographs (Umwelt 2018)
‘Structures’ Lot 3 DP 7590		<p>Photograph 3: Detail of the H V McKay ‘Sun’ Seed and Fertilizer Drill</p>  <p>Photograph 4: Unlabelled agricultural equipment located immediately adjacent to the ‘Sun’ drill</p> 



Item(s)	Description	Photographs (Umwelt 2018)
‘Structures’ Lot 3 DP 7590		<p>Photograph 5: Timber stockyards located to the west of the ‘Sun’ drill</p>  <p>Photograph 6: Detail of livestock ramp and timber stockyards located to the west of the ‘Sun’ drill</p> 

Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Timber stockyards’</p> <p>Lot 42 DP 531030</p> <p><i>Stockyards</i></p> <p>GDA94 – MGA56</p> <p>Easting 283176.455</p> <p>Northing 6431020.536</p>	<p>These timber stockyards were identified during the 2016 EMM assessment, and were inspected and recorded again as part of the targeted visual inspections undertaken as part of the current HHA.</p> <p>There were obvious differences observed in the configuration of the yards between the EMM’s 2016 site photos and the January 2018 inspection:</p> <ul style="list-style-type: none"> • Large portions of the yards have been removed since the 2016 inspection; • The remaining timbers have, where present, become detached from support posts. The structure is in a general state of disrepair; • The early layout of the yards is no longer readily discernible. <p>The yards feature a combination of post and wire and mortise and tenon construction. The timbers used are round beams that have not been cut.</p> <p>The 2016 EMM assessment stated that the yards were likely to date from the mid-20th century; the visual inspection undertaken by Umwelt suggests that the yards are likely to date from the mid to late 20th century given their condition and lack of wear/deterioration that would indicate the yards to be of a greater age. They are not visible in the 1930 aerial.</p> <p>The location of the stockyards is shown in Figure 6.1. This property is located within the MCCO Proposed Disturbance Area.</p>	<p>Photograph 1: Timber stockyards</p>  <p>Photograph 2: Detail view of timber stockyards</p> 



Item(s)	Description	Photographs (Umwelt 2018)
Wybong Post Office Road	<p>Wybong Post Office Road is a sealed road that extends from Yarraman Road in the west to Wybong Road in the east, with an approximate length of 4.5 kilometres.</p> <p>The road has a modern asphalt and bitumen surface, with no formal gutters or road verge.</p> <p>It is considered highly likely that the road was originally an unsealed (most likely dirt) track prior to modern sealing and road maintenance works.</p> <p>The location of Wybong Post Office Road is shown in Figure 6.1.</p>	<p>Photograph 1: Wybong Post Office Road, facing east</p>  <p>Photograph 2: Wybong Post Office Road, facing east</p> 



Item(s)	Description	Photographs (Umwelt 2018)
Within the MCCO Additional Project Area (but outside of the MCCO Proposed Disturbance Area)		
<p>‘Windmill’ Lot 198 DP 750968</p> <p><i>Dwelling</i> GDA94 – MGA56 Easting 279342.247 Northing 6429008.760</p> <p><i>Windmill</i> GDA94 – MGA56 Easting 279535.649 Northing 6429010.872</p>	<p>This property was targeted for inspection based on the findings of the 2016 EMM assessment.</p> <p>A modern dwelling was observed on the property which, based on the materials used and condition of the structure, is likely to date from the late 20th century.</p> <p>The windmill identified in the 2016 EMM assessment was re-inspected. The windmill is a Southern Cross windmill; Southern Cross manufactured windmills from 1876 onward. From 1903 onward, windmills were made of steel rather than wood; the ‘Southern Cross’ brand name was only applied to windmills produced by the company after 1903.</p> <p>The size of the windmill, coupled with its design, indicated that it is a Southern Cross Z model; this model was manufactured from 1930-1953. Within this period, Southern Cross manufactured just over 110,000 windmills of this style (https://www.engineersaustralia.org.au/portal/system/files/engineering-heritage-australia/nomination-title/Southern_Cross_Windmill.pdf).</p> <p>The location of the dwelling and windmill are shown in Figure 6.1. This property is located within the MCCO Additional Project Area, but outside of the MCCO Proposed Disturbance Area.</p>	<p>Photograph 1: Modern dwelling located within Lot 198 DP 750968</p>  <p>Photograph 2: Internal view of the modern dwelling located within Lot 198 DP 750968</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Windmill’</p> <p>Lot 198 DP 750968</p>		<p>Photograph 3: Southern Cross Z windmill</p>  <p>Photograph 4: Detail view of the southern Cross Z windmill</p> 

Item(s)	Description	Photographs (Umwelt 2018)
<p>Agricultural Equipment</p> <p>Lot 144 DP 750968</p> <p><i>Equipment</i></p> <p>GDA94 – MGA56</p> <p>Easting 279884.328</p> <p>Northing 6428700.851</p>	<p>This equipment was identified as part of the ‘general field survey’ (i.e. was not targeted for inspection).</p> <p>Whilst en-route to Lot 198 DP 750968 (‘Windmill’), various pieces of agricultural equipment were identified within an open field. This comprised:</p> <ul style="list-style-type: none"> • A Massey – Ferguson combined cultivator drill; • Non-branded disc cultivators or ploughs. <p>As ‘Massey-Ferguson’ was not established until 1953, this equipment is likely to date to the mid to late 20th century. The equipment was observed to be rusted but in generally sound condition.</p> <p>The location of the agricultural equipment is shown in Figure 6.1. This equipment is located within the MCCO Additional Project Area, but outside of the MCCO Proposed Disturbance Area.</p>	<p>Photograph 1: Massey-Ferguson combined cultivator drill</p>  <p>Photograph 2: Disc ploughs or cultivators located near to the drill</p> 



Item(s)	Description	Photographs (Umwelt 2018)
Within the wider study area		
<p>‘Brogheda Ruins, Shed and Silo’ Part of Lot 101 DP 1116579 and Part of Lot 1001 DP 1162479</p> <p><i>House</i> GDA94 – MGA56 Eastings 279920.285 Northings 6431923.41</p> <p><i>Shed (Lot 101 DP 1116579)</i> GDA94 – MGA56 Eastings 279870.076 Northings 6431882.798</p> <p><i>Shed (Lot 1001 DP 1162479)</i> GDA94 – MGA56 Eastings 279762.748 Northings 6431828.609]</p> <p><i>Stockyards and associated shed (Lot 1001 DP 1162479)</i> GDA94 – MGA56 Eastings 279720.374 Northings 6431881.302</p>	<p>The locally heritage listed ‘Brogheda’ homestead site comprises a 1903 dwelling in the Federation style, as well as associated ancillary structures and elements including numerous sheds and a discrete area of stockyards.</p> <p>The dwelling is of masonry construction, and is generally of sound condition. There is, however, evidence of cracking within discrete areas of the house; cracks are visible on walls both internally and externally.</p> <p>The extant shed structures across both of the allotments comprise adze (hand) cut timber elements. Based on the appearance and condition of the timbers, and the age of the property, the sheds are likely to date from the early 20th century.</p> <p>The stockyards comprise metal gates and sawn cut timbers, and are predominately of post and wire construction. The stockyards appear to date from the late 20th century, with the overall structure failing as a result of disuse and the removal of discrete timber elements over time.</p> <p>The locations of the house, sheds, and stockyards are shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: ‘Brogheda’ homestead, constructed in 1903</p>  <p>Photograph 2: Early 20th century shed located within the ‘Brogheda’ homestead. Formerly used as shearing sheds and general storage. View of the southern elevation (Lot 101 DP 1116579)</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Brogheda Ruins, Shed and Silo’ Part of Lot 101 DP 1116579 and Part of Lot 1001 DP 1162479</p>		<p>Photograph 3: Western elevation of the early 20th century shed (Lot 101 DP 1116579)</p>  <p>Photograph 4: Western elevation of early 20th century shed located within Lot 1001 DP 1162479</p> 

Item(s)	Description	Photographs (Umwelt 2018)
‘Brogheda Ruins, Shed and Silo’ Part of Lot 101 DP 1116579 and Part of Lot 1001 DP 1162479		<p>Photograph 5: Detail of western elevation of early 20th century shed located within Lot 1001 DP 1162479</p> 
		<p>Photograph 6: Stockyards within Lot 1001 DP 1162479. Yards appear to be relatively modern (mid to late 20th century)</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Brogheda Ruins, Shed and Silo’</p> <p>Part of Lot 101 DP 1116579 and Part of Lot 1001 DP 1162479</p>		<p>Photograph 7: Shed associated with stockyards within Lot 1001 DP 1162479. Shed is of adze (hand) cut timber slab construction and appears to date from the early 20th century</p>  <p>Photograph 8: Detail of the shed associated with stockyards within Lot 1001 DP 1162479</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Wybong Cemetery’ Lot 7004 DP 93976, Lot 80, 81, 82, 83, 84, 85, 86 DP 7509696</p> <p><i>Cemetery</i> GDA94 – MGA56 Eastings 277464.235 Northings 6426402.321</p>	<p>The locally heritage listed Wybong Cemetery was dedicated in March 1877. It contains the graves of members of notable local families, including the McTaggart, Thornton, Moloney, Boorer and Alcorn families. It is a locally listed heritage item under Schedule 5 of the Muswellbrook LEP 2009.</p> <p>It contains headstones and grave markers that are predominately made of stone, though marble elements are also present. The burials date from the 1870s onwards, and the condition and headstones/grave marker vary from very poor (cracked and/or worn) to excellent (newer graves).</p> <p>The location of the cemetery is shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: General view of the Wybong Cemetery, facing southeast</p>  <p>Photograph 2: Indicative headstone within the Wybong Cemetery</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Wybong Public Hall’ Lot 100 DP 1111213</p> <p><i>Hall</i> GDA94 – MGA56 Eastings 277716.08 Northings 6427932.069</p>	<p>The Wybong Public Hall is a community hall that was constructed in 1924 and has been in continuous use since that time. It is located immediately adjacent and with a frontage to Wybong Post Office Road.</p> <p>The hall has strong associations with multiple generations of families local to the area, including the Hogan, Ray, McTaggart, Flanagan, Payne and Smith families; members of these families have all served on the hall’s committee, which was established in 1924.</p> <p>The hall features a timber frame construction with corrugated metal sheeting used for the walls and the roof. The flooring is timber. The principal hall form has a pitched roof, and is constructed on brick piers. The secondary spaces to the north of the principal hall form, which are believed to be original, are of a similar construction though the northernmost portion of the building is constructed directly on a concrete slab.</p> <p>The hall also has associated yard space to the east and south, including a modern playground.</p> <p>The location of the hall is shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: Southern elevation of the Wybong Public Hall</p>  <p>Photograph 2: Internal view of the hall, taken within the principal hall form (pitched roof visible)</p> 



Item(s)	Description	Photographs (Umwelt 2018)
'Wybong Public Hall' Lot 100 DP 1111213		<p>Photograph 3: Internal view of the hall, facing towards the southern elevation</p> 
		<p>Photograph 4: Wooden board fixed to the eastern internal wall</p> 


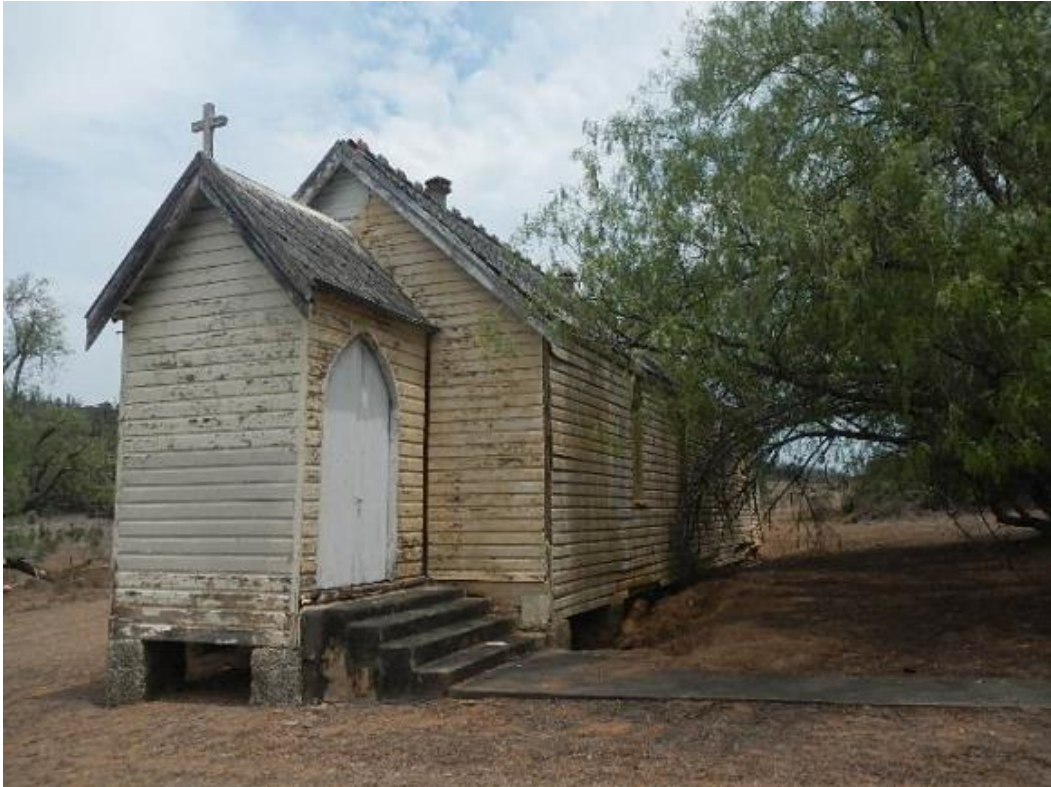
Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Yarlett and structures’ Lot 122 DP 585122</p> <p><i>House</i> GDA94 – MGA56 Easting 283176.455 Northing 6431020.536</p> <p><i>Sheds</i> GDA94 – MGA56 Easting 283272.911 Northing 6431145.679</p> <p><i>Sheds</i> GDA94 – MGA56 Easting 283216.542 Northing 6431085.324</p> <p><i>Stockyards</i> GDA94 – MGA56 Easting 283164.1 Northing 6431124.974</p> <p><i>Well</i> GDA94 – MGA56 Easting 283035.012 Northing 6431018.439</p>	<p>Early 20th century homestead comprising weatherboard cottage in original condition, stockyards, fences, and sheds. The overall homestead complex is believed to date from c. 1914. The current owners recall a bill of sale dated 1914 referring to the weatherboard cottage as ‘partially finished’ (LeBretons, pers. comm. 2018).</p> <p>Also present on the property is a well (not inspected closely due to safety reasons).</p> <p>Sheds, stockyards and fencing within the property demonstrate:</p> <ul style="list-style-type: none"> • Timber post and wire construction • Mortise and tenon construction • Adze-cut (hand-cut) timbers used in fencing and general construction (sheds) • Use of round (uncut) timber in general construction (fences, stockyards and sheds) • Use of corrugated metal for roofing and walls. <p>The sheds present comprised a mixture of materials and construction methods, as outline above. The current owners, being Catherine and Michael LeBreton who have lived at the property since the 1970s, stated that they have made piecemeal repairs to the various structures within the property over time.</p> <p>In undertaking these repairs, materials (including timber and nails) already present at the property were re-used as required. It is therefore not possible to determine the precise age of the ancillary structures and elements within the property due to the variability of materials used and ad hoc construction episodes.</p> <p>The well present on the property is located in association with a drainage line, and was not able to be inspected closely due to safety concerns, including the presence of electrified fencing. The entrance of the well is lined with timber slabs that are held together with wire. The LeBretons were not able to confirm the age of the well.</p> <p>Also present on the property was a H V McKay Pty Ltd ‘Sunshine Header- Harvester’. Based on its appearance it is likely to date from the 1930s. The harvester was in relatively poor condition, and heavily rusted.</p> <p>The location of the house, sheds, stockyards and well are shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: Early 20th century cottage at ‘Yarlett’. The eastern elevation is shown</p>  <p>Photograph 2: Sheds and ancillary structures located within the property, which range in date from the early to late 20th century</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Yarlett and structures’</p> <p>Lot 122 DP 585122</p>		<p>Photograph 3: Shed located within the property which is partially constructed of adze (hand) cut timber slabs. The shed is highly modified and comprises material and construction phases likely to range between the early and late 20th century</p>  <p>Photograph 4: Stockyards located within the property, which range in likely age from the early to late 20th century</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Yarlett and structures’</p> <p>Lot 122 DP 585122</p>		<p>Photograph 5: Well (likely early 20th century) located within the property</p>  <p>Photograph 6: H V McKay Pty Ltd ‘Sunshine Header- Harvester’ present within the ‘Yarlett’ property</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Yarraman, being a relocated slab hut from Anvil Hill’</p> <p>Lot 2 DP 240086</p> <p><i>Relocated Slab Hut</i></p> <p>GDA94 – MGA56</p> <p>Easting 277472.582</p> <p>Northing 6427403.426</p>	<p>This property was labelled on the 1974 topographic map as ‘Yarraman’, though no development was discernible on the 1930 aerial.</p> <p>The principal (inhabited) dwelling at this property was constructed within the last 10 years, as was the associated garage.</p> <p>Present on the property was a timber slab hut with hand (adze) cut vertical timbers and a corrugated iron roof. The current property owner, Thomas Henderson, stated that he had relocated the slab hut from a property located at Anvil Hill, which formerly belonged to the Ray family. Though the Ray family is quite well known locally, the historical record contains very little information regarding their settlement and early years in the area.</p> <p>Mr Henderson stated that, to his knowledge, the hut was an early dwelling of the Ray’s, which they had built themselves around 1880.</p> <p>Mr. Henderson stated that the hut was moved when Centennial Coal purchased the land around Anvil Hill in the early 2000s. The hut was moved in its entirety, with the exception of the verandah which was re-constructed following its placement at ‘Yarraman’.</p> <p>A former grain hut, similarly built of vertical, hand (adze) cut timber slabs is located at the property across the street. Both Mr. Henderson and the owners of the property across the road stated that the huts both belonged to the Ray’s and were located in proximity to each other prior to relocation.</p> <p>The location of the hut is shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: Relocated timber slab hut, believed to date from the late 1800s</p>  <p>Photograph 2: Relocated timber slab hut, believed to date from the late 1800s</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>'Yarraman, being a relocated slab hut from Anvil Hill'</p> <p>Lot 2 DP 240086</p>		<p>Photograph 3: Internal view of the slab hut, showing the hand (adze) cut timbers</p>  <p>Photograph 4: Internal view of the slab hut, showing the roof structure</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Former Church of St Thomas Aquinas’</p> <p>Lot 1 DP 910116</p> <p><i>Former Church</i></p> <p>GDA94 – MGA56</p> <p>Easting 277978.173</p> <p>Northing 6424792.588</p>	<p>The former Church is a free-standing single storey timber framed and weatherboard clad building located adjacent to Wybong Road in the southwest of the study area. It is raised on low stone blocks or timber stumps. The main body of the Church is an elongated rectangle, and has a high pitched roof that is clad in asbestos slate shingles with decorative terracotta ridge capping. Metal ventilators are set into the ridgeline.</p> <p>The Church is in poor condition, and has clearly been subject to the impacts of inclement weather, white ants/termites, and neglect.</p> <p>The location of the former church is shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: Southern elevation of the Church, with issues with condition visible</p>  <p>Photograph 2: Northern and western elevations of the Church</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Former Church of St Thomas Aquinas’</p> <p>Lot 1 DP 910116</p>		<p>Photograph 3: Internal view of the Church, facing south</p> 
		<p>Photograph 4: Internal view of the Church, facing north</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Callatoota’ Lot 72 DP 631197</p>	<p>The ‘Callatoota Estate’ is well evidenced in the historical record, and was included in the 2008 oral history report prepared by Hansen Bailey. ‘Callatoota’ was sold to Mangoola in 2013.</p> <p>The targeted visual inspection undertaken for this HHA, however, has shown that all former buildings have been removed from the site with the exception of a contemporary metal storage shed, concrete water tank, sections of fencing, and the remnants of small shed structures.</p> <p>Neither the metal shed, nor the remnant elements throughout the inspected area were observed to be particularly old, with all associated fabric appearing modern (late 20th century).</p> <p>The general location of the ‘Callatoota’ property is shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: The former ‘Callatoota Estate’ site, with the contemporary water tank and metal shed shown</p>  <p>Photograph 2: The former ‘Callatoota Estate’ site, now almost completely vacant</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Collareen’</p> <p>Lot 6 DP 750969</p> <p><i>House and Cottage</i></p> <p>GDA94 – MGA56</p> <p>Easting 278365.989</p> <p>Northing 6424340.011</p> <p><i>Sheds</i></p> <p>GDA94 – MGA56</p> <p>Easting 278403.564</p> <p>Northing 6424286.254</p>	<p>‘Collareen’ comprises a number of buildings, including:</p> <ul style="list-style-type: none"> • An early to mid-20th century cottage, currently used as the primary dwelling • A (likely) early 20th century timber slab cottage, which has been modified and appears to be used as a secondary dwelling or ‘granny flat’. This original brick chimney has been retained • Multiple sheds, which appear to range in date from the early to mid-20th century through to the early 21st century. These sheds feature various building materials, including timber, corrugated iron, and fibro • Various stockyards, including circular horse yards. These are made of both timber and metal, and appear modern. <p>The locations of the house and cottage and sheds are shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: Early to mid-20th century dwelling</p>  <p>Photograph 2: Early to mid-20th century dwelling, rear elevation, with the earlier (possible early 20th century) modified cottage behind. The brick chimney is visible</p> 

Item(s)	Description	Photographs (Umwelt 2018)
		<p>Photograph 3: Front elevation of the earlier (possible early 20th century) modified cottage</p>  <p>Photograph 4: Various sheds present at 'Collareen'</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Dwelling (Rosedale) and structure (shed)’</p> <p>Lot 18 DP 750969</p> <p><i>House</i></p> <p>GDA94 – MGA56</p> <p>Eastings 278276.39</p> <p>Northings 6425565.907</p> <p><i>Shed</i></p> <p>GDA94 – MGA56</p> <p>Eastings 278242.894</p> <p>Northings 6425869.541</p>	<p>The property informally known as ‘Rosedale’ comprises:</p> <ul style="list-style-type: none"> • A former dwelling, which may have originally dated from the early 20th century but which has been extensively modified and re-clad. This dwelling was observed to be in very poor condition, and partially demolished • Multiple sheds and ancillary structures including a chicken coup • Stockyards • A large shed, possibly used for hay storage located a considerable distance (around 230 metres) to the north of the other structures and dwelling. <p>The sheds, ancillary structures and stockyards all appear to date from the mid-20th century onward.</p> <p>The larger shed to the north is constructed of a timber frame with corrugated iron sheeting for the roof and walls. Based on the Lysaght maker’s marks on the sheeting (which read ‘Lysaght Australia’), the corrugated metal was produced after 1921. The structure of the shed is predominately composed of round (un-cut) timber, and sawn cut timber.</p> <p>The shed also features hand (adze) cut timber flooring in discrete areas, and hand (adze) cut timber has also been fixed to the shed walls, between the corrugated sheeting and the floor surface.</p> <p>The shed is visible in the 1930 aerial. This, coupled with the materials used in its construction, suggest that it is likely to date from the early 20th century.</p> <p>The locations of the house and shed are shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: The former dwelling at ‘Rosedale’, which was in very poor condition and partially demolished at the time of inspection</p>  <p>Photograph 2: The former dwelling at ‘Rosedale’, which was in very poor condition and partially demolished at the time of inspection</p> 

Item(s)	Description	Photographs (Umwelt 2018)
<p>'Dwelling (Rosedale) and structure (shed)'</p> <p>Lot 18 DP 750969</p>		<p>Photograph 3: Possible hay shed, likely constructed in the early-20th century, facing east</p>  <p>Photograph 4: Internal view within the likely hay shed, facing east</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Dwelling (Rosedale) and structure (shed)’</p> <p>Lot 18 DP 750969</p>		<p>Photograph 5: Internal view within the likely hay shed, facing northwest</p> 
		<p>Photograph 6: Internal view within the likely hay shed, showing materials used</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Dwelling (Rosedale) and structure (shed)’</p> <p>Lot 18 DP 750969</p>		<p>Photograph 7: Stockyards within the ‘Rosedale’ property</p>  <p>Photograph 8: Shed within the ‘Rosedale’ property</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Dwelling, being the former Wybong Post Office and shed’</p> <p>Lot 122 DP 665563</p> <p><i>Former Post Office (now dwelling)</i></p> <p>GDA94 – MGA56</p> <p>Eastings 277468.207</p> <p>Northings 6427986.463</p> <p><i>Shed</i></p> <p>GDA94 – MGA56</p> <p>Eastings 277445.64</p> <p>Northings 6427977.914</p>	<p>This dwelling was targeted for inspection as it is visible on both the 1974 topographic map and the 1930 aerial. The detailed inspection revealed that this dwelling was originally the local Wybong post office; located on Wybong Post Office Road.</p> <p>There is little mention of a Wybong Post Office in the historical record, though the establishment of one is mentioned as early as 1899 (Muswellbrook Chronical 17/0/1899: 2). Available records state that the post office was opened by a ‘Mr McHugh’, which could be a reference to either James or Joseph McHugh, both of which had settled in the area by 1885 (refer Table 4.3). When this particular post office ceased to be used as such is not clear in the historical record.</p> <p>In constructing the additions and renovations that have been undertaken to the post office in later years, evidence of the original building structure, which is contained within later fabric, was identified by the current property owner, who stated that:</p> <ul style="list-style-type: none"> the original post office building was constructed of timber cladding and corrugated iron over a timber frame the roof structure was constructed of round (uncut) black pine, with joints in the structure hand (adze) cut fabric of the original structure remains <i>in situ</i> within the wall and roof cavities of the current dwelling. <p>With the exception of small sections of roof form (including gable ends) of original post office building, the earlier building is no longer externally visible or readily discernible.</p> <p>Also present at the property is a shed, which is likely to have been a shed or ancillary structure associated with the earlier post office. The shed is constructed of corrugated metal over a timber frame. Timbers used include round (uncut) timber beams and hand (adze) cut timber pieces.</p> <p>Externally, the shed is almost completely obscured by later ancillary structures erected by the current property owner.</p> <p>The locations of the dwelling and shed are shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: View of the western elevation of the dwelling, showing a gable end of the original post office roof</p>  <p>Photograph 2: View of the southern elevation of the dwelling, showing a gable end of the original post office roof and later cladding</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Dwelling, being the former Wybong Post Office and shed’</p> <p>Lot 122 DP 665563</p>		<p>Photograph 3: External view of the shed, which is believed to date from the same period as the original post office. The earlier shed structure is to the right of frame (behind the boat), with a later shed to the left of frame</p>  <p>Photograph 4: Internal view within the shed showing the timber frame</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Dwelling, being a relocated slab hut from Anvil Hill and marked tree (non-Aboriginal)’</p> <p>Lot 1 DP 240086</p> <p><i>Relocated Slab Hut</i></p> <p>GDA94 – MGA56</p> <p>Eastings 277310.603</p> <p>Northings 6427474.702</p> <p><i>Marked Tree (non-Aboriginal)</i></p> <p>GDA94 – MGA56</p> <p>Eastings 277361.885</p> <p>Northings 6427350.468</p>	<p>This property was labelled on the 1974 topographic map with unlabelled points indicating structures, but no structures were visible in the 1930 aerial.</p> <p>Inspection of the property did not reveal any structures or buildings that post-dated the mid-20th century. The only exception to this was a relocated timber slab hut with hand (adze) cut vertical timbers. This hut is believed to be the ‘grain hut’ that was relocated from the former Ray property at Anvil Hill, in association with the dwelling hut located on the opposite side of the street at Mr. Henderson’s property ‘Yarraman’.</p> <p>The hut features hand (adze) cut timbers, a shingle roof, and was elevated on timber piers, similar to the dwelling hut mentioned above.</p> <p>To the south of the property and adjacent to Wybong Creek, was a tree with letters carved into its bark. The non-Aboriginal carving was identified in the trunk of a mature eucalyptus tree; the tree had fallen some time prior to inspection, and now lays horizontally on the ground surface.</p> <p>The non-Aboriginal carving was difficult to discern owing to the condition of the tree, but appears to read (see Photograph 4):</p> <p>BM</p> <p>CS</p> <p>No further information pertaining to the non-Aboriginal carved letters has been found within the historical record, and the current property owners were unsure as to its origin; based on its physical properties, including the carving being made to surface bark, being shallow, and not being of a typical survey blaze/mark typology (such as an arrow, cross, shoe-shaped mark, or numbers or letters related to a parish), it is unlikely to be a surveyor’s mark or blaze.</p> <p>The locations of the hut and marked tree (non-Aboriginal) are shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: External view of the relocated timber slab hut (grain hut), rear façade</p>  <p>Photograph 2: External view of the relocated timber slab hut (grain hut), front façade</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Dwelling, being a relocated slab hut from Anvil Hill and marked tree (non-Aboriginal)’</p> <p>Lot 1 DP 240086</p>		<p>Photograph 3: Internal view of the relocated timber slab hut (grain hut)</p>  <p>Photograph 4: Marking (non-Aboriginal) on fallen eucalyptus tree</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Gurewah’</p> <p>Lot 11 DP 240086</p> <p><i>Dwelling</i></p> <p>GDA94 – MGA56</p> <p>Eastings 278653.261</p> <p>Northings 6426570.033</p>	<p>The property was indicated in the 1974 topographic map and visible in the 1930 aerial, and as such was targeted for inspection.</p> <p>However, visual inspection resulted in the identification of a highly modified dwelling in relatively poor condition, constructed of a mixture of weatherboard cladding, corrugated iron, brick, fibro sheeting and timber.</p> <p>It was concluded that either the building visible on the 1930 aerial had been previously removed, or had been so modified that its original design and construction is no longer discernible.</p> <p>The location of the dwelling is shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: External view of the dwelling, facing south</p>  <p>Photograph 2: External view of the dwelling, facing north</p> 



Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Structure’</p> <p>Lot 8 DP 240086</p> <p><i>Dwelling</i></p> <p>GDA94 – MGA56</p> <p>Eastings 278586.653</p> <p>Northings 6427761.794</p> <p><i>Shed</i></p> <p>GDA94 – MGA56</p> <p>Eastings 278550.189</p> <p>Northings 6427787.414</p>	<p>This property was targeted for inspection as it was indicated in the 1974 topographic map, though it was not visible in the 1930 aerial.</p> <p>The property was inspected, and all buildings and structures present appeared to be modern (late 20th century).</p> <p>The locations of the dwelling and shed are shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: Modern brick dwelling present at the property</p>  <p>Photograph 2: Modern sheds present at the property</p> 

Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Hidden Valley’ Lot 14 DP 750915</p> <p><i>Dwelling</i> GDA94 – MGA56 Easting 283205.606 Northings 6431894.258</p> <p><i>Shed</i> GDA94 – MGA56 Easting 283241.795 Northings 6431881.441</p> <p><i>Shed</i> GDA94 – MGA56 Easting 283221.066 Northings 6431869.166</p> <p><i>Ad hoc ancillary structures</i> GDA94 – MGA56 Easting 283281.7 Northings 6431907.718</p>	<p>‘Hidden Valley’ was targeted for inspection as it was indicated in the 1974 topographic maps.</p> <p>Visual inspection of the property revealed the presence of:</p> <ul style="list-style-type: none"> • a modern (late 20th century) dwelling of brick construction with a terra cotta tile roof and corrugated iron verandah roofing • multiple sheds, predominately of corrugated iron or fibro sheeting with either metal or timber frames • a number of ad hoc ancillary structures that appear to have been constructed of recycled materials • a concrete water tank • stockyards. <p>All of the structures or built elements identified appeared to date from the mid to late 20th century. The stockyards, however, featured a mixture of machine and hand (adze) cut timber, indicating that they may date from the early 20th century.</p> <p>The locations of the house, sheds and ad hoc ancillary structures are shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: Modern dwelling present at the property</p>  <p>Photograph 2: Shed present at the property</p> 

Item(s)	Description	Photographs (Umwelt 2018)
'Hidden Valley' Lot 14 DP 750915		<p>Photograph 3: Stockyard at the property, featuring a mixture of machine and hand (adze) cut timbers</p> 
		<p>Photograph 4: Ad hoc ancillary structures at the property</p> 

Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Clematis’ Lot 100 DP 1156069</p> <p><i>Concrete pads (indicating former building location)</i> GDA94 – MGA56 Eastings 281288.131 Northings 6430476.744</p> <p><i>Concrete pads (indicating former building location)</i> GDA94 – MGA56 Eastings 281242.34 Northings 6430395.72</p>	<p>This property was inspected as it was indicated on the 1974 topographic map, but was not visible in the 1930 aerial.</p> <p>During the visual inspection, it was determined that all buildings and/or structures associated with this property had been removed. Concrete pads indicating the likely location of building/structure footings were observed, indicating the location and size of former structures.</p> <p>Remnant services were also observed.</p> <p>The locations of the concrete pads are shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: Concrete pads indicating the location of former structures at the property</p>  <p>Photograph 2: Remnant services identified at the property</p> 

Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Sheds and yards’ Lot 2 DP 555166</p> <p><i>Dwelling</i> GDA94 – MGA56 Eastings 283131.415 Northings 6430030.224</p> <p><i>Shed</i> GDA94 – MGA56 Eastings 283130.066 Northings 6430093.111</p> <p><i>Stockyards and horse pens</i> GDA94 – MGA56 Eastings 283158.257 Northings 6430099.252</p> <p><i>Silo</i> GDA94 – MGA56 Eastings 283080.511 Northings 6430139.864</p>	<p>This property was indicated in the 1974 topographic map. Visual inspection revealed the presence of:</p> <ul style="list-style-type: none"> a modern (late 20th century) dwelling constructed on brick piers, featuring a corrugated metal roof and metal sheet walls various sheds, predominately comprising metal sheeting over timber frames, some with metal roof trusses stockyards and horse pens a metal grain silo. <p>The structures and elements observed all appear to have been constructed with modern materials. Timber was observed to be machine cut, and none of the building elements appeared particularly worn.</p> <p>The locations of the dwelling, shed, stockyards and silo are shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: Modern dwelling at the property</p>  <p>Photograph 2: Sheds at the property</p> 

Item(s)	Description	Photographs (Umwelt 2018)
'Sheds and yards' Lot 2 DP 555166		<p>Photograph 3: Stockyards and horse pens at the property (sheds and silo visible in background)</p>  <p>Photograph 4: Grain silo present on the property</p> 

Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Yards and sheds’</p> <p>Lot 7 DP 252956</p>	<p>This property was indicated on the 1974 aerial. Detailed inspection was not undertaken, as the property owner stated upon arrival of the survey team that all structures present at the property were constructed by the current property owners.</p> <p>Observations from the road were that all structures/buildings observed appeared to be of mid to late 20th century construction.</p> <p>The location of this property is shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>No photos available due to accessibility restrictions.</p>

Item(s)	Description	Photographs (Umwelt 2018)
<p>‘Structure and shed’</p> <p>Lot 170 DP 750968</p>	<p>This property was indicated on the 1974 topographic map as ‘sheds’.</p> <p>All buildings inspected at the property were, however, from the mid to late 20th century.</p> <p>The property owner noted that he had been told upon purchasing the property that a school used to operate from the property. He indicated that a black cypress (<i>Callitris endlicheri</i>) tree present at the property was used in association with the school. However, no other evidence to support this (such as mapping) has been sourced. No physical evidence of any former uses was identified during the visual inspection, and it is considered that the identification of the tree as being associated with a school is unsupported by the historical record.</p> <p>The black cypress tree located on this property is therefore not assessed to be of any identified or demonstrable significance. Irrespective, this property including the tree will not be subject to any impacts as a result of the current proposal.</p> <p>The location of this property is shown in Figure 6.1. This property is located outside of the MCCO Additional Project Area, but within the wider study area.</p>	<p>Photograph 1: Modern brick dwelling at the subject site</p>  <p>Photograph 2: Black cypress (<i>Callitris endlicheri</i>) tree believed to be associated with a former school that operated out of this property</p> 

6.2.2 Properties Identified to be of Potential Heritage Significance

Based on the visual inspections undertaken, as well as relevant background research, 15 of the 25 inspected properties, items or structures inspected were identified to have the potential to be of historical heritage significance, or to have previously been recognised to be of local significance via inclusion on Schedule 5 of the relevant LEP. This includes Castle Hill, despite the property not having been able to be subject to visual inspection as part of this HHA.

In addition, the agricultural equipment identified within Lot 144 DP 750968 was also identified to be of potential heritage significance, resulting in a total of 16 items or structures of potential or established historical heritage significance. Of these, four are located within or partially within the MCCO Proposed Disturbance Area, and one is located within the MCCO Additional Project Area (but outside of the MCCO Proposed Disturbance Area). The remaining 11 are located within the wider study area but outside of the MCCO Additional Project Area.

This information is summarised in the below table, and the specific location of these items or structures is shown in **Figure 6.2**.

A detailed significance assessment of the potential heritage items, elements or sites that are located within or partially within the MCCO Proposed Disturbance Area is provided within **Table 7.1**.

A broad significance assessment of the wider study area, which includes a consideration of the potential heritage items, elements or sites located outside of the MCCO Additional Project Area and listed in the above table is provided within **Table 7.2**. As the significance of the two listed items (being Brogheda and Wybong Cemetery) is already established via their local listings on the relevant LEP (refer to **Section 5.1**), they do not require further consideration in the significance assessment presented at **Table 7.2**.

Of the 16 properties, items or structures identified to be of potential or established historical heritage significance, only the five located within the MCCO Proposed Disturbance Area will be subject to direct or indirect impacts (refer to **Section 8.1**).

None of the 11 potential or listed items, properties or structures located within the wider study area (and outside of the MCCO Additional Project Area) will be subject to any identified direct or indirect impacts as a result of the MCCO Project. This includes the two locally listed heritage items, being 'Brogheda' and the 'Wybong Cemetery'. Potential direct and indirect impacts associated with the MCCO Project are discussed further at **Section 8.1**.

Table 6.2 Summary of listed heritage items and properties/items/structures identified to be of potential heritage significance

Item ID	Name and Address	Location in Relation to the MCCO Project
a	'Yards and structures' Lot 655 DP 263080	Within the MCCO Proposed Disturbance Area
b	"Millville", structures, yards and tank' Lot 41 DP 531030	Within the MCCO Proposed Disturbance Area
c	'Structures' Lot 3 DP 7590	Within the MCCO Proposed Disturbance Area

Item ID	Name and Address	Location in Relation to the MCCO Project
d	Wybong Post Office Road	Partially within the MCCO Proposed Disturbance Area
e	Agricultural equipment Lot 144 DP 750968	Outside of the MCCO Proposed Disturbance Area but within the MCCO Additional Project Area
f	'Yarlett and structures' Lot 122 DP 585122	Outside of the MCCO Additional Project Area but within the wider study area
g	'Brogheda Ruins, Shed and Silo' Part of Lot 101 DP 1116579 and Part of Lot 1001 DP 1162479 (locally listed heritage item)	Outside of the MCCO Additional Project Area but within the wider study area
h	'Dwelling, being the former Wybong Post Office and shed' Lot 122 DP 665563	Outside of the MCCO Additional Project Area but within the wider study area
i	'Wybong Public Hall' Lot 100 DP 1111213	Outside of the MCCO Additional Project Area but within the wider study area
j	'Dwelling, being a relocated slab hut from Anvil Hill and marked tree (non-Aboriginal)' Lot 1 DP 240086	Outside of the MCCO Additional Project Area but within the wider study area
k	'Yarraman, being a relocated slab hut from Anvil Hill', Lot 2 DP 240086	Outside of the MCCO Additional Project Area but within the wider study area
l	'Wybong Cemetery' Lot 7004 DP 93976 and Lot 80, 81, 82, 83, 84, 85, 86 DP 7509696 (locally listed heritage item)	Outside of the MCCO Additional Project Area but within the wider study area
m	'Dwelling (Rosedale) and structure (shed)' Lot 18 DP 750969	Outside of the MCCO Additional Project Area but within the wider study area
n	'Former Church of St Thomas Aquinas' Lot 1 DP 910116	Outside of the MCCO Additional Project Area but within the wider study area
o	'Collareen' Lot 6 DP 750969	Outside of the MCCO Additional Project Area but within the wider study area
p	'Castle Hill' Lot 9 DP 750968 ³	Outside of the MCCO Additional Project Area but within the wider study area

³ Note: this property was not subject to visual inspection due to access restrictions. Its potential heritage significance has therefore not been fully assessed or revised as part of this HHA.

6.2.3 Other Elements of Potential Heritage Significance

Other Elements or Areas of Potential Heritage Significance

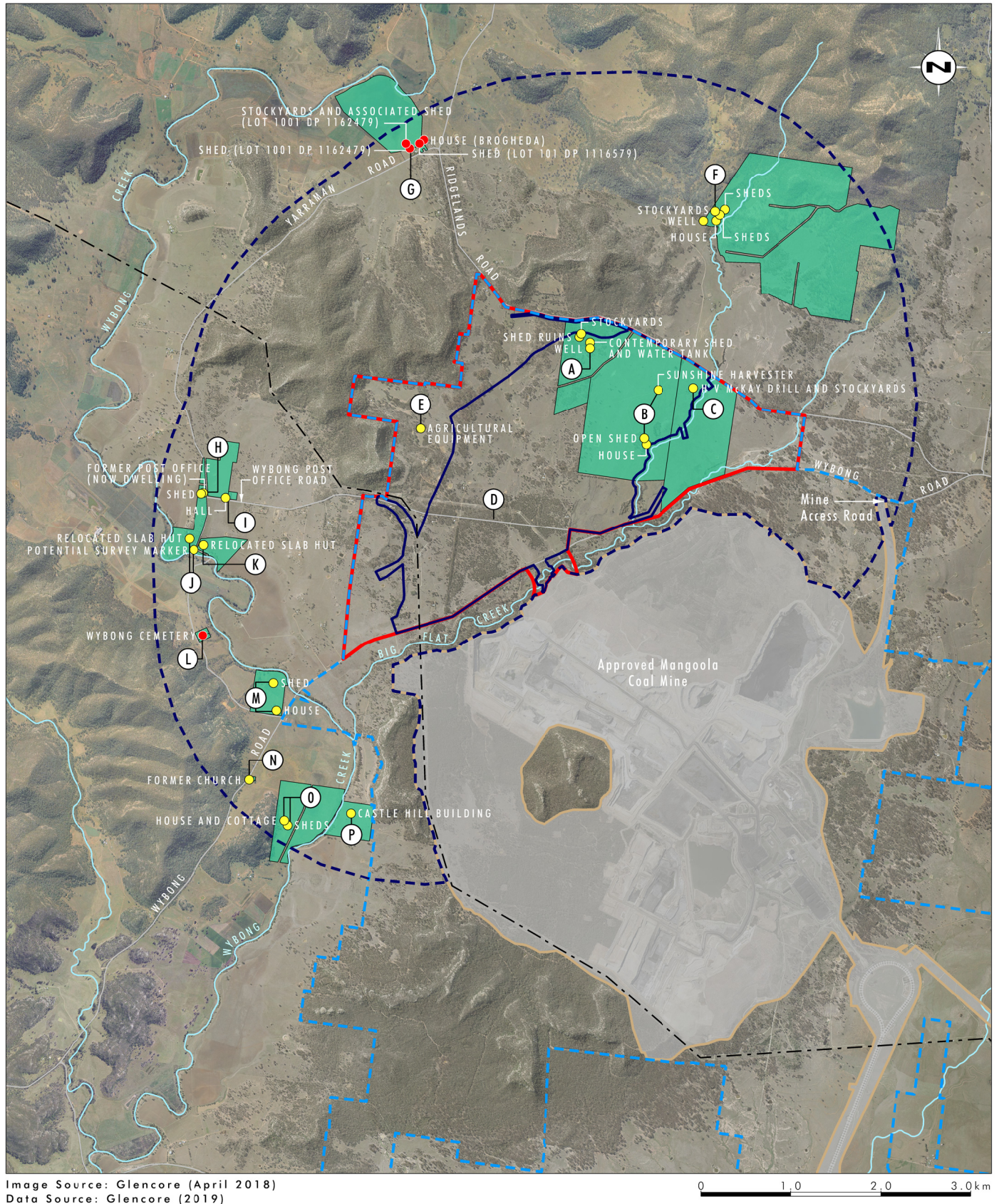
No potentially significant conservation areas, natural heritage areas, gardens, landscapes, or trees were identified within the MCCO Additional Project Area or the wider study area. Additionally, no such areas or elements have previously been identified within or in the vicinity of the current study area as part of any previous assessments undertaken. The landscape is characterised by cleared land that has been used for agricultural and grazing purposes since the mid-19th century.

Views and Vistas

As part of the targeted visual inspections and general field survey undertaken, significant views or vistas were identified within the MCCO Additional Project Area in relation to:

- views to and from the eastern (principal) façade of 'Brogheda', which is locally listed
- views from the 'Wybong Cemetery', which is locally listed.

Potential impacts to this significant view/vista are assessed at **Section 8.1.3**.



Legend

- MCCO Project Area
- Approved Mangoola Coal Mine Disturbance Area
- MCCO Additional Project Area
- MCCO Additional Disturbance Area
- Historic Heritage Study Area
- Properties targeted for further Assessment/Inspection
- Listed Historical Heritage Items
- Potential Historical Heritage Items

FIGURE 6.2

Listed Heritage Items and Properties/Items/Structures Identified to be of Potential Heritage Significance

7.0 Significance Assessment

As noted at **Section 3.4.3**, and in accordance with the relevant SEAR (and OEH input), only those items for which direct or indirect impacts have been identified (being items located within the MCCO Additional Project Area) are assessed in detail in **Table 7.1** in terms of their heritage significance.

As noted at **Section 8.1.2** and **8.1.3**, no direct or indirect impacts have been identified to any potential or listed heritage items located outside of the MCCO Additional Project Area; this includes both potential impacts associated with blasting, as well as potential impacts to significant views and vistas. For further information regarding both direct and indirect impacts associated with the MCCO Project, reference should be made to **Section 8.2**. For contextual purposes, and to understand the potential impacts of the MCCO Project on the local area's history more broadly, an assessment of the significance of the wider study area is provided separately in **Table 7.2**.

The significance assessment presented in this section is based upon the seven criteria outlined at **Section 3.4.1**. Historical archaeological potential and significance is assessed separately at **Section 7.3**.

7.1 Heritage Significance of Potential Heritage Items/Sites within the MCCO Additional Project Area and the MCCO Proposed Disturbance Area

The significance of properties, items or areas of identified potential heritage significance which will be subject to direct or indirect impacts is assessed within **Table 7.1**. The location of these properties is shown in **Figure 6.2**.

Table 7.1 Heritage significance of potential heritage items/sites within the MCCO Additional Project Area and the MCCO Proposed Disturbance Area

Heritage Branch Standard Criteria	Assessment of Significance
<p>Criterion (a) Historical</p> <p>An item is important in the course, or pattern, of NSW's cultural or natural history.</p>	<p>“Millville”, structures, yards and tank’, Lot 41 DP 531030</p> <p>The cottage referred to as ‘Millville’, located within Lot 41 DP 531030, comprises a highly modified horizontal timber slab hut. No other extant buildings or structures associated with the former ‘homestead’ or with any previous owners or inhabitants of the land have been identified or previously recorded. Other structures or elements inspected in the vicinity of the cottage appear contemporary.</p> <p>‘Millville’ and the Boorer family are heavily evidenced in the historical record, and are also mentioned in the 2008 oral history prepared by Hansen Bailey. It is clear from this historical evidence that the ‘Millville Estate’ and the Boorer family with which it is associated contributes to the wider history of the local area.</p> <p>Particularly, the known establishment of a flour mill and later sawmill on the property, and the known use of the land for grazing more generally, is demonstrative of the local industrial pursuits that characterised the local area in the late 19th century and 20th century.</p> <p>However, the highly modified cottage, which is the only extant structure identified on the property that dates from these periods, does not directly reflect the contribution of the ‘Millville Estate’ to the local area’s history.</p>

Heritage Branch Standard Criteria	Assessment of Significance
	<p>The cottage, particularly in its modified state, does not provide any information or evidence of the historical development or use of the local area that is not already well evidenced in the historical record. Similarly, extant fencing and property boundaries do not provide any evidence of the pattern of settlement or land use that is not already available in the historical record.</p> <p>As an individual item, 'Millville' and its associated property is not considered to meet this criterion.</p> <p>Ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items within Lot 655 DP 263080, Lot 3 DP 7590, Lot 41 DP 531030 and Lot 144 DP 750968</p> <p>Ancillary structures, sheds, stockyards, and agricultural equipment identified within the MCCO Additional Project Area (being within Lot 655 DP 263080, Lot 3 DP 7590, Lot 41 DP 531030 and Lot 144 DP 750968) all comprise vernacular structures or elements that are commonly encountered in rural areas like those within the MCCO Additional Project Area.</p> <p>None of the items identified within the MCCO Additional Project Area have any demonstrably strong association with the local area specifically; rather, they are typical examples of standardised rural infrastructure and building typologies which have been retained within the area for practical purposes only.</p> <p>The structures and elements identified represent a range of materials (particularly timber and corrugated iron), construction methods (including machine cut timber and hand [adze] cut timber, mortise and tenon construction, post and wire construction, etc.) and phases of occupation (from the late 19th century to the early 21st century).</p> <p>However, all identified ancillary structures, stockyards and other miscellaneous items (such as water tanks) do not represent or provide any information or evidence that would be considered important in the course or pattern of the local area's historical development or use.</p> <p>The items/elements identified are all isolated examples of remnant rural structures, infrastructure or agricultural equipment and are not associated with any wider properties, landscapes or areas of identified heritage significance.</p> <p>More intact and better examples of these kinds of items/elements are available elsewhere within the wider local and regional area. It is also noted that the condition of many of the identified items or elements further inhibits their potential historical significance.</p> <p>For these reasons, the ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items identified within the MCCO Additional Project Area are not considered to meet this criterion.</p> <p>Wybong Post Office Road</p> <p>The Wybong Post Office Road was established relatively early in the local area's history, most likely as an unsealed dirt track. It is not, however, a particularly major road, and its establishment is not associated with any major developments in transport or movement within the local area.</p> <p>The name of the road is derived from the presence of the former Wybong Post Office at its western extent; the post office is no longer in use, and</p>

Heritage Branch Standard Criteria	Assessment of Significance
	<p>has been highly modified and now utilised as a residential property. Though the connection between the former post office and the roadway is acknowledged, it is not considered to be particularly historically significant.</p> <p>For these reasons, Wybong Post Office Road is not considered to meet this criterion.</p>
<p>Criterion (b) Associative</p> <p>An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history.</p>	<p>“Millville”, structures, yards and tank’, Lot 41 DP 531030</p> <p>As noted above, ‘Millville’ is predominately associated with the Boorer family. Later owners/residents include the Quinn and Doyle families.</p> <p>There is no evidence in the historical record to suggest that any of these families were particularly significant or important to the local area's historical development. Though Boorer's mills (first flour and then saw) are well evidenced in the historical record, there is no evidence to suggest that either of these enterprises were particularly important or influential in either a local or regional context.</p> <p>Overall, the association between the property and the families/individuals known to have lived there is not considered to meet this criterion.</p> <p>Ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items within Lot 655 DP 263080, Lot 3 DP 7590, Lot 41 DP 531030 and Lot 144 DP 750968</p> <p>There are no known associations between any of the ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items identified within the MCCO Additional Project Area and people or groups of people considered to be of importance in NSW's or the local area's cultural or natural history.</p> <p>As noted above, the structures and elements are isolated, remnant examples of typical rural structures and infrastructure; as such, the origins of the items/elements are not known or able to be determined, further limiting their potential for associative significance.</p> <p>For these reasons, the ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items identified within the MCCO Additional Project Area are not considered to meet this criterion.</p> <p>Wybong Post Office Road</p> <p>The Wybong Post Office Road does not have any identified associations with people or groups of people considered to be of importance in NSW's or the local area's cultural or natural history.</p> <p>A search of the National Library of Australia's online search engine Trove was undertaken, and no reference to Wybong Post Office Road that would indicate it to have associative significance was found.</p> <p>For these reasons, Wybong Post Office Road is not considered to meet this criterion.</p>
<p>Criterion (c) Aesthetic</p> <p>An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical</p>	<p>“Millville”, structures, yards and tank’, Lot 41 DP 531030</p> <p>In its original form, ‘Millville’ is reported to have been a horizontal timber slab hut constructed of hand (adze) cut timbers and featuring a dressed sandstone chimney. This style of construction is relatively well represented in the wider local and regional contexts, and does not</p>

Heritage Branch Standard Criteria	Assessment of Significance
<p>achievement in NSW.</p>	<p>represent a high degree of technical or creative achievement.</p> <p>In its original form, 'Millville' may have provided a good example of an early timber slab hut featuring horizontal rather than vertical timber slabs. In its highly modified state, however, 'Millville' does not provide an intact, important or particularly valuable example of this early building typology.</p> <p>For these reasons, 'Millville' is not considered to meet this criterion.</p> <p>Ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items within Lot 655 DP 263080, Lot 3 DP 7590, Lot 41 DP 531030 and Lot 144 DP 750968</p> <p>As already discussed, the ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items identified within the MCCO Additional Project Area are typical and commonly encountered examples of vernacular rural structures and infrastructure. None are aesthetically distinctive and, due to their condition, none are assessed to be particularly good or demonstrative examples of their type or design.</p> <p>Whilst the agricultural equipment identified is associated with HV McKay and his seminal farm equipment designs, none of the examples present within the MCCO Additional Project Area are particularly early, good or intact examples of this.</p> <p>The likely date range of the equipment means that they are later models, produced by the company in bulk following the success of initial and (at the time) innovative models in the mid-1880s.</p> <p>For these reasons, the ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items identified within the MCCO Additional Project Area are not considered to meet this criterion.</p> <p>Wybong Post Office Road</p> <p>Wybong Post Office Road is a standard albeit narrow roadway with a modern asphalt/bitumen surface. The design, materials, proportions and overall appearance of the roadway is typical and common, and in no way aesthetically distinctive.</p> <p>For this reason, Wybong Post Office Road is not considered to meet this criterion.</p>
<p>Criterion (d) Social</p> <p>An item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons.</p>	<p>"Millville", structures, yards and tank', Lot 41 DP 531030</p> <p>As already discussed with regards to associative significance, there is no evidence to suggest that 'Millville' has any strong or special associations with a particular community or cultural group in NSW for social, cultural or spiritual reasons.</p> <p>'Millville' is therefore not considered to meet this criterion.</p> <p>Ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items within Lot 655 DP 263080, Lot 3 DP 7590, Lot 41 DP 531030 and Lot 144 DP 750968</p> <p>As already discussed with regards to associative significance, there is no evidence to suggest that any of the ancillary structures, sheds, stockyards, agricultural equipment or miscellaneous items identified within the MCCO Additional Project Area have any strong or special associations with a particular community or cultural group in NSW for social, cultural</p>

Heritage Branch Standard Criteria	Assessment of Significance
	<p>or spiritual reasons.</p> <p>The ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items identified within the MCCO Additional Project Area are therefore not considered to meet this criterion.</p> <p>Wybong Post Office Road</p> <p>As already discussed with regards to associative significance, there is no evidence to suggest that Wybong Post Office Road has any strong or special associations with a particular community or cultural group in NSW for social, cultural or spiritual reasons.</p> <p>Wybong Post Office Road is therefore not considered to meet this criterion.</p>
<p>Criterion (e) Research Potential</p> <p>An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history.</p>	<p>“Millville”, structures, yards and tank’, Lot 41 DP 531030</p> <p>There is no evidence, either in terms of extant fabric or the historical record, to suggest that further investigation of ‘Millville’ would result in information that would contribute meaningfully to the understanding of NSW's cultural or natural history.</p> <p>As already discussed, ‘Millville’ comprises two phases of development (being a potential late 19th century timber slab hut and later, mid-20th century extensions and additions), both of which are vernacular in their materiality and design.</p> <p>Due to the modifications that have occurred to the building, neither of the phases of construction are particularly well represented in the current configuration of the property. More intact and therefore better and more meaningful examples of these building typologies are extant elsewhere within the wider local and regional contexts.</p> <p>For these reasons, ‘Millville’ is not considered to meet this criterion.</p> <p>Ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items within Lot 655 DP 263080, Lot 3 DP 7590, Lot 41 DP 531030 and Lot 144 DP 750968</p> <p>As already discussed, the ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items identified within the MCCO Additional Project Area are typical and commonly encountered in comparable rural settings.</p> <p>Further investigation of these structures, elements and items is therefore highly unlikely to yield any new or historically significant information that is not already available via other sources.</p> <p>For these reasons, the ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items identified within the MCCO Additional Project Area are not considered to meet this criterion.</p> <p>Wybong Post Office Road</p> <p>It is highly likely that prior to being sealed with asphalt/bitumen, Wybong Post Office Road comprised an unsealed dirt track. In its current configuration, the roadway is a standardised and typical roadway.</p> <p>Further investigation of the road is therefore highly unlikely to yield any new or historically significant information that is not already available via other sources.</p>

Heritage Branch Standard Criteria	Assessment of Significance
	<p>For these reasons, Wybong Post Office Road is not considered to meet this criterion.</p>
<p>Criterion (f) Rarity</p> <p>An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history.</p>	<p>“Millville”, structures, yards and tank’, Lot 41 DP 531030</p> <p>For the reasons already discussed, ‘Millville’ is not considered to meet this criterion.</p> <p>Ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items within Lot 655 DP 263080, Lot 3 DP 7590, Lot 41 DP 531030 and Lot 144 DP 750968</p> <p>For the reasons already discussed, the ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items identified within the MCCO Additional Project Area are not considered to meet this criterion.</p> <p>Wybong Post Office Road</p> <p>For the reasons already discussed, Wybong Post Office Road is not considered to meet this criterion.</p>
<p>Criterion (g) Representativeness</p> <p>An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments.</p>	<p>“Millville”, structures, yards and tank’, Lot 41 DP 531030</p> <p>‘Millville’ provides an example of a (likely) late 19th century horizontal timber slab hut. However, and as already discussed, in its highly modified state ‘Millville’ is not assessed to be a particularly good or important example of this building type, or of the technology (adze cut timber) used in its construction.</p> <p>More intact and therefore representative examples of this construction methodology and building type are available within the wider local and regional context.</p> <p>As such, ‘Millville’ is not considered to meet this criterion.</p> <p>Ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items within Lot 655 DP 263080, Lot 3 DP 7590, Lot 41 DP 531030 and Lot 144 DP 750968</p> <p>In their vernacular design and standardised materiality, the ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items identified within the MCCO Additional Project Area are loosely representative of typical structures and infrastructure encountered in rural contexts.</p> <p>However, in their isolation (i.e. as remnant elements within the landscape) and based on their general condition, they are not assessed to be good or important examples.</p> <p>The ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items identified within the MCCO Additional Project Area are therefore not considered to meet this criterion.</p> <p>Wybong Post Office Road</p> <p>Wybong Post Office Road is a typical roadway, as already discussed. It is not, however, considered to be important in demonstrating a particular technology or road design. It is representative of its type by default, but is not assessed to be a good example of its type.</p> <p>For these reasons, Wybong Post Office Road is not considered to meet</p>

Heritage Branch Standard Criteria	Assessment of Significance
	this criterion.

7.2 Heritage Significance of the Study Area

The below significance assessment considers the heritage significance of the study area as a whole (refer to **Figure 1.3**). It is noted that although the significance of properties, items or sites located within the wider study area (outside of the MCCO Additional Project Area) is not individually assessed in this HHA (as no direct or indirect impacts to these properties, items or sites have been identified), the significance of these properties, items or sites is considered broadly within the context of the wider study area and local area in the below table.

As both 'Brogheda' and the 'Wybong Cemetery' are locally listed heritage items of established heritage significance (local level), they are not specifically assessed in the below table.

Table 7.2 Heritage significance of the wider study area

Heritage Branch Standard Criteria	Assessment of Significance
<p>Criterion (a) Historical</p> <p>An item is important in the course, or pattern, of NSW's cultural or natural history.</p>	<p>Evidence of extant rural buildings/structures (both standing and derelict), fencing, yards and other rural infrastructure within the wider study area are demonstrative of the pattern of land use and historical development of the locality.</p> <p>Extant sheds, agricultural equipment, stockyards and other ancillary structures are collectively indicative of the industrial pursuits that characterise the early history of the area, such as dairying, grazing, timber clearing and milling, and viticulture.</p> <p>In recognition of their historical significance and intactness, both 'Brogheda' and the 'Wybong Cemetery' have been listed as heritage items of local significance on the relevant LEP.</p> <p>With regards to the potential heritage items identified as part of this HHA, the following assessment of historical significance is made:</p> <ul style="list-style-type: none"> • Early extant estates that are intact, and that are associated with local families with historical associations to the area have historical significance on a local level. They are demonstrative of the early settlement and development of the area. This includes 'Yarlett', 'Collareen' and 'Castle Hill'; • Public items or buildings, which are closely associated with local, historical families and which represent the settlement and early development of the area also have historical significance on a local level. This includes the 'Wybong Public Hall' and the 'Former Church of St Thomas Aquinas'. <p>Other properties or structures, including the relocated slab huts from Anvil Hill and the highly modified post office at the end of Wybong Post Office Road, may also be of local historical interest. However, the significant modification and/or relocation of these specific items has adversely impacted their historical significance.</p> <p>It is noted, however, that previous heritage studies, archaeological investigative works and archival recordings have been undertaken for</p>

Heritage Branch Standard Criteria	Assessment of Significance
	<p>similar properties, items or elements both within and in the immediate vicinity of the current study area (refer to Section 5.2). These studies have comprehensively characterised, recorded and assessed the historical heritage of the local area.</p> <p>As a result, in general, the potential (non-listed) heritage items/sites present within the wider study area, are unlikely to provide information about the local area's history that is not already known from the historical record.</p>
<p>Criterion (b) Associative</p> <p>An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history.</p>	<p>The wider study area has clear and demonstrable associations with local historical figures and families, and with organisations such as the Sisters of St Joseph and the former church.</p> <p>However, this associative significance is predominately derived from the land tenure history and historical development of the study area, which is comprehensively captured by previous studies and the historical record generally.</p> <p>The majority of the potential heritage sites/items identified within the wider study area are unlikely to provide strong or significant evidence of these associations, particularly given the modifications that have occurred to these sites/items over time, including relocation.</p> <p>Though the potential heritage items/sites may still be of local interest for their associations with historical figures or groups, these associations are not considered to meet the criteria of associative significance as defined by the NSW Heritage Branch (now Division) (refer Section 3.4.1).</p> <p>The exception to this is the 'Wybong Public Hall', which has demonstrably strong and special associations with multiple generations of local families. The Hall, established in 1924, has been continuously used for its originally intended purpose, and is closely associated with the social and political lives of local residents. The 'Wybong Public Hall' is considered to meet the criteria for associative significance on a local level.</p> <p>As no impacts are proposed to the 'Wybong Public Hall', it is considered that the potential associative significance of this item will not be impacted by the MCCO Project.</p>
<p>Criterion (c) Aesthetic</p> <p>An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW.</p>	<p>The potential heritage sites/items identified within the wider study area do not generally demonstrate distinctive aesthetic qualities or technical innovations. The potential heritage items/sites are all vernacular in their design and construction methodology, and are typical of buildings and features found in rural areas characterised by rural landholdings, native bushland and primary industries including agriculture, forestry and extractive industries.</p> <p>The rural infrastructure present within the wider study area, portrays construction techniques that are common in the Hunter Region from a limited range of materials (including timber and corrugated iron); however there are many other similar and better examples of rural infrastructure in the Hunter area, which are more intact than those identified in the study area.</p> <p>In general the study area and the potential heritage items/sites contained therein is unlikely to meet this criterion.</p>

Heritage Branch Standard Criteria	Assessment of Significance
<p>Criterion (d) Social</p> <p>An item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons.</p>	<p>The wider study area demonstrates the pattern of settlement and development in the area from the mid to late 19th century onwards, and is typical of a large rural landscape within the wider regional area.</p> <p>With the exception of the 'Wybong Public Hall' and former Church, it is considered that the potential heritage items/sites identified within the wider study area do not have any particularly strong associations with any previous or contemporary particular community or group.</p> <p>As no impacts are proposed to the 'Wybong Public Hall' and former Church, it is considered that the potential social significance of these items will not be impacted by the MCCO Project.</p>
<p>Criterion (e) Research Potential</p> <p>An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history.</p>	<p>With regards to built heritage (as opposed to historical archaeology), general evidence of rural buildings/structures (both standing and derelict), yards, roads, tracks and rural fences etc. within the study area are demonstrative of the pattern of land use and historical development of the area, and could provide information about how the landscape was used and changed during the earlier historical phases of settlement and use.</p> <p>However, as individual items they have little research potential. In general, the known and potential historical heritage items extant within the study area are typical of the area as a large rural landscape and are unlikely to provide further information regarding the history and development of the area that is not already available via other sources.</p> <p>The potential historical (non-Aboriginal) archaeological resource of the MCCO Additional Project Area is assessed separately at Section 7.3.</p>
<p>Criterion (f) Rarity</p> <p>An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history.</p>	<p>In general, the potential heritage sites/items identified within the wider study area are typical of structures and other sites/items typically found within rural landscapes similar to the study area, and are unlikely to meet this criterion.</p> <p>The potential heritage resources associated with the wider study area are not associated with an unusual or remarkable aspect of the region's history.</p> <p>Whilst it is acknowledged that the potential heritage sites/items within the study area form part of an ever decreasing resource and data set, they are not considered to meet this criterion on that basis alone.</p>
<p>Criterion (g) Representativeness</p> <p>An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments.</p>	<p>The potential heritage sites/items identified within the wider study area are representative of the structures items/sites typically found in a rural landscape with a history of pastoral and agricultural activities and the exploitation of timber and mineral resources.</p> <p>However, they are not considered to be particularly important examples of this type of development or of the historical period with which they are associated.</p>

7.3 Archaeological Potential and Significance

As discussed in **Section 3.4.2**, this assessment of archaeological potential and significance is based on a consideration of the broader approach to archaeological significance presented in the 2009 guideline *Assessing Significance for Historical Archaeological Sites and 'Relics'*

As no sub-surface impacts are proposed to any areas outside of the MCCO Additional Project Area as part of the MCCO Project (i.e. within the wider study area), the below assessment of historical (non-Aboriginal) potential and significance considers *only* the MCCO Additional Project Area as defined in **Figure 1.3**.

7.3.1 Historical (Non-Aboriginal) Archaeological Potential

While the MCCO Additional Project Area has the potential to demonstrate the pattern of land use and development that dates from the mid-19th century onward, it is unlikely to contain historical archaeological remains associated with this development history.

Historical (non-Aboriginal) archaeological evidence associated with the historical use and development of the MCCO Additional Project Area (such as for grazing, agriculture and land clearing) is likely to be patchy at best, and it would be impossible to specify what such remains may entail and where they would be located.

Known former structures or elements, including dwellings or buildings visible in historical and more recent (2008) aerials that are no longer present within the MCCO Additional Project Area are, by their anticipated nature and physical configuration, unlikely to have resulted in the preservation of a recoverable, intact or significant archaeological resource. This is because:

- The majority of structures or buildings present within the MCCO Additional Project Area and wider study area were observed to be elevated off the ground surface on piers or similar. It is unlikely, therefore, for substantial or meaningful structural remnants of any former buildings or structures, such as that known to have been located within Lot 3 DP 7590 (refer **Table 6.1**) to be present. If present, any such evidence is highly unlikely to contribute significant or meaningful information that would further an understanding of the local area's history.
- Other structures known to have been present within the MCCO Additional Project Area through the historical record, such as Boorer's flour mill and later sawmill, are known to have been impacted by fire and/or removed following the subdivision and sale of earlier, larger properties. This further limits the potential for meaningful archaeological remains of these former elements to be present and/or effectively recovered.
- Though the historical record provides evidence of the structures mentioned above, there is no corresponding mapping or historical aerials available to provide clarity on their likely location or extent. Boorer's original land holdings, for example, were substantial (over 640 acres); the potential for former structures or elements that are not clearly defined in the historical record in terms of location or extent to be successfully relocated and uncovered is considered to be low.
- No evidence of any former structures and elements potentially associated with the mill, nor any likely former structure or element locations were identified as part of the visual inspections of this property undertaken by Umwelt (2018), OzArk (2018) or EMM (2016).

For these reasons, the overall historical (non-Aboriginal) archaeological potential of the MCCO Additional Project Area is assessed as very low. If present, the archaeological resource is anticipated to comprise isolated or fragmentary material.

7.3.2 Historical (Non- Aboriginal) Archaeological Significance

Archaeological significance is directly linked to the archaeological (or scientific) research potential of an archaeological site or resource. An archaeological site broadly comprises below ground physical evidence of building foundations, occupation/archaeological deposits, features and artefacts. The overall historical (non-Aboriginal) archaeological potential of the MCCO Additional Project Area is assessed as very low.

This assessment of archaeological significance has been undertaken in accordance with the 'NSW Heritage Criteria for Assessing Significance Related to Archaeological Sites and Relics' (Section 4.4 of *Assessing Significance for Historical Archaeological Sites and 'Relics'*, Heritage Branch, 2009).

Archaeological Research Potential (current NSW Heritage Criterion E)

As the archaeological potential of the MCCO Additional Project Area is assessed as very low, it is considered unlikely that the MCCO Additional Project Area has the ability to contribute new or significant information about the local or regional area's history.

There is no evidence to suggest that any potential former structures, buildings or elements that may have been present within the MCCO Additional Project Area could provide evidence related to early settlement or the pattern of early land use and development. In addition any former structures, buildings or elements would have likely been typically vernacular in their materiality, design and construction. Intact, extant examples of vernacular rural dwellings, commercial buildings, structures and infrastructure are readily available elsewhere within the regional context and within NSW more broadly. As such, it is anticipated that any historical archaeological resource present within the MCCO Additional Project Area is highly unlikely to contribute knowledge that is not available via other sites.

As discussed throughout this HHA, the historical record available for the local area is relatively comprehensive, likely owing to the limited size of the local community. In addition to this, heritage assessments previously prepared, including the 2008 oral history report prepared by Hansen Bailey, provide a comprehensive and relatively thorough understanding of the local area's historical development.

Extant building stock within the wider local area, including 'Brogheda', the 'Wybong Cemetery', 'Former Church of St Thomas Aquinas', 'Collareen', 'Castle Hill', the relocated timber slab huts located at 'Yarraman' and Lot 1 DP 240086 and 'Yarlett' provide informative examples of the design and materiality of building stock (including both dwellings and ancillary structures), property configuration and patterns of land use within the local area; it is noted that these properties will not be directly or indirectly impacted by the current proposal.

In comparison, the anticipated limited archaeological resource of the MCCO Additional Project Area is unlikely to yield information that would be particularly meaningful, or that would enhance or contribute significantly to historical information that is already available via other resources.

A high degree of intactness in the archaeological resource is necessary before a substantive contribution can be made to the research potential and hence, the ability of the archaeological resource to answer research questions for a study area. Generally, it is considered that any archaeological remains that may be present would be unlikely to have any research potential and would at best provide only a minor contribution to the significance of the area.

Association with Individuals, Events or Groups of Historical Importance (current NSW Heritage Criteria A, B, & D)

General evidence of rural buildings/structures (both standing and derelict), concrete slabs, yards, roads, tracks and rural fences etc. may be demonstrative of the pattern of land use and historical development of the area if recovered intact, and may also provide information about how the landscape was used and changed during its use as pastoral land. However, within the MCCO Additional Project Area, the potential archaeological resource is considered unlikely to achieve this based on its anticipated nature and condition.

The majority of the MCCO Additional Project Area was maintained as vacant land used for grazing and other agricultural pursuits, and these activities are unlikely to have resulted in a readily discernible or meaningful archaeological resource. Archaeological material, if present, is more likely to be associated with

former structures or buildings (i.e. built elements). However if present such evidence is anticipated to be isolated and fragmentary, and therefore unlikely to contribute significantly to the historical record. It is also unlikely to provide information that is not already readily available via extant buildings and structures (refer above).

None of the properties located within the MCCO Additional Project Area have been identified to be associated with any people or groups of people considered to be of particular significance to the local area's history. Families such as the Hogan and Ray families, which are locally notable, are associated with properties that have either

- already been approved for removal and subject to recording as part of existing development consents; or
- are located outside of the MCCO Additional Project Area, and will therefore not be subject to any direct or indirect impacts as a result of the proposal.

With regards to 'Millville' and the Boorer family, although this family is considered to be a 'notable' local family, the highly modified 'slab hut' and other structures or elements located in proximity to the 'slab hut' no longer, in their modified state, have any strong or significant associations with the former family. The highly modified dwelling is currently being rented to a private tenant by Mangoola, and no longer has any discernible association with past inhabitants.

Further, with regards to archaeological potential, the former flour mill and later sawmill previously located somewhere on the former Boorer property are known to have been impacted by fire and/or removed following the subdivision and sale of earlier, larger properties. This limits the potential for meaningful archaeological remains of these former elements to be present and/or effectively recovered.

There is also no corresponding mapping or historical aerials available to provide clarity on the likely location or extent of these former elements. Boorer's original land holdings, for example, were substantial (over 640 acres); the potential for former structures or elements that are not clearly defined in the historical record in terms of location or extent to be successfully relocated and uncovered is considered to be low. Lastly, no evidence of any former structures and elements potentially associated with the mill, nor any likely former structure or element locations were identified as part of the visual inspections of this property undertaken by Umwelt (2018), OzArk (2018) or EMM (2016).

Although the Boorer family is considered to be locally notable, there is only a low degree or potential for any archaeological remains associated with this family to be recovered. If identified, such remains are, based on the historical record, likely to be fragmentary and in poor condition. Such remains are unlikely to contribute meaningfully to the historical record of the local area, and are considered unlikely to have archaeological significance. Though Boorer's mills (first flour and then saw) are well evidenced in the historical record, there is no evidence to suggest that either of these enterprises were particularly important or influential in either a local or regional context. As such, it is noted that the Boorer family, whilst locally notable, are not considered to be significant to the local area's historical development.

Aesthetic or technical significance (current NSW Heritage Criterion C)

As discussed above, it is anticipated that any archaeological remains present within the MCCO Additional Project Area will be isolated, fragmentary and/or in relatively poor condition. Isolated remnants, such as the remains of fence posts, the remains of former vernacular dwellings, and/or the remains of ancillary structures associated with rural activities are unlikely to have any aesthetic or technical significance. It is also reiterated that there is no known evidence to suggest that any of the buildings or structures formerly located within the MCCO Additional Project Area were not vernacular in design and construction.

Ability to demonstrate the past through archaeological remains (current NSW Heritage Criteria A, C, F & G)

As already discussed above, it is considered unlikely for any potential historical archaeological remains within the MCCO Additional Project Area to contribute new or significant information about the historical record that is not available via extant sites and/or the historical record.

Further, there is no evidence to suggest that the potential archaeological resource of the MCCO Additional Project Area would be particularly well-preserved or rare; if present; archaeological remains are considered most likely to be isolated, fragmentary remains of typical, vernacular rural buildings or infrastructure.

7.4 Summary

As discussed in **Table 7.1**, none of the five potential heritage properties, items or structures located within the MCCO Additional Project Area have been assessed to meet any of the seven criteria for assessing significance.

Of the potential heritage properties, items or structures located outside of the MCCO Additional Project Area but within the wider study area, two are assessed in **Table 7.2** to have significance on a local level; the 'Wybong Community Hall' and former Church are assessed to have historical, associative, and/or social significance. In addition, early extant estates that are intact, and that are associated with local families with historical associations to the area (including 'Yarlett', 'Collareen' and 'Castle Hill') have also been assessed to have historical significance on a local level, as they are demonstrative of the early settlement and development of the area. These properties may also be of interest for their historical associations with previous owners/occupiers, but are unlikely to meet the criteria for associative significance on a local level.

Other properties or structures, including the relocated slab huts from Anvil Hill and the highly modified post office at the end of Wybong Post Office Road, may also be of local historical interest. However, the significant modification and/or relocation of these specific items has adversely impacted their historical significance, and they are unlikely to meet the any of the seven criteria used to assess significance.

It is reiterated, however, that the significance assessment of potential items located outside of the MCCO Additional Project Area and presented in **Table 7.2** is a preliminary significance assessment only, with no detailed significance assessment undertaken as part of this HHA (based on the requirements of the project SEARs, as no impacts are proposed to these potential items) (refer to **Section 9.0**).

More broadly, the potential heritage resource of the study area generally reflects the documented history of the surrounding region (discussed in **Section 4.0**), which indicates that the land has predominantly been utilised by graziers, agriculturalists and in recent times the mining industry. The potential historical heritage resource of the area generally reflects its history as cleared agricultural and pastoral land and the importance of dairying as a local land use. The historical heritage resource is therefore considered to be typical of the region.

The historical heritage evidence of the study area is demonstrative of the documented pattern of settlement and use from the mid-19th century onward, including settlement of the area by Europeans and subsequent use of the land for pastoral and agricultural activities. Sheep and cattle grazing were undertaken across the wider study area, supplemented by agricultural activities with the cultivation of crops and, in discrete areas, viticulture. Evidence of former house sites, sheds, yards and other rural structures are similarly demonstrative of the pattern of land use and historical development of the area.

Extant fence lines indicate the enclosing of the landscape to make paddocks and are typical of fences found throughout the Hunter Valley and rural NSW. Farm dams provide sources of fresh water for dairy cattle and their location relative to fences can help understand how the landscape was used for dairying.

The current study area and the surrounding landscape have been fairly intensively studied, surveyed and assessed as part of the historical heritage assessment and environmental assessment process associated with approved coal mining projects currently operating (or proposed) in the area; existing assessments already undertaken for the operational Mangoola Coal Mine (of which the current MCCO Project is a continuation) have been utilised in the preparation of this report. Additionally, similar assessments have been undertaken for other mines including Mount Arthur, Mount Pleasant and Bengalla to the east, and Drayton South to the southeast.

Based on the overarching historical context, as well as the more recent assessment context, any additional, as yet unidentified, heritage items that may be present within the wider study area are highly likely to be similar to those items/elements already identified and described within this HHA.

The outcomes of the significance assessment presented above are summarised in **Table 7.3** below.

Table 7.3 Summary of the significance assessment presented in this HHA

Item ID	Name and Address	Location in Relation to the MCCO Project	Assessment of Significance
Located within the MCCO Additional Project Area			
a	'Yards and structures' Lot 655 DP 263080	Within the MCCO Proposed Disturbance Area	No identified significance.
b	"Millville", structures, yards and tank' Lot 41 DP 531030	Within the MCCO Proposed Disturbance Area	No identified significance.
c	'Structures' Lot 3 DP 7590	Within the MCCO Proposed Disturbance Area	No identified significance.
d	Wybong Post Office Road	Partially within the MCCO Proposed Disturbance Area	No identified significance.
e	Agricultural equipment Lot 144 DP 750968	Outside of the MCCO Proposed Disturbance Area but within the MCCO Additional Project Area	No identified significance.
Located outside of the MCCO Additional Project Area but within the wider study area			
f	'Yarlett and structures' Lot 122 DP 585122	Outside of the MCCO Additional Project Area but within the wider study area	Historical significance on a local level. Of potential interest for its historical associations with previous owners/occupiers, but are unlikely to meet the criteria for associative significance on a local level.

Item ID	Name and Address	Location in Relation to the MCCO Project	Assessment of Significance
g	<p>'Brogheda Ruins, Shed and Silo'</p> <p>Part of Lot 101 DP 1116579 and Part of Lot 1001 DP 1162479 (locally listed heritage item)</p>	Outside of the MCCO Additional Project Area but within the wider study area	Listed heritage item (established heritage significance on a local level).
h	<p>'Dwelling, being the former Wybong Post Office and shed'</p> <p>Lot 122 DP 665563</p>	Outside of the MCCO Additional Project Area but within the wider study area	Of potential historical interest, but unlikely to meet the criteria for historical significance on a local level.
i	<p>'Wybong Public Hall'</p> <p>Lot 100 DP 1111213</p>	Outside of the MCCO Additional Project Area but within the wider study area	Historical, associative and social significance on a local level.
j	<p>'Dwelling, being a relocated slab hut from Anvil Hill and marked tree (non-Aboriginal)'</p> <p>Lot 1 DP 240086</p>	Outside of the MCCO Additional Project Area but within the wider study area	Of potential historical interest, but unlikely to meet the criteria for historical significance on a local level.
k	<p>'Yarraman, being a relocated slab hut from Anvil Hill',</p> <p>Lot 2 DP 240086</p>	Outside of the MCCO Additional Project Area but within the wider study area	Of potential historical interest, but unlikely to meet the criteria for historical significance on a local level.
l	<p>'Wybong Cemetery'</p> <p>Lot 7004 DP 93976 and Lot 80, 81, 82, 83, 84, 85, 86 DP 7509696 (locally listed heritage item)</p>	Outside of the MCCO Additional Project Area but within the wider study area	Listed heritage item (established heritage significance on a local level).
m	<p>'Dwelling (Rosedale) and structure (shed)'</p> <p>Lot 18 DP 750969</p>	Outside of the MCCO Additional Project Area but within the wider study area	<p>No identified heritage significance.</p> <p>Of potential interest for its historical associations with previous owners/occupiers, but are unlikely to meet the criteria for associative significance on a local level.</p>
n	<p>'Former Church of St Thomas Aquinas'</p> <p>Lot 1 DP 910116</p>	Outside of the MCCO Additional Project Area but within the wider study area	Historical and social significance on a local level.

Item ID	Name and Address	Location in Relation to the MCCO Project	Assessment of Significance
o	'Collareen' Lot 6 DP 750969	Outside of the MCCO Additional Project Area but within the wider study area	Historical significance on a local level. Of potential interest for its historical associations with previous owners/occupiers, but are unlikely to meet the criteria for associative significance on a local level.
p	'Castle Hill' Lot 9 DP 750968 ⁴	Outside of the MCCO Additional Project Area but within the wider study area	Historical significance on a local level. Of potential interest for its historical associations with previous owners/occupiers, but are unlikely to meet the criteria for associative significance on a local level.

7.4.1 Historical (non-Aboriginal) Archaeology

As discussed at **Section 7.3**, the overall historical (non-Aboriginal) archaeological potential of the MCCO Additional Project Area is assessed as very low, and the anticipated archaeological resource of the MCCO Additional Project Area is unlikely to yield information that would be particularly meaningful, or that would enhance or further historical information that is already available via other resources.

⁴ Note: this property was not subject to visual inspection due to access restrictions. Its potential heritage significance has therefore not been fully assessed or revised as part of this HHA.

8.0 Heritage Impact Statement

This section provides a heritage impact statement for listed and potential heritage sites/items within the study area.

The heritage impact statement identifies the potential impacts from the MCCO Project on all known and potential heritage sites/items identified within the study area, including those within the MCCO Additional Project Area and the MCCO Proposed Disturbance Area, as well as those within the wider study area. The impacts are assessed against the assessed heritage significance of the respective elements.

8.1 Potential Impacts of the MCCO Project

The potential impacts of the MCCO Project are considered in terms of direct impacts and indirect impacts.

Direct Impacts

Direct impacts are considered to be physical impacts, including removal/demolition. Potential direct impacts are discussed at **Section 8.1.1**. For the purposes of this HHA, it is considered that the items/elements within the MCCO Proposed Disturbance Area would be subject to direct impacts as a result of the MCCO Project.

Indirect Impacts

Indirect impacts are considered to include vibration from blasting; which has the theoretical potential to damage/destroy/disturb historical heritage items. Also considered to be indirect impacts are impacts to significant views or vistas.

For the purposes of this HHA, it is considered that items/elements outside of the MCCO Proposed Disturbance Area but within the wider study area could potentially be subject to indirect impacts.

With regards to the blasting levels developed for the Project and heritage items/potential heritage items contained therein, the following is noted in the MCCO Project Blasting Impact Assessment prepared by EnviroStrata Consulting Pty Ltd (2019):

'The identified historic heritage items are located at variable distances ranging from 1,680 to 3,490 m from the Proposed Additional Mining Area. These heritage items vary greatly in the materials used, their construction and state of disrepair... Considering the variety of structures, the applicable assessment criteria are 5 mm/s.'

As per existing practice, Mangoola will manage blasts to avoid impacts on sensitive receivers including heritage sites. The practices that need to be implemented to achieve compliance with vibration limits at heritage sites are well understood and can be readily and consistently implemented. With these proposed controls in place, as demonstrated in the blasting assessment for the MCCO Project, impacts on heritage sites through blast vibration are not predicted.

Potential indirect impacts are discussed at **Section 8.1.2** and **8.1.3**.

8.1.1 Potential Impacts within the MCCO Proposed Disturbance Area - Direct Impacts

This section addresses the potential direct impacts resulting from the MCCO Project to each of the non-listed site/items identified within the MCCO Proposed Disturbance Area and proposes a management strategy to mitigate any such identified impacts.

The MCCO Project will result in the following direct impacts:

- the removal of all buildings, structures and elements within the MCCO Proposed Disturbance Area identified in **Figure 1.3**. This includes the removal of 'Millville', and the removal of all ancillary structures, sheds, stockyards, agricultural equipment and miscellaneous items within Lot 655 DP 263080, Lot 3 DP 7590, Lot 41 DP 531030 and Lot 144 DP 750968
- the re-routing of part of Wybong Post Office Road, and therefore the loss of the existing alignment and fabric of part of the road
- the removal and/or significant disturbance of any potential and as yet unidentified historical (non-Aboriginal) archaeological resource within the MCCO Proposed Disturbance Area.

The significance assessment presented in **Table 7.1** concluded that the potential heritage items/elements identified within the MCCO Proposed Disturbance Area do not meet the criteria for heritage significance on either a local or state level, and do not have any identified research potential. Similarly, the historical (non-Aboriginal) archaeological potential of the MCCO Proposed Disturbance Area has been assessed as very low, with any archaeological resource present unlikely to have any significance or research potential.

Based on this assessment, the above described direct impacts within the MCCO Proposed Disturbance Area will not result in an adverse impact to the historical heritage of the wider study area or the local area more broadly.

Items/ elements of historical interest within the MCCO Proposed Disturbance Area have been sufficiently documented and recorded as part of the preparation of this HHA, and it is considered that further assessment and/or investigation of these items/elements would not result in any additional information or data that would be of benefit or contribute meaningfully to the existing historical record of the local area.

8.1.2 Potential Impacts within the Wider Study Area (outside the MCCO Proposed Disturbance Area) - Indirect Impacts

The *Blasting Impact Assessment for Mangoola Coal Continued Operations Project*, prepared by Enviro Strata Consulting Pty Ltd (Enviro Strata Consulting 2018) undertook modelling to assess the potential impact of vibration caused by blasting. This assessment was based on the following criteria for heritage items (Enviro Strata 2019):

'Considering the variety of structures, the applicable assessment criteria are 5 mm/s and 133 dBL.

The specified assessment criteria are well below the blast damage levels as discussed in Section 6.2.1 (i.e. the lowest transient vibration value for cosmetic damage is estimated as 15 mm/s at 4 Hz) and highlighted in Appendix 1. The assessment criteria are in line with the ACARP Report (No. C14057) findings for Heritage Sites, which recommends 'safe' vibration limits such as those used by British Standard BS7385. Note that these assessment criteria are not limits that must be met, but indicate the levels at which no impacts are predicted.'

Table 8.1 details the listed heritage items located outside the MCCO Proposed Disturbance Area and within the wider study area, and considers them in terms of potential vibration impacts.

Table 8.2 details the potential (un-listed) heritage items, sites or elements located outside the MCCO Proposed Disturbance Area and within the wider study area, and considers them in terms of potential vibration impacts. As the agricultural equipment located within Lot 144 DP 750968 and 'Rosedale' (dwelling and shed) have not been assessed to have heritage significance (refer to **Section 7.0**), they are excluded from **Table 8.2**.

Table 8.1 Predicted range of ground vibration for listed heritage items located within the wider study area (outside the MCCO Proposed Disturbance Area)

Item Name	Location	Listing	Predicted Range of Maximum Ground Vibration (mm/s)
'Brogheda'	Part of Lot 101 DP 1116579 and Part of Lot 1001 DP 1162479	Local Muswellbrook LEP Item ID I50	0.1 to 1.0
'Wybong Cemetery'	Lot 7004 DP 93976, Lot 80, 81, 82, 83, 84, 85, 86 DP 7509696	Local Muswellbrook LEP Item ID I128	0.1 to 1.2

Table 8.2 Predicted range of ground vibration for non-listed potential heritage items located within the wider study area (outside the MCCO Proposed Disturbance Area)

Item Name	Location	Predicted Range of Maximum Ground Vibration (mm/s)
'Wybong Public Hall'	Lot 100 DP 1111213	0.1 to 1.4
'Yarraman'	Lot 2 DP 240086	0.1 to 1.2
'Yarlett'	Lot 122 DP 585122	0.2 to 2.1
'Collareen'	Lot 6 DP 750969	0.1 to 1.0
'Former Church of St Thomas Aquinas'	Lot 1 DP 910116	0.1 to 1.0
'Castle Hill'	Lot 9 DP 750968	0.1 to 1.2
'Dwelling'	Lot 1 DP 240086	0.1 to 1.1
'Structure'	Lot 122 DP 665563	0.1 to 1.1

Vibration exposures for the listed and non-listed potential heritage items are no higher than 2.1 mm/s. This is below the applicable criteria of 5 mm/s. This data is for all modelled charge masses.

Based on the above assessment data, no indirect impacts will occur to the listed or potential heritage items, sites or elements located within the wider study area as a result of the MCCO Project.

8.1.3 Potential Impacts to Views and/or Vistas – Indirect

As part of the targeted visual inspections and general field survey undertaken, significant views or vistas were identified within the MCCO Additional Project Area in relation to:

- views to and from the eastern (principal) façade of ‘Brogheda’, which is locally listed
- views from the ‘Wybong Cemetery’, which is locally listed.

The MCCO Proposed Disturbance Area, as shown in **Figure 1.2** and **Figure 1.3**, will be located to the south of ‘Brogheda’, and approximately 2.6 kilometres to the south/southwest. The surrounding topography means that it is highly unlikely that the MCCO Project will be visible from the ‘Brogheda’ property more generally, and will not be visible from principal views from the existing dwelling. As such, the MCCO Project will not result in any works or activities that will be visible within existing significant views to and from the dwelling’s principal (eastern) elevation.

Similarly, the MCCO Proposed Disturbance Area will be located approximately 1.8 kilometres to the east of ‘Wybong Cemetery’ (refer to **Figure 1.2**). It is noted that that topography and density of vegetation surrounding the cemetery prohibits visibility from the cemetery to the MCCO Additional Project Area when facing east. Given the distance between the cemetery and the proposed Additional Mining Area, as well as the aforementioned topography and vegetation buffer to the east, the MCCO Project will not result in any works or activities that will be visible within existing views from the cemetery.

Ancillary works, such as road upgrades, will not result in any visual impacts to any listed or potential heritage items due to their minor nature.

9.0 Conclusion and Recommendations

This HHA has been prepared to meet the relevant SEAR for the MCCO Project with regards to historical (non-Aboriginal) heritage. It has also been prepared to address input received on the SEARs from OEH.

This assessment has considered the historical context of the study area defined in **Figure 1.3**, and has provided an outline of all listed heritage items located within this study area. Through historical research, a review of previous heritage and archaeological assessments, and a targeted visual inspection of the study area, a number of potential historical heritage items, elements or sites were identified.

Direct Impacts

A significance assessment of potential historical heritage items, elements or sites identified that would be subject to direct impacts as part of the MCCO Project was prepared. None of the potential historical heritage items, elements or sites located within the MCCO Proposed Disturbance Area and identified in the preparation of this HHA were assessed to meet any of the seven criteria for heritage significance, as defined by the NSW Heritage Branch (now Division).

As none of the potential historical heritage items, elements or sites identified were assessed to be of heritage significance, the heritage impact statement prepared concluded that the MCCO Project would not result in any adverse direct historical heritage impacts.

No potentially significant conservation areas, natural heritage areas, gardens, landscapes, or trees were identified within the MCCO Proposed Disturbance Area, and no such areas or elements have previously been identified within or in the vicinity of the current study area as part of any previous assessments undertaken.

No further management recommendations are therefore required with regard to historical heritage for any of the properties, items, or structures located within the MCCO Proposed Disturbance Area and assessed within this report.

In addition to the above, the historical (non-Aboriginal) archaeological potential of the MCCO Additional Project Area was assessed and was determined to be very low, with any archaeological resource present unlikely to have any significance or research potential. On this basis, it was concluded that the MCCO Project would not result in any identified adverse historical archaeological impacts.

Indirect Impacts

A broader significance assessment was also prepared for the wider study area, which considered the significance of listed and potential heritage items, elements or sites that would be subject to indirect impacts as a result of the MCCO Project. This HHA identified potential indirect impacts associated with the MCCO Project to be potential impacts resulting from vibration due to blasting activity, and potential impacts to any identified significant views or vistas.

The significance assessment determined that the agricultural equipment located within Lot 144 DP 750968 and 'Rosedale' (dwelling and shed) did not have any identified heritage significance and are therefore no longer considered to be potential heritage items. The agricultural equipment and 'Rosedale' are therefore able to be removed and/or otherwise impacted without resulting in any adverse impacts to fabric or elements of heritage significance. No further management recommendations are made for the agricultural equipment or 'Rosedale'.

An assessment of the potential impacts of blasting on the remaining listed and potential historical heritage items, properties or sites within the wider study area was prepared by Enviro Strata (2019). This assessment concluded that vibration exposures for the listed and non-listed potential heritage items as a result of the MCCO Project will not be higher than 2.1 mm/s. This is below the applicable criteria of 5 mm/s and therefore no blasting vibration impacts are predicted on heritage sites. This data is for all modelled charge masses.

The only significant views or vistas identified within the study area were those to and from the eastern (principal) façade of 'Brogheda' and views from the 'Wybong Cemetery'. No potential impacts to these views/vistas as a result of the MCCO Project were identified.

No potentially significant conservation areas, natural heritage areas, gardens, landscapes, or trees were identified within the wider study area, and no such areas or elements have previously been identified within or in the vicinity of the current study area as part of any previous assessments undertaken.

Overall, no indirect impacts to any listed or potential historical heritage items, properties or sites within the wider study area have been identified as a result of this HHA.

9.1 Recommendations

Based on the above assessments, no further recommendations for assessment, investigation or recording are made for the MCCO Project with regards to historical heritage, with the exception of the below management measures. Management measures are summarised in **Table 9.1**.

Management Measure 1

Based on the significance and impact assessments presented in this report, no management recommendations are required for any of the potential historical heritage items, elements or sites identified as relevant to the MCCO Project, provided that the works associated with the MCCO Project are consistent with those outlined in this report (refer to **Table 9.1**).

Management Measure 2

In the unlikely event that unexpected historical (non-Aboriginal) archaeological remains are discovered during works at the project area they should be managed with reference to the standard protocols and procedures of Section 146 of the *Heritage Act* 1977, including providing the NSW Heritage Council with notification of the discovery of any 'relics'. The advice of a suitably qualified archaeologist should be sought, to determine if further assessment and investigation may be required.

Management Measure 3

Based on the assessment presented in this HHA, there are no further requirements for investigation or assessment with regards to historical heritage in relation to the MCCO Project. However, relevant employees, contractors and subcontractors that work on the MCCO Project should be made aware of potential historical (non-Aboriginal) heritage and archaeological issues associated with the MCCO Project and their obligations and requirements in relation to the relevant provisions of the *Heritage Act* 1977. This information can be most effectively provided within mandatory site inductions provided to employees, contractors and sub-contractors working on the MCCO Project.

It is recommended that the relevant aspects of the unexpected finds procedure detailed in Management Measure 2 be incorporated into site inductions for the reference of relevant employees, contractors and subcontractors that work on the MCCO Project.

Management Measure 4

As already noted at **Section 7**, properties, items or structures located outside the MCCO Additional Project Area but within the wider study area have not been subject to detailed significance assessments as part of this HHA (based on the requirements of the project SEARs). It is therefore recommended that in the event that any future proposals have the potential to impact these properties, an assessment of potential heritage impacts should be undertaken. These properties are identified as Items F to E (excluding Item M – ‘Rosedale’) in **Table 9.1** below.

Table 9.1 Summary of management measures recommended in this HHA

Item ID	Name and Address	Location in Relation to the MCCO Project	Assessment of Significance	Recommended Management Measures
Located within the MCCO Additional Project Area				
a	‘Yards and structures’ Lot 655 DP 263080	Within the MCCO Proposed Disturbance Area	No identified significance.	None.
b	“‘Millville”, structures, yards and tank’ Lot 41 DP 531030	Within the MCCO Proposed Disturbance Area	No identified significance.	None.
c	‘Structures’ Lot 3 DP 7590	Within the MCCO Proposed Disturbance Area	No identified significance.	None.
d	Wybong Post Office Road	Partially within the MCCO Proposed Disturbance Area	No identified significance.	None.
e	Agricultural equipment Lot 144 DP 750968	Outside of the MCCO Proposed Disturbance Area but within the MCCO Additional Project Area	No identified significance.	None.

Item ID	Name and Address	Location in Relation to the MCO Project	Assessment of Significance	Recommended Management Measures
Located outside of the MCO Additional Project Area but within the wider study area				
f	‘Yarlett and structures’ Lot 122 DP 585122	Outside of the MCO Additional Project Area but within the wider study area	Historical significance on a local level. Of potential interest for its historical associations with previous owners/occupiers, but are unlikely to meet the criteria for associative significance on a local level.	None in relation to the MCO Project. In the event that any future proposals (including any modifications to the current scope of the MCO Project) will or are likely to impact this potential item, further assessment may be required.
g	‘Brogheda Ruins, Shed and Silo’ Part of Lot 101 DP 1116579 and Part of Lot 1001 DP 1162479 (locally listed heritage item)	Outside of the MCO Additional Project Area but within the wider study area	Listed heritage item (established heritage significance on a local level).	None in relation to the MCO Project. In the event that any future proposals (including any modifications to the current scope of the MCO Project) will or are likely to impact this potential item, further assessment may be required.
h	‘Dwelling, being the former Wybong Post Office and shed’ Lot 122 DP 665563	Outside of the MCO Additional Project Area but within the wider study area	Of potential historical interest, but unlikely to meet the criteria for historical significance on a local level.	None in relation to the MCO Project. In the event that any future proposals (including any modifications to the current scope of the MCO Project) will or are likely to impact this potential item, further assessment may be required.
i	‘Wybong Public Hall’ Lot 100 DP 1111213	Outside of the MCO Additional Project Area but within the wider study area	Historical, associative and social significance on a local level.	None in relation to the MCO Project. In the event that any future proposals (including any modifications to the current scope of the MCO Project) will or are likely to impact this potential item, further assessment may be required.

Item ID	Name and Address	Location in Relation to the MCCO Project	Assessment of Significance	Recommended Management Measures
j	<p>'Dwelling, being a relocated slab hut from Anvil Hill and marked tree (non-Aboriginal)'</p> <p>Lot 1 DP 240086</p>	Outside of the MCCO Additional Project Area but within the wider study area	Of potential historical interest, but unlikely to meet the criteria for historical significance on a local level.	<p>None in relation to the MCCO Project.</p> <p>In the event that any future proposals (including any modifications to the current scope of the MCCO Project) will or are likely to impact this potential item, further assessment may be required.</p>
k	<p>'Yarraman, being a relocated slab hut from Anvil Hill',</p> <p>Lot 2 DP 240086</p>	Outside of the MCCO Additional Project Area but within the wider study area	Of potential historical interest, but unlikely to meet the criteria for historical significance on a local level.	<p>None in relation to the MCCO Project.</p> <p>In the event that any future proposals (including any modifications to the current scope of the MCCO Project) will or are likely to impact this potential item, further assessment may be required.</p>
l	<p>'Wybong Cemetery'</p> <p>Lot 7004 DP 93976 and Lot 80, 81, 82, 83, 84, 85, 86 DP 7509696 (locally listed heritage item)</p>	Outside of the MCCO Additional Project Area but within the wider study area	Listed heritage item (established heritage significance on a local level).	<p>None in relation to the MCCO Project.</p> <p>In the event that any future proposals (including any modifications to the current scope of the MCCO Project) will or are likely to impact this potential item, further assessment may be required.</p>
m	<p>'Dwelling (Rosedale) and structure (shed)'</p> <p>Lot 18 DP 750969</p>	Outside of the MCCO Additional Project Area but within the wider study area	<p>No identified heritage significance.</p> <p>Of potential interest for its historical associations with previous owners/occupiers, but are unlikely to meet the criteria for associative significance on a local level.</p>	None.

Item ID	Name and Address	Location in Relation to the MCCO Project	Assessment of Significance	Recommended Management Measures
n	‘Former Church of St Thomas Aquinas’ Lot 1 DP 910116	Outside of the MCCO Additional Project Area but within the wider study area	Historical and social significance on a local level.	None in relation to the MCCO Project. In the event that any future proposals (including any modifications to the current scope of the MCCO Project) will or are likely to impact this potential item, further assessment may be required.
o	‘Collareen’ Lot 6 DP 750969	Outside of the MCCO Additional Project Area but within the wider study area	Historical significance on a local level. Of potential interest for its historical associations with previous owners/occupiers, but are unlikely to meet the criteria for associative significance on a local level.	None in relation to the MCCO Project. In the event that any future proposals (including any modifications to the current scope of the MCCO Project) will or are likely to impact this potential item, further assessment may be required.
p	‘Castle Hill’ Lot 9 DP 750968 ⁵	Outside of the MCCO Additional Project Area but within the wider study area	Historical significance on a local level. Of potential interest for its historical associations with previous owners/occupiers, but are unlikely to meet the criteria for associative significance on a local level.	None in relation to the MCCO Project. In the event that any future proposals (including any modifications to the current scope of the MCCO Project) will or are likely to impact this potential item, further assessment may be required.

⁵ Note: this property was not subject to visual inspection due to access restrictions. Its potential heritage significance has therefore not been fully assessed or revised as part of this HHA.

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10.1 Newspaper Articles

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