Historic Heritage Management Plan

April 2021

DOCUMENT CONTROL

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CIRCULATION	**Organisation**		
	Department of Planning, Industry and Environment Cessnock City Council Heritage NSW		

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1 INTRODUCTION

Austar Coal Mine Pty Ltd (Austar), a subsidiary of Yancoal Australia Limited (Yancoal), owns the Austar Coal Mine, an underground coal mine located approximately 10 kilometres southwest of Cessnock in the Lower Hunter Valley in NSW (refer to **Figure 1.1**). The Austar Coal Mine incorporates the former Pelton, Ellalong, Cessnock No. 1 (Kalingo) and Bellbird South Collieries and includes coal extraction, handling, processing and rail and road transport facilities (refer to **Figure 1.1**).

Extensive mining has been undertaken within the Austar Coal Mine since 1916. Historical mining was predominantly via bord and pillar mining and more recently via conventional longwall mining and longwall top coal caving (LTCC) methods. Mining within the Bellbird South areas (Southland, Stage 1, Stage 2 and LWB1-B7, refer to **Figure 1.1**) was approved by the Minister for Urban Affairs and Planning in 1996 under DA 29/95, while mining of Stage 3 was approved by the Minister for Planning in 2009 under Project Approval 08_0111. Longwall mining commenced in the Ellalong Colliery area in 1983 and has subsequently progressed into the Bellbird South and the Stage 3 areas.

Most recently, mining commenced in the Bellbird South LWB1-B7 mining area in 2016 under DA 29/95 (as modified) and was completed in February 2020. Longwall panels B1 and B7 have not been extracted. Austar mining areas are shown in **Figure 1.1**.

On 30 March 2020, the Austar Coal Mine transitioned to care and maintenance, with cessation of mining and coal processing activities. On 26 February 2021, a decision was made by the Yancoal board to transition the Austar Coal Mine from care and maintenance to closure. Nevertheless, active water management, mine ventilation and mine inertisation remain key activities and this revision of the Historic Heritage Management Plan has been revised to document the management of heritage items whilst the site is in closure.

Heritage items documented in this management plan were identified during the Environmental Assessment process for Stage 3 mining. As part of detailed closure planning, detailed planning on the recording, demolition or ongoing management of heritage items in and around Austar mine will occur. It is envisaged that this will lead to further updates of this management plan.

The 2021 review of most Austar environmental management plans has resulted in significant restructure of the documents to improve readability and provide more consistency between plans. Changes to actual content have been limited to any amendments required to reflect the closed status of the site and to align content with the requirements of PA 08_0111 and DA 29/95.

The surface impact area defined by the predicted 20 millimetres subsidence contour of the Stage 3 mining area, incorporating the LWA7-A10 Modification, is shown in **Figure 1.1** and **Figure 1.2**.

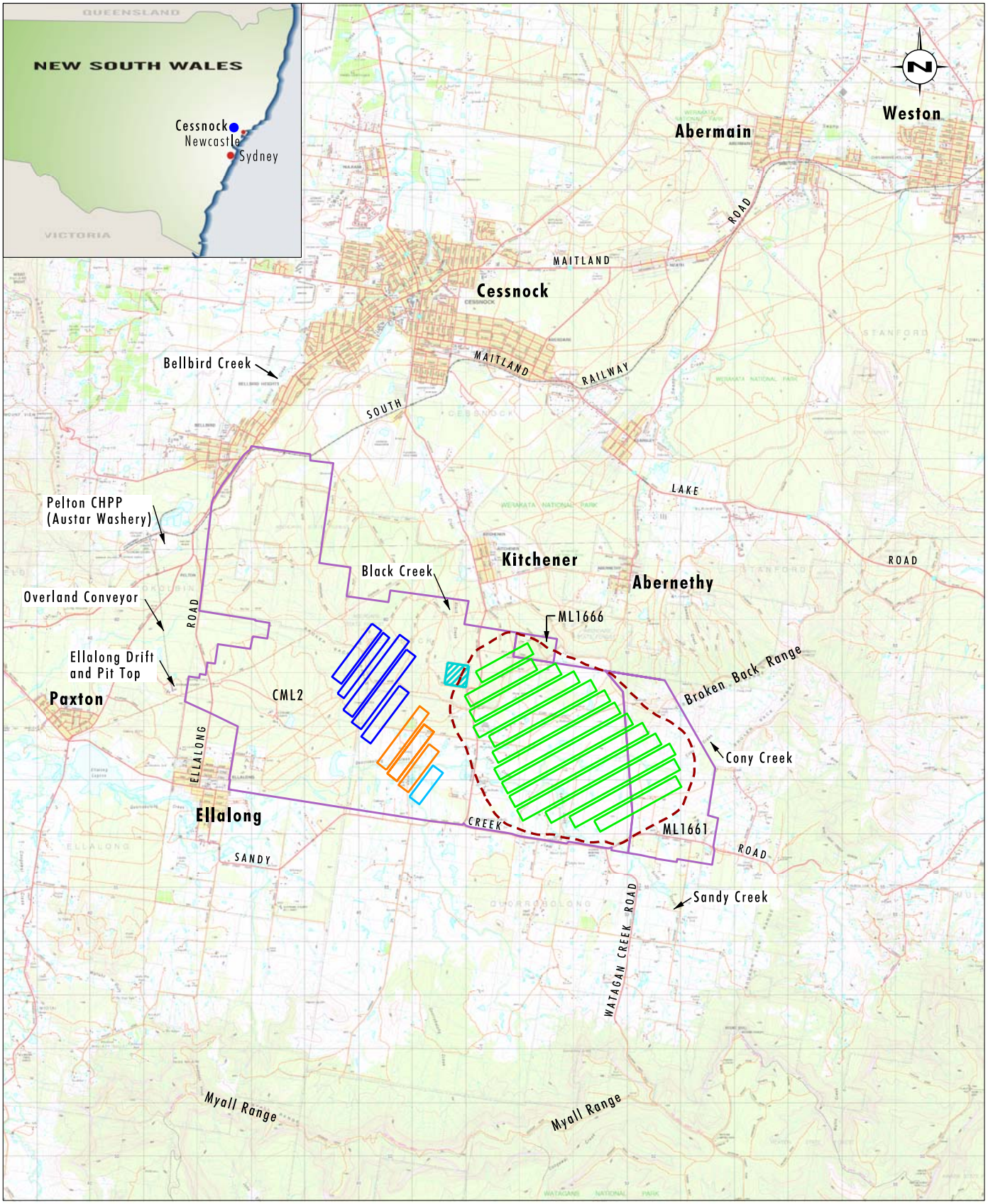

Image Source: Topo Maps: LPI NSW
Data Source: Longwall Layout: Austar Coal Mine

0 1.0 2.5 3.0km
1:100 000

Legend

- Layout for Stage 1 Longwall Panels
- Layout for Stage 2 Longwall Panels
- Layout for Stage 2 Extension Longwall Panel
- Layout for Stage 3 Longwall Panels, incorporating LW A7-A10 Modification
- Revised 20mm Subsidence Contour for Modified Stage 3 Longwall Layout
- Approved Surface Infrastructure Site
- Mining Lease Boundary

FIGURE 1.1

Austar Mine Complex
Locality Plan

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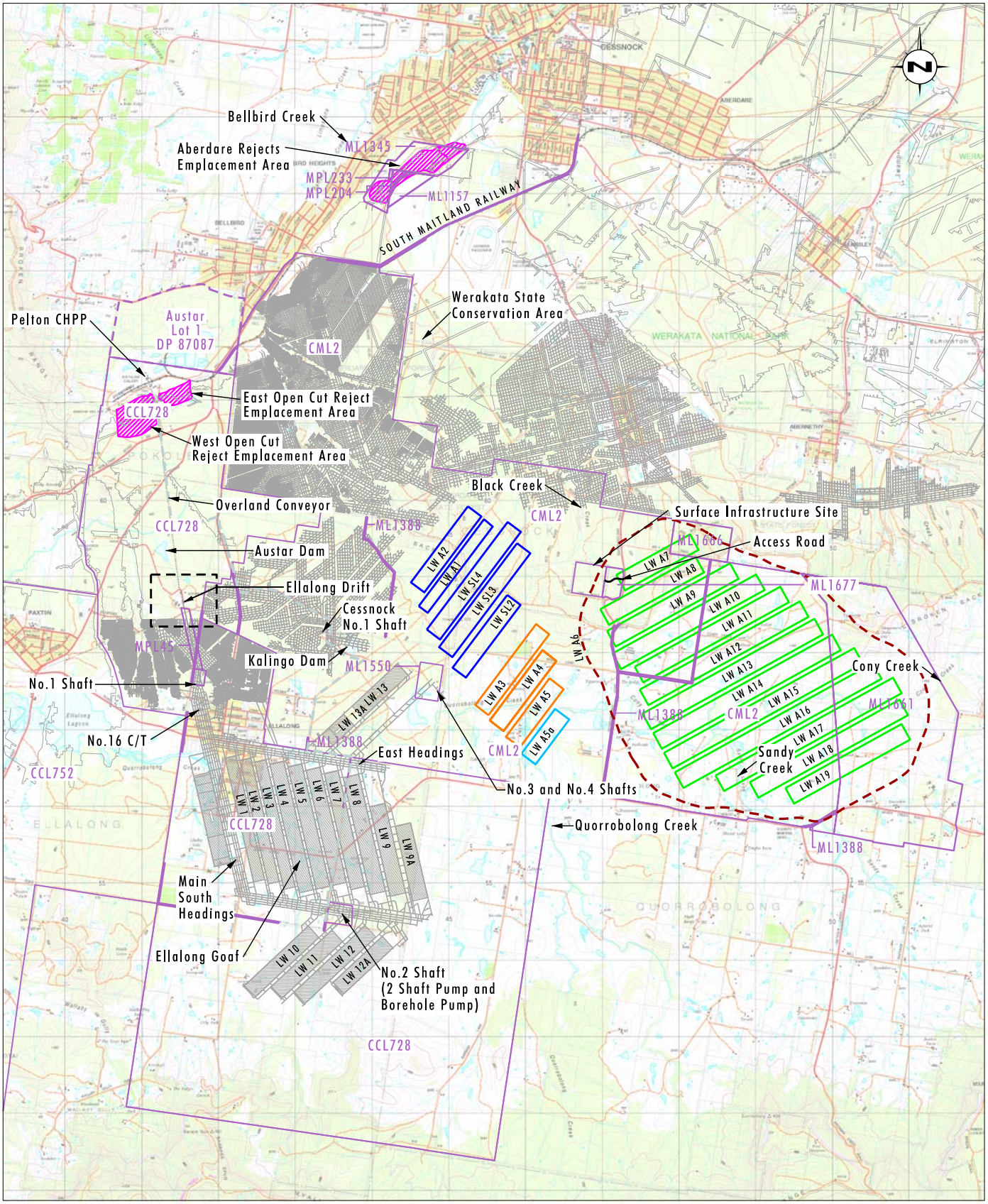
20131023 13.43



Data Source: Topo Maps: LPI NSW, Longwall Layouts: Austar Coal Mine

0 1 2 3km
1:70 000

Legend

- Layout for Stage 1 Longwall Panels (complete)
- Layout for Stage 2 Longwall Panels (complete)
- Layout for Stage 2 Extension Longwall Panel (complete)
- Layout for Stage 3 Longwall Panels, incorporating LW A7-A10 Modification
- Revised 20mm Subsidence Contour for Modified Stage 3 Longwall Layout
- Reject Emplacement Areas
- Old Workings
- Mining Lease Boundary
- Austar owned CHPP Land
- Water Pipeline

FIGURE 1.2

Austar Mine Complex

1.1 Background

The *Historical Heritage Assessment: Austar Coal Mine Project, Stage 3* (Umwelt 2008a) has previously been prepared as part of the Environmental Assessment (EA) for Stage 3 of the mining operations at the Austar Coal Mine. The 2008 assessment examined the European heritage features associated with the project with the aim of assessing and evaluating the potential heritage impacts associated with the project. The 2008 report identified the heritage sites contained within the project area and assessed the significance of any impacts on these sites potentially resulting from the project.

The 2008 Heritage Assessment report assessed 18 potential heritage sites/items located within the project area (refer to **Section 3**). Of these 18 potential heritage items, 16 sites were identified as being located within, or in the vicinity of, the Surface Infrastructure Site or the predicted 20 millimetre subsidence contour area (Items 1 to 12, 14 and 16 to 18) that encompasses the underground mining area and may potentially experience some minor subsidence impacts. No sites/items subject to any form of statutory heritage listing were identified within the project area. The 2008 assessment should be referred to for the historical context of the project, survey results and significance assessment.

As a result of the subsequent modifications to PA 08_0111, a number of the potential historical heritage items identified in the 2008 assessment will no longer be affected by the mining operations (including Items 8 artefact scatter, 16 potential homestead site and 17 potential homestead site; refer to **Figure 1.3**). One additional potential historical heritage item falls within the LWA7–A10 Modification mining area (Item 23 - refer to **Figure 1.3**). Notably, the predicted mine subsidence movements based on the LWA7-A10 Modification mine plan are similar to those for the originally approved Stage 3 mine plan (MSEC 2013:9). As a result, the recommended heritage management strategy for the *Austar Coal Mine Project – Stage 3 Modification Environmental Assessment* (Umwelt 2011) and *Austar Coal Mine LWA7-A10 Modification – Stage 3 Area Environmental Assessment* (Umwelt 2013) remains essentially the same as presented in the 2008 Historical Heritage Assessment (Umwelt 2008).

Figure 1.3 illustrates the locations of the potential heritage items identified as part of the 2008 assessment in relation to the 20 millimetre subsidence contour for the Modified Stage 3 longwall layout (MOD 3) and Surface Infrastructure Site.

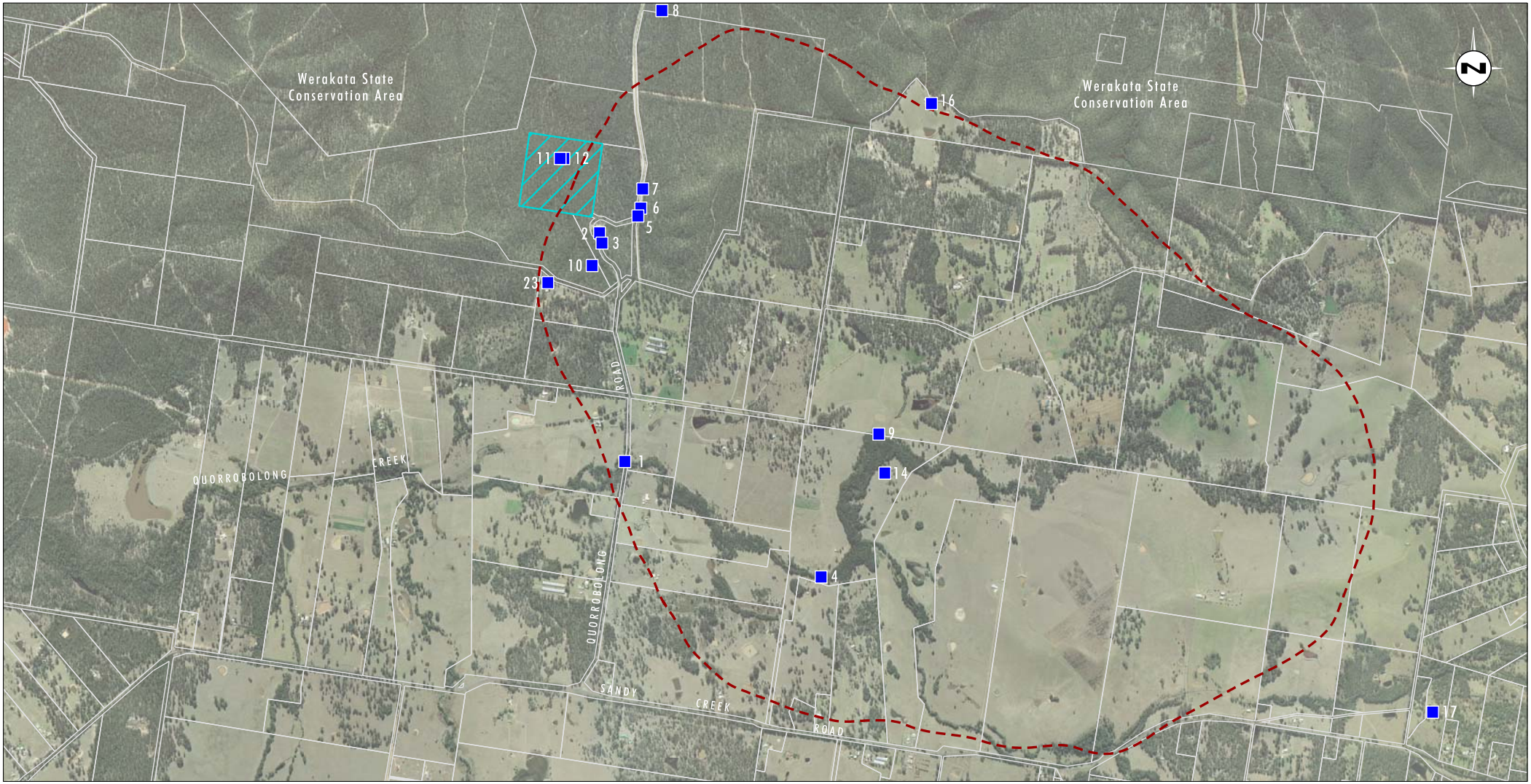


Image Source: AAM Hatch (2006)
Data Source: Austar Coal Mine (2013), LPI NSW (2009)

0 0.5 1.0 1.5km
1:30 000

Legend

- Revised 20mm Subsidence Contour for Modified Stage 3 Longwall Layout
- Approved Surface Infrastructure Site
- Potential Heritage Item

FIGURE 1.3

Plan showing location of Potential Heritage Items in relation to 20mm Subsidence Contour

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20131016 9.18

1.2 Purpose and Scope

This HHMP addresses the historical heritage management requirements associated with the Stage 3 Project (the project area) and other procedural requirements of PA 08_0111 in relation to specified heritage matters outside the project area. It does not include heritage management strategies with regards to Aboriginal cultural heritage. These are addressed in the *Aboriginal Cultural Heritage Management Plan: Austar Mining Complex* (Umwelt 2021).

This report has been prepared to address Schedule 4 Condition 11 of the Austar Coal Mine Project – Stage 3 Project Approval (refer to **Section 1.3**) and the recommendations of the *Historical Heritage Assessment: Austar Coal Mine Project Stage 3* (Umwelt 2008a), *Austar Coal Mine Project – Stage 3 Modification EA* (Umwelt 2011) and *Austar Coal Mine LWA7-A10 Modification – Stage 3 Area EA* (Umwelt 2013).

The 2008 Historical Heritage Assessment, 2011 EA and 2013 EA outlined the management strategy for the heritage items assessed as being at risk of impact as a result of the project. This HHMP provides a framework for the implementation of the historical heritage management strategies, procedures and controls that have been formulated to manage the historical heritage sites/items within and in the vicinity to the project area, and other areas specified in PA 08_0111.

This report has also been prepared with regards to the principles contained in *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 1999* (Australia ICOMOS 2000). It also draws on information provided by the Heritage Council of NSW and Heritage Branch, Office of Environment and Heritage (OEH) on the preparation of Conservation Management Plans (CMPs) and Conservation Management Strategies (CMSs) and *Conservation Plan A Guide to the Preparation of Conservation Plans for Places of European Cultural Significance* (Kerr 2004).

1.3 Statutory Requirements

Relevant conditions from PA 08_0111, DA 29/95 and PA 08_0111 Statement of Commitments and where these are addressed in this Plan are provided in **Appendix A**.

Other statutory requirements that may be applicable to the management of historic heritage at Austar include, but are not limited to:

- Commonwealth *Australian Heritage Council Act 2003*;
- NSW *Heritage Act 1997*
- NSW *National Parks and Wildlife Act 1974*;
- Cessnock Local Environmental Plan 2011.

1.4 Stakeholder Consultation

1.4.1 Pre 2021 Consultation

Consultation pre 2021 is discussed in Section 4.1.

1.4.2 2021 Consultation

As the updates to this plan are administrative in nature, consultation has been limited to submitting the revised plan to the Department of Planning, Industry and Environment (DPIE) for approval and informing Cessnock City Council and Heritage NSW of the approved updates.

The management plan approval letter is provided in **Appendix B**.

2 HISTORICAL CONTEXT

2.1 Introduction

As part of NSW heritage assessment procedures it is essential to have a full understanding of a site or item based on its historical and physical context. This section of the HHMP provides a historical context for the project area and its broader locality, to provide an understanding of the significance of any heritage sites within the project area.

This section summarises the historical context of the project area prepared as part of the Historical Heritage Assessment (Umwelt 2008a). The 2008 assessment should be referred to for the full historical context of the project.

2.1.1 Exploration and Settlement

The first recorded journey into the Wollombi Valley was made by John Howe in 1819, although it is likely timber cutters and escaped convicts pre-dated John Howe's journey (Needham 1981:67). The Hunter Valley was opened for free settlement in 1820.

In 1822, Henry Dangar began a detailed survey of the lower Hunter Valley. He continued surveying the remainder of the valley until November 1826. Settlement in the Valley closely followed Dangar's survey (Brayshaw 1984:1.2).

The Newcastle penal settlement was moved to the remote Port Macquarie in 1822, leaving the Hunter Valley to be settled, mainly by newly-arrived free migrants. Early settlement of the Hunter Valley was initially confined to the main valleys, which were all occupied by the 1830s, and only later extended into hill country between 1840 and 1870. The lower valley was characterised by smaller agricultural holdings; the drier upper regions by large pastoral estates. The township of Wollombi was surveyed in 1831 by Heneage Finch, with allotments then offered for sale in 1833 (Hoipo 2004:4).

By the early 1830s, most of the Wollombi Township was settled. Australia's first soldiers settlement was established at Wollombi, with discharged members of the NSW regiments receiving (from 1830) grants of 100 acres along the Wollombi Brook. The main industry in early days of settlement was timber getting, from the cedar and rosewood forests of the region, with wheat, butter, barley, beef, oats and wine also produced. By the 1840s, Wollombi had become the administration and economic centre of Greater Cessnock, with its own courthouse and resident police magistrate. In the 1850s, the population had risen to 1500, while the residents of Cessnock only numbered between 7 and 11 (Crago

1979:38). Mills were established at Wollombi, Ellalong and Broke; however the output of the mills was small. Ellalong had a milling capacity of only eight bushels per hour (Hoipo 2004:6).

Two events shifted the focus from Wollombi to the Hunter River: the construction of the railway through Singleton and Muswellbrook in the 1850s and 1860s; and a period of major flooding in 1857 which caused severe hardship to the settlers of the Wollombi region due to crop losses and soil erosion (Dean-Jones and Mitchell 1993:2).

Land in the Cessnock area was taken up as early as other areas of the Hunter Valley, with Benjamin Blackburn receiving 400 acres near the sites of Kurri Kurri and Pelaw Main on 21 February 1821. A number of estates were established in the 1820s in the Cessnock area, including *Dagworth*, *Blomfield* and *Buttai* (all in the Wallis Creek Valley), *Lochinvar* (Anvil Creek Valley) and the sites of Greta and Branxton. In 1826, John Campbell acquired 2560 acres of land ('*Cessnock*') in the valley of Black Creek. The Cessnock estate was named after John Campbell's ancestral home, Cessnock Castle in Ayrshire, Scotland.

A total of 72 landholders are recorded in the Greater Cessnock area in the 1821-1856 period, of which about 41 per cent were English and 16 per cent were Irish (Parkes *et al* 1979:23). A further 23 per cent were Scottish, about 18 per cent were born in the colony, and there was one German. Eight of the 72 were Sydney based men of capital and business (Parkes *et al* 1979:24).

In 1852, David Campbell (based in North Britain) decided to subdivide and sell the Cessnock estate on Black Creek. For years leading to this, travellers on the Great North Road often stopped at the Black Creek crossing on the Cessnock estate, with this camp site taking on the appearance of a small village (Parkes *et al* 1979:165). Preliminary notice of the sale first appeared in the Maitland Mercury on 15 January 1853, with auction scheduled for 15 February. The sale resulted in the disposal of the entire estate, with the exception of farm block 18 (reserved until 1855, and sold that year) (Parkes *et al* 1979:166).

Settlement of Cessnock intensified after the construction of the Great North Road. Cessnock became a halfway house for travellers with the establishment of the Cessnock Inn in 1856. The area became known just as Cessnock in 1874 (Crago 1979:40). In 1883 George Brown built a sawmill on Main Street, and in 1892 he struck coal on the south-east corner of the old Campbell estate. Towns sprung up throughout the area along the rich Greta coal seam. The South Maitland Railway extended lines to and beyond Cessnock to carry coal from 17 collieries in the area.

The Shire of Cessnock was established in 1906. On 1 November 1926 Cessnock was declared a municipality with a population of 14,000. Further amalgamation occurred in 1956 when the Municipality of Cessnock was merged with the Shire of Kearsley, into the Municipality of Greater Cessnock (proclaimed the City of Greater Cessnock in 1958) (Parkes *et al* 1979:273).

2.1.2 Pastoralism and Agriculture

Records indicate that the lands within the project area were used for pastoralism and agriculture since the early nineteenth century. A record from the Maitland Mercury, Thursday, 9 October 1862 describes the condition of crops in the Quorrobolong area as:

> *…a very poor harvest this year. The wheat is coming into ear, and on many farms it is not more than that six inches high. The only farm that I have seen that presents a good appearance is that of Mr R. Madden of Sandy Creek (cited from the Town Quorrobolong Folder in the Coalfields Heritage Group records).*

Vineyards developed in the area after the 1840s and formed an important part of the farming economy (HLA 1995:5). The Hunter River Vineyard Association was formed in 1847 (Parkes *et al* 1979:232). There were originally 18 members, with additional members admitted on a regular basis into the 1870s. These included E.C. Close of Quorrobolong, who joined the association in 1870 (Parkes *et al* 1979:234).

2.1.3 The Sandy Creek Community

From the latter half of the eighteenth century a farming community was established to the south of Sandy Creek Road, sometimes referred to as the Sandy Creek Community. In 1864 Margaret Daunt constructed a school to the south of Sandy Creek Road to educate the local children. She taught at the school until 1882 when age and poor health forced her to retire (letter from Margaret Daunt to Dept. of Public Instruction from Coalfields Heritage Group records).

The sites of the early school and remainder of the late nineteenth century community is located to the south of the Stage 3 assessment boundary and outside the project area of this report.

2.1.4 Land Tenure

The area encompassing the project area was controlled under several large land grants including Jacob Josephson (2000 acres), George Thomas Palmer (1200-1280 acres), Edward Charles Close (2841/2 acres), William Tacon (100 acres) and Edward Blackwell (103 acres). Smaller land grants of 30 to 40 acres were taken up by George Hall, Sara Hall, Joseph Hall, R Palmer, H Kerr, and R H Jordan (refer to **Figure 2.1**).

Jacob Josephson's estate is referred to in the historical records as the 'Barraba Estate' and also as 'Abbotsford'. George Thomas Palmer's estate is also later referred to as the Barraba Estate and the northern area of the estate as Coney Creek Paddock.

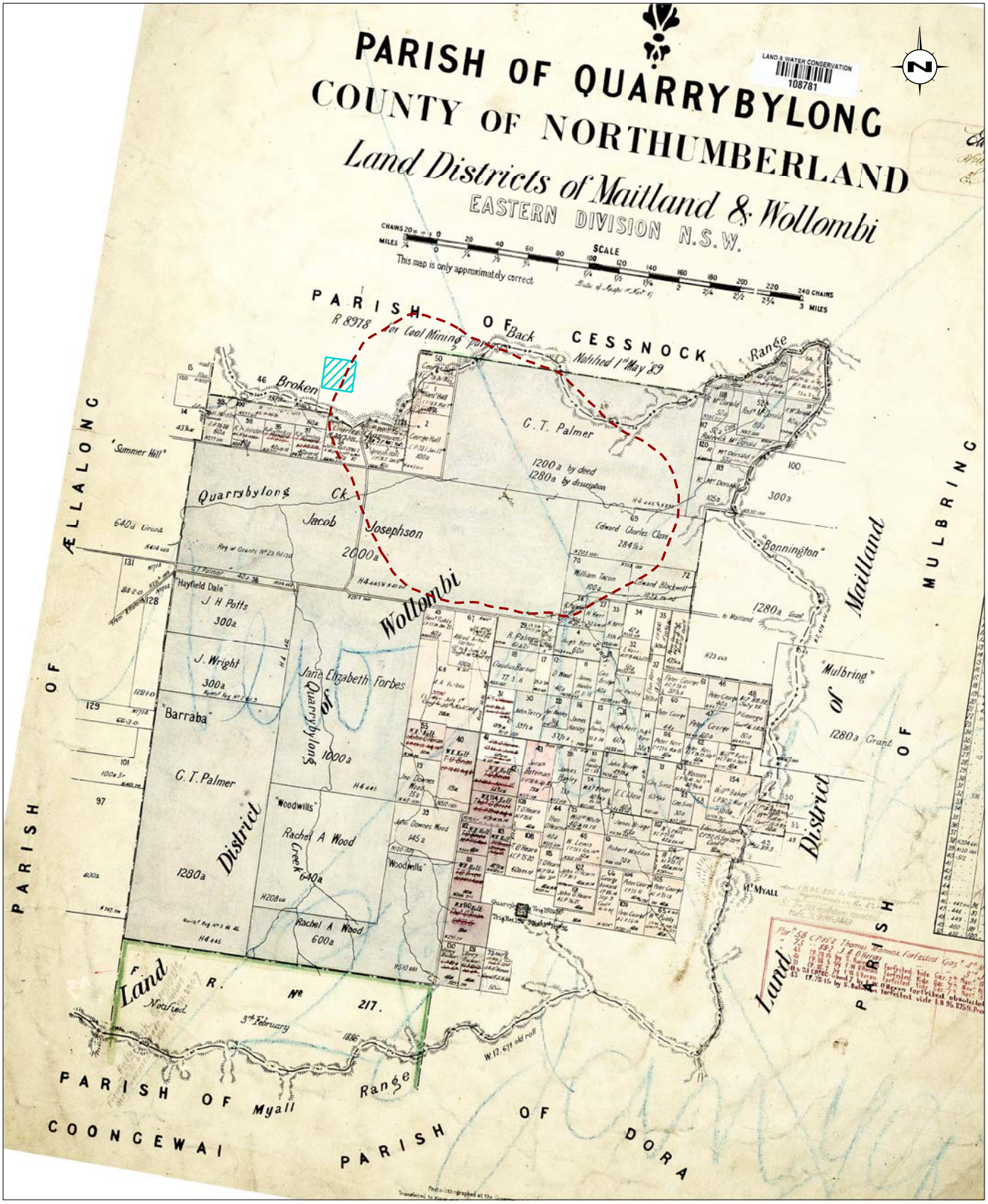
2.1.4.1 The Barraba Estate

Parkes *et al*. (1979:75) wrote that in circa 1834 George Thomas gained possession of the 1280 acre estate called *Barraba*, 'lying between Carter's Track (the wood from Ellalong to Mount Vincent) and the Myall Range'. It is believed that Palmer acquired the property with a 'ready made homestead and farm buildings' and 'little more than 100 acres had been cleared' (Parkes *et al.* 1979:75). George Thomas Palmer also acquired 'a narrow 40-acre block on the verge of the road on the north side of the *Barraba'* and approximately a mile north-east of *Barraba* 'a 1200 acre portion against the Broken Back, adjacent to a 284 ½ acre portion which E.C. Close acquired later' (Parkes *et al.* 1979:75). These grants are within the eastern portion of the project area.

The *Barraba* homestead is described in an article in the Sydney Herald, dated 16 January 1834 as:

Verandah house of six rooms, four of them 21 feet in length with underground cellar, detached offices etc, Barn with mill house adjacent about 100 feet in length with flagged cellar intended for the salting of provisions. Stable with loose box sufficient for accommodating ten horses. A good dairy of two rooms, upwards of 100 acres cleared and burnt off. A tobacco house of two rooms (cited from Greater Cessnock Historical Society October 1976, Volume 5/7).

The homestead for the Barraba Estate is outside the project area, adjacent to Barraba Lane, approximately 2 kilometres south-west of the intersection of Quorrobolong and Sandy Creek roads (refer to **Figure 2.2**).



Source: Land and Property Information, August 1999

0 1.0 2.0 3km
1:70 000

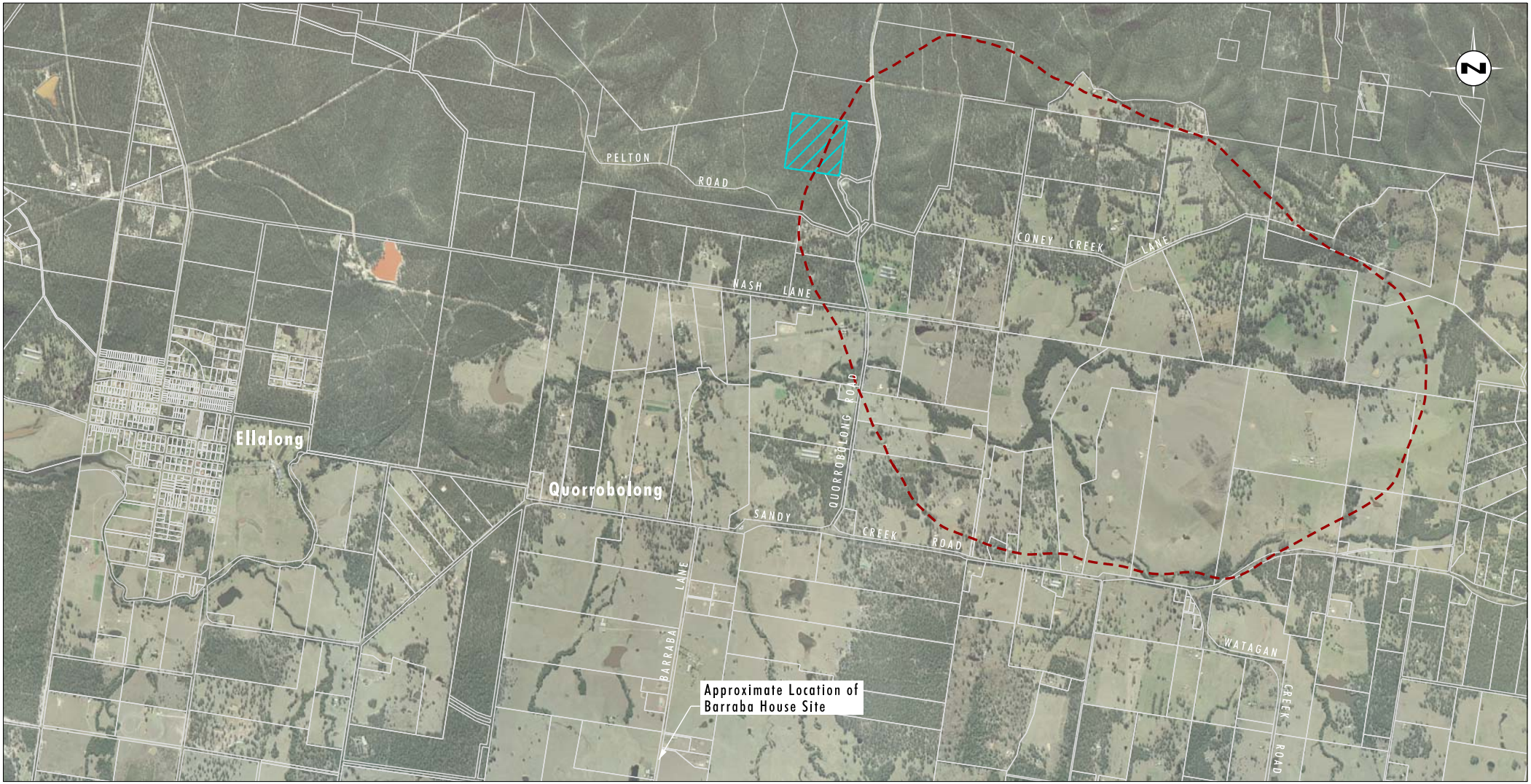
Legend

Revised 20mm Subsidence Contour for Modified Stage 3 Longwall Layout

Approved Surface Infrastructure Site

FIGURE 2.1

1888 Parish Map of Quorrobolong



Source: Cadastre: LPI NSW, Aerial Photography: AAM Hatch 2006

0 0.5 1.0 2km
1:40 000

Legend

Revised 20mm Subsidence Contour for Modified Stage 3 Longwall Layout

Approved Surface Infrastructure Site

FIGURE 2.2

Location of Barraba Homestead in relation to 20mm Subsidence Contour

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2.1.4.2 Land Title Summary

The 2008 assessment (Umwelt 2008a) includes a summary of land title search results undertaken for Lots within the predicted 20 millimetre subsidence contour which potentially contain extant structures which could be impacted upon by the Stage 3 proposal. The 2008 assessment should be referred to for details of the title search results.

2.1.5 Logging, Sawmills and State Forestry Service

Extensive land clearing activities were undertaken across the project area from the time of the early settlers in the first half of the nineteenth century.

The historical resource provides descriptions of logging within the northern sections of the project area. For example, Thomas Barnier owned a small mill on Mount Vincent and

> *…made roads along every edge of the mountain so that logs could be brought to the sawmill. The north eastern part of the mountain above Brunkerville to the Trig or Boosting Station was known by the early inhabitants as Brokenback….The spur running towards Millfield was known as Quorrobolong or Sandy Creek Mountain. Teamsters were able to take bullocks up there, and hauled logs to a place where they shot them over a cliff (Andrews 1988:259-260).*

The Forestry Department of NSW in circa 1933 'resumed Barniers area and proclaimed the whole mountain as a Forest Reserve for the growth of timber. The Forestry Department also made a road up the mountain to sawmills at Cessnock and Millfield and the various coal mines around the district' (Andrews 1988:261).

The existing tracks within the project area are most likely associated with these early tracks used by Barnier and later by the Forestry Department for logging in the areas of State Forest within the project area.

2.1.6 Coal Mining Industry

The coal mining industry has played a dominant role in the development of Newcastle and the lower Hunter Valley region, encouraging its settlement in the late eighteenth century (Heritage Office & DUAP 1996:38). Coal deposits were first noticed in the region along the Hunter River by Lieutenant Shortland in 1797 (Heritage Office & DUAP 1996:38). The earliest mining began in nearby Newcastle where the first coal field in the region was discovered. Initially founded as a penal settlement in 1804, Newcastle relied on mining as an important economic factor in its development (Heritage Office & DUAP 1996:38). The establishment of a railway system also aided Newcastle's development into a major city, with a new railway station built in 1878 and upgraded in 1895 (Heritage Office & DUAP 1996:41).

The Australian Agricultural Company had a monopoly over coal production in Newcastle until the mid 1800s. After this, a period of expansion in coal production ensued and mining shifted from the coast up the Hunter Valley (Heritage Office & DUAP 1996:38). This shift saw the establishment of larger collieries than those found in Newcastle and the development of numerous settlements along the coal seams running up the Hunter Valley (Heritage Office & DUAP 1996:41). Numerous private railways were also created.

With the development of mines at East Greta in 1891, exploitation of the South Maitland Coalfields began. The Greta coal measures were followed south and additional mines began to open. By 1906 mines were established in the Cessnock area and were linked to what later became the South Maitland Railway. Collieries to the south of Cessnock (in the vicinity of the current project area) were established in the 1920s.

Many small villages were established adjacent to the mines to house workers, such as Bellbird, Kitchener, Paxton and Kearsley. As outlined by AHC 2007:

> *…the major coal fields have numerous villages that owe their location and form to the nearby coal mine. Sometimes the village was initially owned and built by the mining company.*

Cessnock No. 1 Colliery (the Kalingo Colliery) was first developed in the early 1920s under the direction of the Wickham & Bullock Island Coal Co. It first appeared in the Department of Mines Report in 1921 with a workforce of 40. Development work ceased in 1929, with work resuming in the late 1930s when the Company decided to use mechanical operations (to this time the mine was developed using traditional hand mining methods). The colliery closed in 1959, reopened and closed again in 1961 (Pike 1994).

The Great Northern Coal Company held approximately 40 acres within a land grant in the northwest corner of the project area. There is no clear information of the exact land use history within this part of the project area; however, no evidence of early mining has been identified in this area of the site.

There is no known existing surface evidence of coal mining or associated infrastructure within the project area.

2.1.7 Transport Infrastructure

In 1819, John Howe and Benjamin Singleton established an overland track between the Hawkesbury and the Hunter River. This convict built track was known as Howe's Valley Road, and was the major artery used by free settlers to establish themselves on the upper creeks of the Wollombi.

In 1825, surveyor Heneage Finch was dispatched to find a better route north (than the Bulga Road, originally opened in 1823), and his tracing was the original line of the Great North Road (Karskens 1998:7). The Great North Road was built by convict labour between 1826 and 1836, and it was the first of a network of 'Great Roads' which radiated to the north, west and south of Sydney, then a rapidly growing port town. The road was built to provide a land link between Sydney and the burgeoning settlements of the Hunter Valley to the north. The original alignment ran between Baulkham Hills and Wollombi via Wisemans Ferry. From Wollombi it ran northeast to Maitland and Newcastle, with later branches being added to the upper and middle Hunter Valley via Broke (Karskens 1998:6).

Construction of the branch line between Wollombi and Maitland appears to have been completed by 1831. Unlike most other sections, this line never fell out of use. The road is sealed today and no original construction features are located within the project area. The line follows the meanderings

of the North Arm of the Wollombi Brook on the east side of Sweetmans Creek to Millfield, Bellbird and Cessnock. The original road shown on Mitchell's 1833 map passes to the northwest through Native Dog Hill, Sawyers Gully and Parsons Hill (Karskens 1988).

There are no known railways or associated railway infrastructure within the project area.

2.1.8 South Maitland Railway

The South Maitland Railway was a network of privately-owned branch lines extending south-west of Maitland, serving a large number of collieries. Although the branches of the South Maitland Railway were constructed (and sometimes operated) by various different companies, these merged together over the years until a single company, the South Maitland Railways Pty Ltd, was the sole entity operating over the network (Bozier nd) (refer to).

Construction of the first component of the railway commenced on 20 July, 1892. This length was built and operated by the East Greta Coal Mining Company and extended as far as East Greta workings, to serve its mines in what is now the Gillieston Heights area, south of Maitland. In 1900, the railway was extended south to a mine already operating at Stanford Merthyr and further extended in November 1901 to reach the Stanford Greta No. 2 tunnel mine, subsequently acquired by J and A Brown and re-named Pelaw Main.

The Brown brothers were engaged in the construction of their line between Hexham-Minmi-Stockrington and Richmond Vale (initially to Pelaw Main and thereafter to Richmond Main). When this link was completed, the connection between Pelaw Main via Stanford Merthyr to the South Maitland Railway was maintained only as a connection between the two systems but was less used. In 1934, ground above old Ayrfield workings subsided near the Stanford Merthyr single road. The only mines still in operation on the spur were Pelaw Main and (the fire susceptible) Ayrfield. In the result, the spur from Aberdare Junction was closed and coal from these remnant mines was lifted along the Richmond Vale line. In 1936, a spur was constructed from just east of the Weston complex to Pelaw Main to re-connect the South Maitland Railway and Richmond Vale Railway.

Over its original line and the extension, the East Greta Mining Company commenced passenger services in 1902 between East Greta Junction to East Greta, Stanford Merthyr. In 1903, the service was extended to run between East Greta Junction and Maitland and was maintained until 1929, when industrial action resulted in the discontinuation of passenger services.

In the meantime, mines had been and were being developed further south in the Abermain and Aberdare districts. In 1901 Aberdare Collieries and the Australian Agricultural Company (AA Co) commenced construction of an extension of the railway that became known as the Aberdare Railway, from Aberdare Junction, initially to Hebburn No. 1 (at Weston) and Abermain No. 1 (at Abermain) mines. Eventually the line was extended to the infant town of Cessnock and, in 1912, to the Aberdare Extended mine south of the town.

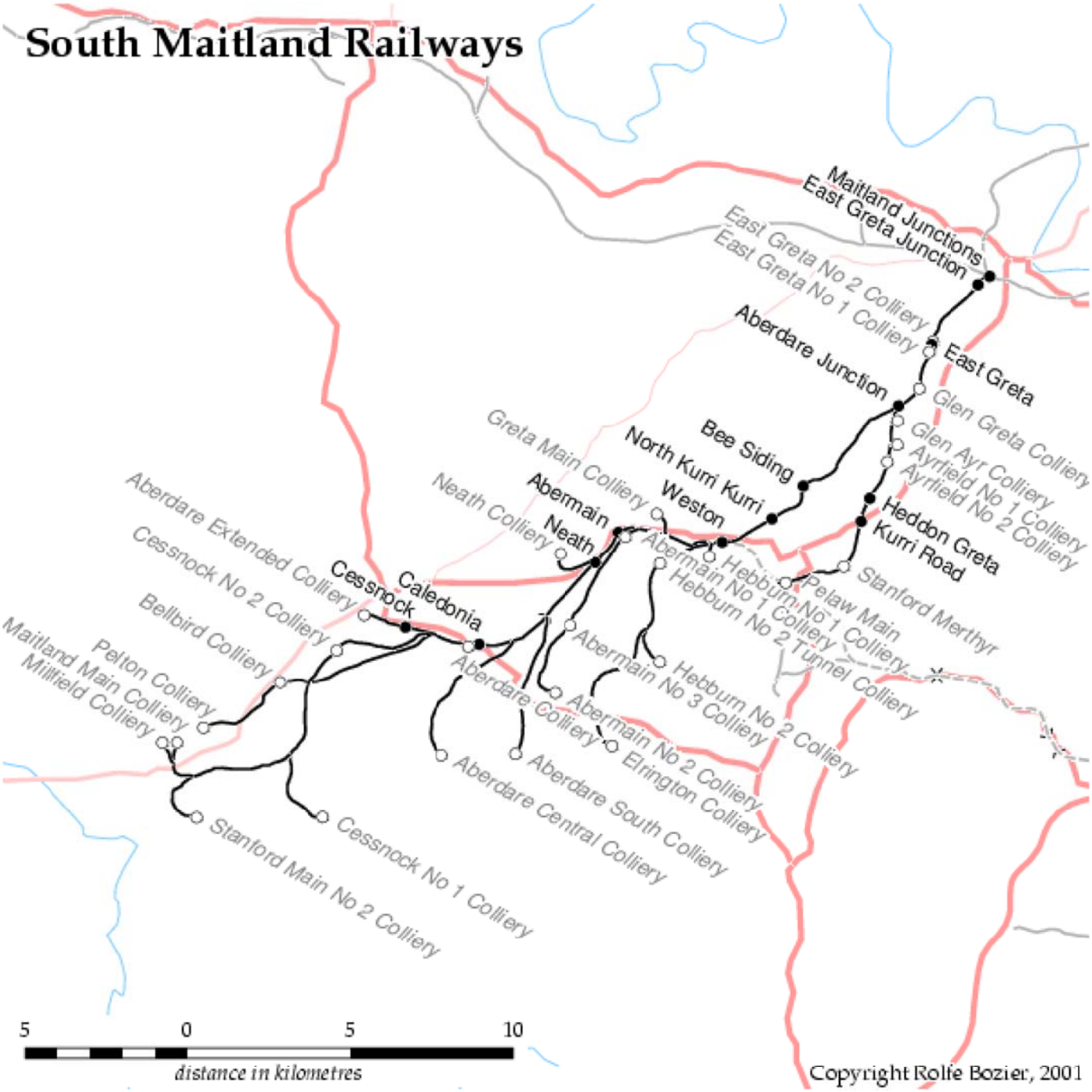


FIGURE 2.3

South Maitland Railway

Source: Rolfe Bozier, 2001

File Name (A4): R04/3364_048.dgn
20130319 8.41

Passengers were conveyed on the East Greta Coal Co's line between Stanford Merthyr, Kurri Road, Heddon Greta, Aberdare Junction and East Greta Junction between 1902 and 1929, a service that was extended east to Maitland in 1903, and by the AA Co south, reaching to Cessnock in 1912. Initially the service was operated entirely by the East Greta Coal Mining Company, later (after 1906) the AA Co and, from 1918, the South Maitland Railway. In 1930, NSW Government Railway took over the running of the Maitland-Cessnock passenger run. In 1961, steam traction was replaced by two-car diesel hydraulic services. The South Maitland Railway again commenced passenger running with three self-contained railcars, sharing the service with NSWGR 600-700 class diesel hydraulic sets. This situation continued until, with falling patronage, the South Maitland Railway withdrew its vehicles from service on 24 January 1967. The NSWGR service continued until the last weekday service was withdrawn on 26 May 1972.

Originally laid as a single road, the line was duplicated between 1903 and 1912, to account for its increased usage by developing mines of the South Maitland coal field, which by that time extended as far south as the Aberdare Extended Colliery, south of Cessnock (the general location of the present Pelton Colliery). In this form, the line operated for coal haulage until the mid-1960s. Between that time and the early 1980s, most of the rail of the down-road was progressively lifted. Some residual track of the down-road remains in the vicinity of the Weston (Hebburn No. 1) exchange siding and across down-road bridges. The Pelton Colliery Branch (Bellbird Junction to Pelton Colliery) was opened in March 1918 and was the only section of the South Maitland Railway with any traffic up until Austar Coal Mine's transition to care and maintenance in March 2020.

The South Maitland Railway is noted as having been the last commercial steam railway in New South Wales and is inextricably associated with the long-term operation of the 10-Class locomotives built between 1911 and 1927 by Beyer, Peacock & Co exclusively for use on the line. There were only 14 ever built and all 14 still survive. They were the last commercial steam locomotives to run in Australia, having been replaced on the South Maitland Railway by Government diesel locomotives in 1983. The 10-Class locomotives are listed on the State Heritage Register (Umwelt 2005:2.2).

2.2 Land Use History – Summary

The history of the Cessnock region is characterised by pastoral estates and a slow intensification of residential development prior to 1892, with mining then becoming increasingly significant to the region's economy and development particularly from the 1910s. The history of the Stage 3 assessment area reflects this, with land first taken up as part of pastoral estates in 1834, then being progressively subdivided for further pastoral use. Mining infrastructure in the Quorrobolong area – for the Pelton, Ellalong, Bellbird and Southland Collieries – dates to the 1910s, resulting in the rapid intensification of use of the local region. As a result of this history, the landscape of the assessment area has undergone modification through extensive pastoral grazing and residential development, with native vegetation cleared and foreign grasses introduced.

Table 2.1 presents a chronological overview of the development of the Central Lowlands of the Hunter Valley, with specific reference to the Cessnock LGA.

TABLE 2.1 - TIMELINE OF LOCAL AND REGIONAL HISTORY

Date	Historical Development
1819	First recorded journey into the Wollombi Valley, by John Howe.
1820	The Hunter Valley was opened for free settlement.
1821	First land grant in the Cessnock area, with Benjamin Blackburn receiving 400 acres near Kurri Kurri.
1822 to 1823	A route (roughly in alignment with the present Old Bulga Road) from Windsor was found by Benjamin Singleton, John Howe and others which made possible the overland movement of stock from the Cumberland Plain to the Hunter Valley.
1822 to 1826	Henry Dangar conducted a detailed survey of the lower Hunter between 1822 and 1826.
1826	'Cessnock' estate established on 2560 acres of land by John Campbell.
1826 to 1836	Great North Road built by convict labour. Line between Wollombi and Maitland built by 1831.
1830s	Australia's first soldiers settlement was established at Wollombi, with discharged members of the NSW regiments receiving (from 1830) grants of 100 acres along the Wollombi Brook.
1834	Two thousand acre grant granted to B Jacob Josephson on 15 August, forming the Barraba Estate (which contained much of the Stage 3 assessment area).
1850	Population of Wollombi c.1500, while the residents of Cessnock only numbered between 7 and 11.
1853-1855	Cessnock estate subdivided and sold as individual lots, basis of future Cessnock township.
1880s	South Maitland Coalfields developed. By this time, Cessnock was a farming area on the margins of the Hunter Valley.
1892	Coal discovered at Cessnock, by George Brown while excavating in the southwest corner of the old Cessnock estate.
1906	Mines established in the Cessnock area by this year. Shire of Cessnock established.
1916	Underground mining of Pelton/Ellalong commences.
1926	Cessnock defined as a municipality, with population of 12,000 people
1956	Cessnock municipality merged with the Shire of Kearsley, into the Municipality of Greater Cessnock.
1958	Municipality of Greater Cessnock proclaimed the City of Greater Cessnock

2.3 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, interpretation and management of heritage places (AHC 2001:1). Nine national historical themes have been identified by the Australian Heritage Commission (AHC now Australian Heritage Council). Heritage NSW has identified 35 historical themes for understanding the heritage of NSW. The development of the project area is broadly reflective of the history of the local region, and can be assessed in the context of the broader historic themes defined by the Heritage Branch, OEH and AHC. In accordance with the Heritage Branch and AHC framework of historic themes, the themes 3 to 5 as set out in **Table 2.2** are relevant to the project area and locality.

TABLE 2.2 - HISTORICAL THEMES

National Theme Groups	National Themes	National Sub Themes	State Themes	Local Themes/Application
3. Developing local, regional and national economies.	3.3 Surveying the continent	3.3.4 Looking for land with agricultural potential 3.3.5 Laying out boundaries	Agriculture Transport Pastoralism Dairying Land Tenure	Great Northern Road Main Northern Railway Agriculture Pastoralism Dairying Land Tenure and Barraba Estate
	3.4 Utilising Natural Resources	3.4.3 Mining	Mining	Mining
	3.5 Developing Primary Production	3.5.1 Grazing stock 3.5.2 Breeding animals 3.5.3 Developing agricultural industries	Agriculture Pastoralism Dairying	Agriculture Pastoralism Dairying
	3.8 Moving goods and people	3.8.5 Moving goods and people on land 3.8.6 Building and maintaining railways 3.8.7 Building and maintaining roads	Transport	Great Northern Road Main Northern Railway
4. Building settlements, towns and cities	4.5 Making settlements to serve rural Australia; 4.6 Remembering significant phases in the development of settlements, towns and cities.	4.1.1 Selecting township sites	Land Tenure Towns Suburbs and Villages	Land Tenure and Barraba Estate
5. Working	5.8 Working on the land; Organising workers and workplaces.	*No sub themes in this category*	Labour	Agriculture Pastoralism Dairying Mining

3 EVALUATION OF HERITAGE SITES IN THE PROJECT AREA

3.1 Identified Historical Heritage Sites

The 2008 Historical Heritage Assessment (Umwelt 2008a) assessed 18 potential heritage sites/items located within the project area. Of these 18 potential heritage items, 16 sites were identified as being located within, or in the vicinity of, the Surface Infrastructure Site or the predicted 20 millimetre subsidence contour area (Items 1 to 12, 14 and 16 to 18) that encompasses the underground mining area and may potentially experience some minor subsidence impacts. No sites/items subject to any form of statutory heritage listing were identified within the Project Area.

As a result of the 2011 and 2013 Stage 3 Modification (after MOD3):

- a number of the historical heritage items identified in the 2008 assessment will no longer be affected by the mining operations as they are not within the 20 millimetres subsidence contour or the Surface Infrastructure Site. As such, these sites (including Items 8 artefact scatter, 16 potential homestead site and 17 potential homestead site) are not included as part of this HHMP (refer to **Figure 1.3**); and

- one addition potential heritage item (Item 23 Potential Homestead Site) has been identified within the 20 millimetre subsidence contour for modified Stage 3 longwall layout (refer to **Figure 1.3**).

3.1.1 Heritage Items

Table 3.1 lists the potential heritage items, assessed as part of previous historical heritage assessments undertaken for the Stage 3 project, identifies their heritage significance and indicates their location in relation to the 20 millimetre subsidence contour for the modified Stage 3 longwall layout (refer also to **Figure 1.3**).

A number of the sites listed in **Table 3.1** (sites 2 to 4, 9, 10, 12 and 18) as being of no significance were initially classified as having nil – local significance in the Historical Heritage Assessment (Umwelt 2008a). The significance of these sites has been clarified in this HHMP as being of no significance in line with Heritage Council of NSW recognition of sites/items either being of significance (whether local, state national or world) or not. Sub-classifications or additional levels such as nil – local are now not recognised. **Appendix C** provides the clarification and justification for assessing these sites as being of no significance in accordance with the Heritage Branch, OEH standard criteria and also Bickford and Sullivan's 1984 work on archaeological significance.

TABLE 3.1 - ASSESSED HERITAGE ITEMS

Item	Description	Significance	Within 20mm Subsidence Contour for Modified Stage 3 Longwall Layout	Within Surface Infrastructure Site
1	Cony Creek Bridge, Quorrobolong Road	Local	Yes	-
2	Quarry 1	No	Yes	-
3	Quarry 2	No	Yes	-
4	Ford	No	Yes	-
5	Culvert 1	No	Yes	-
6	Culvert 2	No	Yes	-
7	Culvert 3	No	Yes	-
9	Fencing 1	No	Yes	-
10	Fencing 2	No	Yes	-
11	Cut Tree	No	-	Yes
12	Cut Stump	No	-	Yes
14	Possible House /Timber Shed Site	Local	Yes	-
18	Early Roads	No	Yes	-
23	Potential Homestead Site	Likely local[2]	Yes	

Note 1: Table has been updated to reflect clarification of significance as detailed in **Appendix C**.

Note 2: Site 23 has not been inspected. Assessed likely local significance will be clarified during inspection undertaken as part of proposed Built Features Management Plan (refer to **Section 4.2**).

3.2 Historic Impact Assessment

The 2008 Historical Heritage Assessment (Umwelt 2008a), 2011 Stage 3 Modification EA (Umwelt 2011) and 2013 LWA7-A10 Modification EA (Umwelt 2013) included a heritage impact statement for the potential heritage sites/items (both inspected and not inspected as access was not available to all private property in the Stage 3 area) and located within the 20 millimetre subsidence contour or Surface Infrastructure Site (refer to **Table 3.2** and **Table 3.3**).

Management measures to be implemented, where relevant, for the items detailed in **Table 3.1** and **Table 3.2** are detailed in **Section 4.1**.

3.2.1 Heritage Impact Statement for Areas and Items Inspected

Table 3.2 provides the heritage impact statement prepared as part of the 2008 assessment and subsequent 2011 and 2013 Modification EAs (Umwelt 2011 and 2013) for the potential heritage sites/items inspected as part of the 2008 assessment and located within the 20 millimetre subsidence contour or Surface Infrastructure Site (refer to **Table 3.2** and **Figure 1.3**).

Mine Subsidence Engineering Consultants (MSEC) assessed the subsidence impacts from longwall mining on the historical heritage items within the Stage 3 Modification Area (MSEC 2011) and LWA7–A10 Modification Area (MSEC 2013). The 2011 and 2013 MSEC reports were utilised during the

assessment of the potential heritage impacts of the Stage 3 Modification and LWA7–A10 Modification Areas for the 2011 and 2013 EAs.

TABLE 3.2 - HERITAGE IMPACT STATEMENT FOR INSPECTED HERITAGE ITEMS

Item	Description	Heritage Impact Statement
1	Cony Creek Bridge, Quorrobolong Road	The long walls do not mine directly beneath the bridge. The bridge is expected to accommodate any mine subsidence movements resulting from the extraction of the longwalls (MSEC 2011:62). No impacts are expected as a result of mining. The Cony Creek Bridge has been assessed as being of local significance and as having no or low research potential (Umwelt 2008a:6.9). MSEC recommends the Cony Creek Bridge is periodically visually monitored during the extraction of the longwalls (MSEC 2011:62).
2 and 3	Quarries 1 & 2	There are unlikely to be any significant impacts to Quarries 1 and 2 resulting from the extraction of the longwalls (MSEC 2011:87 and MSEC 2013:20). The quarries have been assessed as having no significance and no research potential (refer to **Appendix C** of this report and Umwelt 2008a:6.9). On this basis, no further heritage management of these items is recommended during the works.
4	Ford	The Ford is located above the chain pillar between Longwalls A14 and A15. The site could potentially be affected by surface cracking as a result of mine subsidence movements (MSEC 2011:87). The Ford has been assessed as having no significance and no research potential (refer to **Appendix C** of this report and Umwelt 2008a:6.9). On this basis, no further heritage management of this item is recommended during the works.
5 to 7	Culverts 1 to 3	Culverts 1 to 3 are located close to and above the southwest end of Longwall A7. Subsidence movements could result in some minor cracking which could be readily repaired (MSEC 2011:88). There is unlikely to be any adverse impacts to their serviceability (MSEC 2013:19). Culverts 1 to 3 have been assessed as having no significance or research potential (Umwelt 2008a:6.9). On this basis, no further heritage management of these items is recommended during the works.
9 and 10	Fencing 1 & 2	Fencing sites 9 and 10 each comprise a single timber post and are not expected to be impacted by subsidence movements (MSEC 2011:88 and MSEC 2013:20). The sites have been assessed as having no significance and no research potential (refer to **Appendix C** of this report and Umwelt 2008a:6.9). On this basis, no further heritage management of these items is recommended during the works.
11	Cut Tree	Item 11 has been removed during site preparation for the construction of the surface infrastructure site. The cut tree trunk has been assessed as having no significance or research potential (Umwelt 2008a:6.10). On this basis, no further heritage management of this item is recommended during the works.

Item	Description	Heritage Impact Statement
12	Cut Stump	Item 12 has been removed during site preparation for the construction of the surface infrastructure site. The tree stump has been assessed as having no significance and no research potential (refer to **Appendix C** of this report and Umwelt 2008a:6.9). On this basis, no further heritage management of this item is recommended during the works.
14	Possible House/Timber Shed Site	The potential house/timber shed site is located above a chain pillar between Longwalls A13 and A14. The site has no standing structures or foundations. The site could potentially be affected by surface cracking as a result of mine subsidence movements (MSEC 2011:88). The potential house/timber shed site has been assessed as having no significance and no research potential (refer to **Appendix C** of this report and Umwelt 2008a:6.9). On this basis, no further heritage management of this item is recommended during the works.

Table has been updated to reflect clarification of significance as detailed in **Appendix C**.

3.2.2 Heritage Impact Statement for Areas and Items Not Inspected

As noted in the 2008 assessment (Umwelt 2008a:3.2), access was not available to all private property in the Stage 3 area. Historical research undertaken as part of the 2008 assessment indicates there is a low likelihood of any further potential heritage items to be present within the Stage 3 Modification Area, with the exception of Item 18 (potential early roads). As a result of the LWA7–A10 Modification, one addition potential heritage item (Item 23 Potential Homestead site) has been identified within the 20 millimetre subsidence contour for the modified Stage 3 longwall layout. In the unlikely event any further potential items are identified they are unlikely to have any significance or research potential and any potential impact to the potential items would be negligible. **Table 3.3** outlines the heritage impact statement for Items 16 and 18 as discussed in the 2011 EA and Item 23 as discussed in the 2013 EA.

TABLE 3.3 - HERITAGE IMPACT STATEMENT FOR HERITAGE ITEMS (NOT INSPECTED)

Item	Description	Heritage Impact Statement
18	Early Roads	The early roads (Item 18) potentially located within the Stage 3 Modification Area were not inspected as part of the 2008 assessment as access was unavailable. Potential impacts on unsealed roads include cracking and heaving of unsealed surfaces. Any impacts could be repaired by infilling the cracks or by re-grading and re-compacting the surface (MSEC 2011:60). Early roads would likely be of no significance with no research potential (refer to **Appendix C** of this report and Umwelt 2008a:6.9). On this basis, no further heritage management of this item is recommended during the works.
23	Potential Homestead Site	The potential homestead site 23 has not been inspected as access was unavailable during assessment. The site is located approximately 270 metres west of the modified finishing ends of LWA8 and LWA9 and is expected to experience approximately 60 millimetres of subsidence. The site is unlikely to experience any significant impacts as a result of the extraction of the longwalls and is likely to remain safe and serviceable at all times (MSEC 2013:17-18). Although the site has not been inspected, on the basis of the land use history and significance assessment presented in the 2008 *Historical Heritage Assessment* (Umwelt 2008a), it is assessed as potentially being of local significance with no or low research potential. This will be confirmed or otherwise through an inspection to be completed through the preparation of the Built Features Management Plan (refer to **Section 4.2**), where access is granted. MSEC recommends that houses are periodically visually inspected during the extraction of the longwalls (MSEC 2011:96).

Table has been updated to reflect clarification of significance as detailed in **Appendix C**.

4 HISTORICAL HERITAGE MANAGEMENT STRATEGY

This section of the report comprises the historical heritage management strategy for the project and addresses Schedule 4 Condition 11 of the Austar Coal Mine Project – Stage 3 Project Approval (refer to **Appendix A**).

4.1 Consultation

As per Schedule 4 Condition 11(a) of Project Approval 08_0111, this HHMP has been prepared in consultation with Council and the Heritage Branch, and was submitted to the Director-General for approval prior to the commencement of second workings in Stage 3 and construction of the Surface Infrastructure Site.

This HHMP was discussed with the Heritage Branch, OEH on 18 January 2012 and Cessnock City Council on 31 January 2012. The Austar Coal Mine Project – Stage 3 and its relevant Project Approval conditions were discussed with the Heritage Branch and Cessnock City Council including the

management of Item 1 Cony Creek Bridge (refer to **Section 4.2.1**) and the management of potential house sites not inspected as access was unavailable. The management of Cessnock No. 1 Colliery (refer to **Section 4.3**) and the South Maitland Railway related lots (refer to **Section 4.4**) were also discussed in relation to there being no works proposed in these areas involving the demolition of any of the extant structures at the Cessnock No.1 site or impacts to the South Maitland Railway. As noted in **Section 3.1.1**, Item 23 has been identified as a potential historic heritage site of potential local significance with no to low research potential. The historical heritage status of Item 23 was to be confirmed or otherwise through an inspection as part of the preparation of the Built Features Management Plan, however access was not granted to this house and the Built Features Management Plan was not developed (as mining ceased in Stage 3). No further action is required as mining has ceased.

Cessnock City Council requested a copy of the HHMP which was submitted to Council concurrently with its initial submission to the Director-General.

4.2 Monitoring and Management of Identified Heritage Sites in the Project Area

As discussed in **Section 3.2**, two items are recommended for further monitoring and management:

- Item 1 Cony Creek Bridge, Quorrobolong Road; and
- Item 23 Potential Homestead Site.

The management of these items is discussed below.

4.2.1 Item 1 Cony Creek Bridge, Quorrobolong Road

The following management actions were proposed for Item 1 Cony Creek Bridge, Quorrobolong Road, however, as mining was not undertaken in proximity to the bridge and the site is now in closure, the actions were not, and will not be undertaken.

The long walls do not mine directly beneath Cony Creek Bridge. The bridge is expected to accommodate any mine subsidence movements resulting from the extraction of the longwalls (MSEC 2011:62). As a result, no impacts to the bridge are expected as a result of mining.

The bridge will be inspected as part of the project's Built Features Management Plan. This inspection will include an engineering inspection and assessment prior to subsidence impacts commencing.

In order to manage any unexpected impacts, it is recommended the Cony Creek Bridge is periodically visually monitored during the extraction of the longwalls which will induce subsidence effects on the bridge. The intervals for monitoring should be determined in consultation with the bridge owner (Cessnock City Council) when developing the Built Features Management Plan, and should continue until potential subsidence is confirmed to have ceased.

If there are any changes to subsidence predictions or if the initial inspection of the bridge undertaken as part of the preparation of the Built Features Management Plan or monitoring results indicate that the bridge may be impacted, a detailed photographic/archival recording in accordance with Heritage

Council guidelines Photographic Recording of Heritage Items Using Film or Digital Capture (2006) should be completed by a qualified heritage consultant to ensure all physical aspects of the bridge are identified and documented.

4.2.2 Item 23 Potential Homestead Site

The following management measures were proposed for Item 23 Potential Homestead Site. The overarching Built Features Management Plan considers this site, however, it should be noted that prior to and during active mining in the Stage 3 area, the landholder refused access to allow actions to be implemented. The current landholder has advised that the residence was moved to the site in the late 1980's, is not heritage listed and has been completely renovated since mining was finalised in the Stage 3 area.

The historical value of the site will be determined during detailed mine closure assessments and this plan will be updated accordingly.

The potential homestead has not been inspected as access was unavailable during assessment. The site is located approximately 270 metres west of the modified finishing ends of LWA8 and LWA9 and is expected to experience approximately 60 millimetres of subsidence. The site is unlikely to experience any significant impacts as a result of the extraction of the longwalls and is likely to remain safe and serviceable at all times (MSEC 2013:17-18). MSEC recommends all houses are visually monitored during the extraction of the longwalls (MSEC 20011:87).

Prior to subsidence impacts a Built Features Management Plan will be prepared for all built features, including Item 23, within the 20 millimetre subsidence contour for the modified Stage 3 longwall layout. The preparation of this plan will include an engineering inspection (following landholder agreement) and assessment. Item 23 will also be inspected by a qualified heritage consultant at the time of the Built Features Management Plan inspections to clarify its likely heritage significance (with landholder agreement). If assessed as having no significance or research potential, no further heritage management of this item is required during the works.

If confirmed to likely be of local significance, a site specific heritage impact assessment will be prepared by a qualified heritage consultant (in accordance with Heritage Council guidelines Statements of Heritage Impact) prior to any potential subsidence impacts occurring. The management recommendations of the heritage impact assessment and the predicted impacts of the Built Features Management Plan will guide the heritage management of Item 23. If appropriate and dependant on the level of proposed impact, the management strategy recommended by the heritage impact assessment should include, but not be limited to, consideration of:

- *the establishment of a cyclical site specific structural inspection program, comprising an inspection of the site at six monthly intervals until potential subsidence is confirmed to have ceased, utilising the inspection undertaken as part of the Built Features Management Plan as a reference. The aim of the inspection would be to identify any deterioration and required maintenance work necessary to ensure the ongoing protective care of the item by the Mine Subsidence Board; and*

- *a photographic/archival recording undertaken in accordance with Heritage Council guidelines (Photographic Recording of Heritage Items Using Film or Digital Capture (2006)) to ensure all physical aspects of Item 16 are identified and documented.*

The results of the heritage impact assessment will be reported in the Austar Coal Mine Annual Environmental Management Report (AEMR).

4.2.3 Ring-Barked Tree

Schedule 3, Condition 25 of DA 29/95 requires Austar to take all reasonable measures to protect the ring-barked tree referenced in the April 2006 SEE. The 2006 SEE (ERM, 2006) references 'HLA (1995)' which is the Environmental Impact Statement for Proposed Extension of Operations of Ellalong Colliery into Bellbird South.

Section 4.4.2 of HLA (1995) states the following:

EL-2 Ring-barked tree.

This site can be seen as significant for its association with the history of the Cessnock area representing a pattern of land clearance and settlement and then abandonment of some agricultural land. The site meets only one of the significance criteria (Criterion 1). Accordingly under the methodology the site is not significant or of low significance.

HLA (1995) does not provide GPS co-ordinates for the location of the tree and the figure provide only includes an indicative location of the tree. Austar has surveyed the area but has been unable to locate the tree.

As the approximate location of the tree is known and no disturbance activities are currently proposed within the vicinity, no specific management measures are proposed. The general management measures detailed in Section 4.6 apply to the whole site and, therefore, the area in which the tree is located.

4.3 Heritage Impact Assessment Procedure for Cessnock No. 1 Colliery, Kalingo

Cessnock No. 1 Colliery is located adjacent to Kalingo Dam, a key dam in the approved water management infrastructure of Austar Coal Mine. Several semi-derelict buildings from the Cessnock No. 1 Colliery remain in this area. The intent of the Mining Operations Plan 2019-2026 – Amendment A (Austar Coal Mine Pty Ltd, 2020) in terms of the rehabilitation of the Cessnock No.1 site is to return the site to a native ecosystem (following demolition of buildings and other infrastructure) for consistency with the surrounding areas (refers to **Figure 4.1** and **Figure 4.2**) (Umwelt 2008b:4.5).

A previous report has been prepared which includes discussion of the historical heritage values and significance of the extant structures and foundations at Cessnock No. 1 Colliery (and the Pelton CHPP area and Bellbird colliery). This report identified a management strategy in relation to proposed rehabilitation works and is currently utilised by Austar to guide the rehabilitation works. This report is titled:

- *Historical Heritage Assessment Austar Coal Mine Project – Rehabilitation at Bellbird, Cessnock No. 1 and Pelton Collieries* (Umwelt 2008c).

Mining activities beyond approved water management practices were not proposed at the Cessnock No. 1 Colliery. If future closure activities are proposed at Cessnock No.1 Colliery surface facilities at Kalingo (including the demolition of any structures) a Heritage Impact Statement will be prepared to the satisfaction of the Secretary by a qualified heritage consultant in accordance with Heritage Council guidelines and in consultation with the Heritage Branch, OEH and Cessnock City Council to address the potential impacts associated with the proposed activities and will include an appropriate management strategy to mitigate any potential impacts.

4.4 Procedure for Relevant Heritage Act Approvals for Lot 1 DP 87087 and Part Lot 1 DP 69968 County of Northumberland, Parish of Heddon (Austar CHPP)

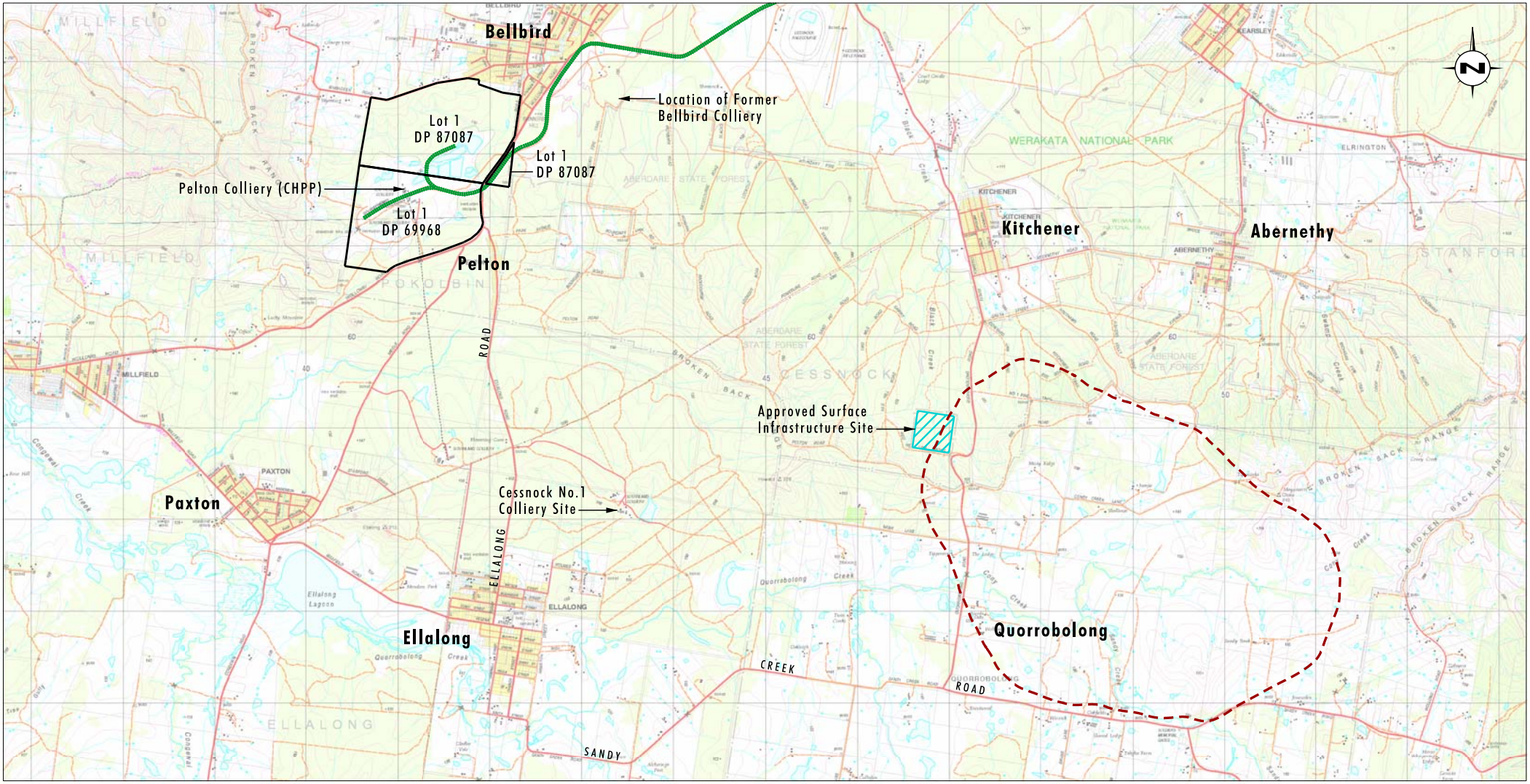
PA 08_0111 requires that relevant approvals under the *Heritage Act 1977* (NSW) will be required for any works proposed to be undertaken on or under Lot 1 DP 87087 and Part Lot 1 DP 69968, in particular with reference to buildings, works, relics etc associated with the South Maitland Railway. The location of the South Maitland Railway on these lots is shown in **Figure 4.1**).

If any future works are proposed on or under these lots or any other potential impacts are identified in relation to the buildings, works, relics etc associated with the South Maitland Railway, additional assessment will be required to be undertaken in accordance with professional standards and guidelines. If appropriate, relevant approvals under the *Heritage Act 1977* (NSW) would need to be obtained including application to the Heritage Council of NSW if any excavation or disturbance to land that is likely to contain archaeological remains is proposed.

The *Heritage Act 1977* (NSW) affords automatic statutory protection to 'relics' which form part of archaeological deposits (except where these provisions are suspended by other prevailing legislation). The *Heritage Act 1977* defines a 'relic' as any deposit, object or material evidence that:

- *relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement; and*
- *is of State or local heritage significance.*

Sections 139 to 145 of the Act prevent the excavation of a relic (on non-SHR land), except in accordance with a gazetted exception or an excavation permit issued by the Heritage Council of NSW.



Source: Topo Maps: LPI NSW

0 1.0 2.0 3km
1:60 000

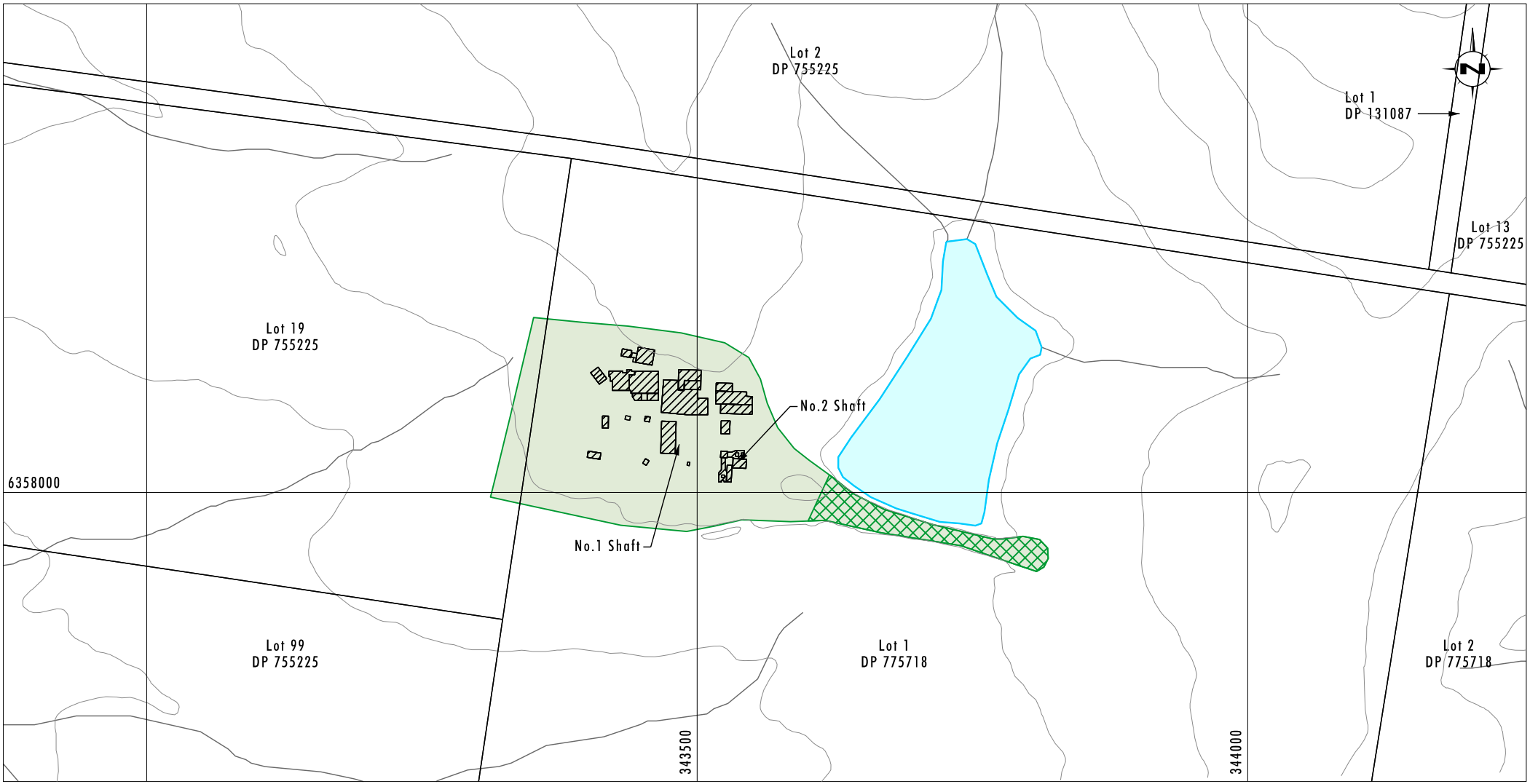
Legend

- Revised 20mm Subsidence Contour for Modified Stage 3 Longwall Layout
- Approved Surface Infrastructure Site
- South Maitland Railway
- South Maitland Railway Related Lots

FIGURE 4.1

Location of Cessnock No.1 Colliery and South Maitland Railway related Lots

File Name (A4): R04/2869_050.dgn
20131016 10.05



Data Source: Austar Coal Mine

Legend

- Kalingo Dam
- Former Pit Top Layout Removed
- Area Prepared for Rehabilitation during MOP
- Area Revegetated to Native Bushland
- Area Stabilised with Grass Seed Mix
- Drainage Line
- Contour Line
- Cadastral Line

Note: 10m Contour Interval, Projection MGA Zone 56

FIGURE 4.2

Kalingo Site - Rehabilitation Schedule

File Name (A4): R04/3264_049.dgn
20131016 9.51

4.4.1 Section 130 Order

Schedule 4 Condition 11 of the Project Approval 08_0111 includes the following note in relation to Lot 1 DP 87087 and Part Lot 1 DP 69968:

> *Lot 1 DP 87087 and Part Lot 1 DP 69968 County of Northumberland, Parish of Heddon is currently subject to a section 130 order under the Heritage Act 1977 to prevent harm to buildings, works, relics etc of the South Maitland Railway, gazetted 16 September, 1983.*

A section 130 order is an order made under section 130 of the *Heritage Act 1977* (NSW) to control demolition. This order normally lasts for one year unless revoked. Note that the section 130 order in relation to Lot 1 DP 87087 and Part Lot 1 DP 69968 has now lapsed. However, if any future works are proposed on or under these lots or any other potential impacts are identified, additional assessment will still be required to be undertaken in accordance with professional standards and guidelines (refer to **Section 4.4**).

4.5 Management of Discovery of New Heritage Sites/Items

If during the course of works any previously unknown historical archaeological material or heritage sites/items are uncovered or identified, all work in the area of the item(s) shall cease immediately and a qualified heritage consultant/archaeologist consulted. If the archaeologist considers the material uncovered constitutes an archaeological 'relic' or a heritage item, the Heritage Branch, OEH will be consulted, in accordance with Section 146 of the *Heritage Act 1977* (NSW), to determine an appropriate course of action prior to the recommencement of work in the area of the item.

If during the course of works previously unknown Aboriginal archaeological material is discovered, all work likely to affect the material (site) shall cease immediately and OEH, relevant Aboriginal stakeholders and a suitably qualified archaeologist will be consulted to determine an appropriate course of action prior to the recommencement of work at that site in accordance with the *Aboriginal Cultural Heritage Management Plan: Austar Mining Complex* (Umwelt 2021).

4.6 General Management Strategies

4.6.1 Heritage Inductions

The heritage status and values of the identified sites will be included in any inductions undertaken by relevant personnel and contractors who may be working within close proximity to these sites. The inductions will include:

- the nature and location of the heritage sites;
- the historical heritage values and significance of the heritage sites;
- the nature of the protection measures being undertaken; and
- information related to the relevant legislation for the protection of historical heritage sites/items (particularly provisions Section 139 and 146 of the *Heritage Act 1977* (NSW)) and the penalties which may arise if sites/items are disturbed/destroyed.

4.6.2 Mapping of Heritage Sites

All identified heritage sites must be mapped on drawings and plans and are to be supplied to all relevant personnel and contractors who may be working within close proximity to these sites.

4.6.3 Excavation Permit

If excavation is required for remediation works, the procedures of Austar's excavation permit will be followed. This provides opportunity for the Austar Environment and Community department to assess the proposed excavation area for potential archaeological items of significance (including checking of mapping).

4.6.4 Management of Skeletal Remains

In the event that a potential burial site or potential human skeletal material is exposed within the project area, the following procedure is to be followed in accordance with the *Policy Directive – Exhumation of Human Remains* (NSW Department of Health 2008), *Skeletal Remains – Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977* (NSW Heritage Office 1998) and the *Aboriginal Cultural Heritage Standards and Guidelines Kit* (NPWS 1997):

- as soon as remains are exposed, work is to halt immediately to allow assessment and management;
- contact local police, OEH and the Heritage Branch;
- a physical or forensic anthropologist should inspect the remains *in situ*, and make a determination of ancestry (Aboriginal or non-Aboriginal) and antiquity (pre-contact, historic or forensic); and
- if the remains are identified as forensic the area is deemed as crime scene; or
- if the remains are identified as Aboriginal, the site is to be secured and the OEH and all registered Aboriginal parties are to be notified in writing; or
- if the remains are non-Aboriginal (historical) remains, the site is to be secured and the Heritage Branch is to be contacted.

The above process functions only to appropriately identify the remains and secure the site. From this time, the management of the remains is to be determined through liaison with the appropriate stakeholders (New South Wales Police Force, forensic anthropologist, OEH, Heritage Branch, registered Aboriginal parties etc) and in accordance with the *Public Health Act 2010*.

Approval from NSW Health, under the *Public Health Act 2010*, will be required prior to removing/exhuming any skeletal remains. If removal/exhumation is required and approved, controlled excavation and removal by the site archaeologists and other appropriate specialists (forensic anthropologist, Aboriginal stakeholders, New South Wales Police Force, as appropriate) will be undertaken in accordance with Heritage Council Skeletal Remains Guidelines and any requirements of the OEH and NSW Health.

A site specific management policy for the removal of any potential human skeletal remains uncovered within the project area will be developed (if skeletal remains are uncovered), in consultation with a physical anthropologist, Heritage NSW and relevant stakeholder groups. The management policy would consider the issues detailed in the Heritage Council Skeletal Remains Guidelines. These issues include but are not limited to:

- **Excavation issues** – including personnel who may need to be required, Occupational Health and Safety and recording.
- **Access issues** – including limited access, security and public and professional participation.
- **Management issues** – including management during excavation and analysis, publicity, interpretation, location of interim resting place (in consultation with relevant stakeholders), ongoing curation of recovered materials and professional access to data.
- **Re-interment and commemoration**.

4.6.5 Contingency Plan for Unpredicted Impacts to Historical Heritage Items

If any additional potential impacts or deterioration to the identified heritage items, other than those discussed in this HHMP, are identified prior to or during the course of activities undertaken at the site, additional assessment may be required to be undertaken in accordance with professional standards and guidelines.

5 CONTINUAL IMPROVEMENT

Austar will implement reasonable and feasible best practice historic heritage management measures appropriate for a closed site. The basis for continuous improvement of historic heritage management will be through ongoing monitoring and the contingency response and adaptive management process outlined in this plan**.**

6 COMPLAINTS, INCIDENTS AND REPORTING

6.1 Community Complaints

Community complaints are to be managed in accordance with the requirements of the Environmental Management Strategy.

A complaints register will be published on the Austar Coal Mine website, which will be updated monthly, and a summary of complaints will be provided in the Annual Review.

6.2 Incident Reporting

Schedule 7 Condition 6 of PA 08_0111 and Schedule 5 Condition 4 of DA 29/95 specify the requirements for incident reporting. An incident is defined as a set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in the approval.

There is inconsistency between the wording of the conditions, however the following protocol addresses the requirements of both conditions.

Austar will notify the Department and any other relevant agencies, of any incident associated with the mine complex as soon as practicable after Austar becomes aware of the incident.

Within 7 days of the date of the incident, Austar will provide a detailed report on the incident to the Department and any other relevant agencies. The report will include the following details:

- The date, time and nature of the exceedance/incident;
- Identify the cause (or likely) cause of the exceedance/incident;
- Describe what action has been taken to date; and
- Describe the proposed measures to address the exceedance/incident.

Further investigation may be required beyond the 7 days depending on the nature of the incident.

6.3 Information Dissemination

A summary of monitoring results will be presented at Austar Community Consultative Committee (CCC) meetings.

Information will also be made available on the Austar website in accordance with the requirements of Schedule 7 Condition 9 of PA 08_0111 and Schedule 5 Condition 12 of DA 29/95.

6.4 Annual Review

In accordance with Schedule 7 Condition 3 of PA 08_0111 and Schedule 5 Condition 5 of DA 29/95, Austar will prepare an Annual Review for submission to the Department.

7 DOCUMENT REVIEW AND REVISION

Schedule 7 Condition 4 of PA 08_0111 specifies the requirements for revision of strategies plans and programs, as follows:

> *Within 3 months of:*
> *(a) the submission of an annual review under Condition 3 above;*
> *(b) the submission of an incident report under Condition 6 below;*
> *(c) the submission of an audit report under Condition 7 below; or*
> *(d) any modification to the conditions of this approval, (unless the conditions require otherwise),*
> *the Proponent shall review the strategies, plans, and programs required under this approval, to the satisfaction of the Director-General. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Director-General.*
>
> *Note: The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the project.*

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Appendix A:
Approval Requirements

PROJECT APPROVAL/DEVELOPMENT CONSENT REQUIREMENTS

Relevant conditions from PA 08_0111 and DA 29/95 and where these conditions are addressed in this Plan are listed in the tables below.

As the trigger under DA 29/95 for preparing a Heritage Management Plan has not been initiated (i.e. re-commencing any mining activities at the Cessnock No 1 Colliery surface facilities at Kalingo), the generic requirements relating to management plans have not been included.

PROJECT APPROVAL CONDITIONS (PA 08_0111)

Schedule	Project Approval Conditions	Section of this Plan
2	**STRATEGIES, PLANS AND PROGRAMS**	
2	12. With the approval of the Director-General, the Proponent may submit any strategies, plans or programs required by this approval on a progressive basis.	Noted
2	13. With the approval of the Director-General, the Proponent may integrate any strategies, plans, programs, reviews, audits or committees required by this approval with any similar requirement under another development consent or approval relating to the Austar Mine Complex.	HHMP addresses PA 08_0111 and DA 29/95 conditions
4	**SPECIFIC ENVIRONMENTAL CONDITIONS - GENERAL**	
	Historic Heritage 11. The Proponent shall prepare and implement a Heritage Management Plan for the project to the satisfaction of the Director-General. The plan must: (a) be prepared by a suitably qualified heritage consultant in consultation with Council and the Heritage Office, and be submitted to the Director-General for approval prior to the commencement of second workings in Stage 3 and construction of the Surface Infrastructure Site (other than shaft construction referred to in condition 1 above);	1.4 and 4.1
	(b) include, in addition to the standard requirements for management plans (see condition 2 of schedule 7), a program/procedures for: • monitoring and management of identified heritage sites within the mining area and other disturbance areas;	4.2
	• undertaking a Heritage Impact Assessment to the satisfaction of the Director-General, prior to re-commencing any mining activities at Cessnock No.1 Colliery surface facilities at Kalingo;	4.3
	• obtaining relevant approvals under the Heritage Act 1977 for any works proposed to be undertaken on or under Lot 1 DP 87087 and Part Lot 1 DP 69968 County of Northumberland, Parish of Heddon; and	4.4
	• managing the discovery of any new heritage items during the project.	4.5
	Note: Lot 1 DP 87087 and Part Lot 1 DP 69968 County of Northumberland, Parish of Heddon is currently subject to a section 130 order under the Heritage Act 1977 to prevent harm to buildings, works, relics etc of the South Maitland Railway, gazetted 16 September, 1983.	4.4.1
7	**ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING**	
	Management Plan Requirements 2. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:	
	(a) detailed baseline data;	2

Schedule	Project Approval Conditions	Section of this Plan
	(b) a description of: • the relevant statutory requirements (including any relevant approval, licence or lease conditions); • any relevant limits or performance measures/criteria; • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;	Appendix A
	(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	4
	(d) a program to monitor and report on the: • impacts and environmental performance of the project; • effectiveness of any management measures (see (c) above);	4.2
	(e) a contingency plan to manage any unpredicted impacts and their consequences;	4.6.5
	(f) a program to investigate and implement ways to continually improve the environmental performance of the project over time;	5
	(g) a protocol for managing and reporting any: • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and	6.2
	(h) a protocol for periodic review of the plan.	7
7	**Annual Review** Each year, the Proponent shall review the environmental performance of the mine complex to the satisfaction of the Director-General. This review must: (a) describe the works that were carried out in the past year, and the works that are proposed to be carried out over the next year; (b) include a comprehensive review of the monitoring results and complaints records of the mine complex over the past year, which includes a comparison of these results against the · the relevant statutory requirements, limits or performance measures/criteria; · the monitoring results of previous years; and · the relevant predictions in the EA and Extraction Plan; (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance; (d) identify any trends in the monitoring data over the life of the mine complex; (e) identify any discrepancies between the predicted and actual impacts of the mine complex, and analyse the potential cause of any significant discrepancies; and (f) describe what measure will be implemented over the next year to improve the environmental performance of the mine complex.	6.4
7	**Revision of Strategies, Plans and Programs** 4. Within 3 months of: (a) the submission of an annual review under Condition 3 above; (b) the submission of an incident report under Condition 6 below; (c) the submission of an audit report under Condition 7 below; or (d) any modification to the conditions of this approval, (unless the conditions require otherwise), the Proponent shall review the strategies, plans, and programs required under this approval, to the satisfaction of the Director-General. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Director-General. *Note: The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the project.*	7

Schedule	Project Approval Conditions	Section of this Plan
7	**Incident Reporting** 6. The Proponent shall notify the Director-General and any other relevant agencies of any incident associated with the mine complex as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.	6.2
7	**Access to Information** 9. From the end of 2009, the Proponent shall make the following information publicly available on its website: (a) a copy of all current statutory approvals for the mine complex; (b) a copy of the current environmental management strategy and associated plans and programs; (c) a summary of the monitoring results of the mine complex, which have been reported in accordance with the various plans and programs approved under the conditions of this approval; (d) a complaints register, which is to be updated on a monthly basis; (e) a copy of the minutes of CCC meetings; (f) a copy of any Annual Reviews (over the last 5 years); (g) a copy of any Independent Environmental Audit, and the Proponent's response to the recommendations in any audit; and (h) any other matter required by the Director-General.	6.3

DEVELOPMENT CONSENT CONDITIONS (DA 29/95)

Schedule	Development Consent Conditions	Section of this Plan
5	**ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING**	
3	**SPECIFIC ENVIRONMENTAL CONDITIONS**	
	European Heritage **25.** The Applicant must: (a) undertake a Heritage Impact Assessment of the site and prepare a Heritage Management Plan, in consultation with the Council, for the approval of the Heritage Council of NSW prior to re-commencing any mining activities at the Cessnock No 1 Colliery surface facilities at Kalingo;	Not triggered
	(b) make application under section 132 of the *Heritage Act 1977* for any works proposed to be undertaken on or under Lot 1, DP 87087 and Part Lot 1, DP 69968 County Northumberland, Parish Heddon; and	Not triggered
	(c) take all reasonable measures to protect the ring-barked tree referenced in the April 2006 SEE, to the satisfaction of the Secretary.	4.2.3
	Note: The land referred to in condition 25(b) is currently subject to a section 130 order under the Heritage Act 1977 to prevent harm to buildings, works, relics etc of the South Maitland Railway, gazetted 16 September, 1983.	Noted
5	**Regular Reporting** 4A. The Applicant must provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.	6.3

Schedule	Development Consent Conditions	Section of this Plan
5	**Annual Review** 5. By the end of September each year, unless the Secretary agrees otherwise, the Applicant must submit a review to the Department reviewing the environmental performance of the development to the satisfaction of the Secretary. This review must: (a) describe the development (including any rehabilitation) that was carried out in the previous year to 30 June, and the development that is proposed to be carried out over the current year to 30 June; (b) include a comprehensive review of the monitoring results and complaints records of the development over the previous year to 30 June, which includes a comparison of these results against the: • relevant statutory requirements, limits or performance measures/criteria; • requirements of any plan or program required under this consent; • monitoring results of previous years; and • relevant predictions in the documents listed in condition 2 of Schedule 2; (c) identify any non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance; (d) identify any trends in the monitoring data over the life of the development; (e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (f) describe what measures will be implemented over the next year to improve the environmental performance of the development.	6.4
5	**Access to Information** 12. The Applicant must: (a) make copies of the following publicly available on its website: • the documents listed in condition 2 of Schedule 2; • all current statutory approvals for the development; • approved strategies, plans and programs required under the conditions of this consent; • a comprehensive summary of the monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of this consent; • a summary of the progress of the development; • contact details to enquire about the development or to make a complaint; • a complaints register, which is to be updated on a monthly basis; • minutes of CCC meetings; • the last five annual reviews; • any independent environmental audit of the development, and the Applicant's response to the recommendations in any audit; • any other matter required by the Secretary; and (b) keep this information up-to-date, to the satisfaction of the Secretary.	6.3

STATEMENT OF COMMITMENTS

The Statement of Commitment from PA 08_0111 relevant to historic heritage and where this commitment is addressed in this Plan is listed in the table below.

PROJECT APPROVAL STATEMENT OF COMMITMENTS (08_0111)

Appendix	Statement of Commitments	Section of this Plan
3	**1.5 HERITAGE**	
	1.5.8 Historic Heritage Management Plan incorporating all of Austar Mine Complex will be developed.	This document

Appendix B:

Management Plan Approval

Planning, Industry & Environment

Ms Carly McCormack
Environment & Community Superintendent
Austar Coal Mine Pty Ltd
Level 18, Darling Park – Tower 2
201 Sussex Street
Sydney, NSW, 2000

30/06/2021

Dear Ms McCormack,

Austar Coal Mine Project (MP08_0111)
Heritage Management Plan

I refer to the Heritage Management Plan which was submitted in accordance with condition 11 of Schedule 4 of the approval for the Austar Coal Mine Project (MP08_0111).

The Department has carefully reviewed the document and is satisfied that it is consistent with the relevant conditions of consent.

Accordingly, the Planning Secretary has approved the Heritage Management Plan (Revision 2, dated May 2021). Please ensure that the approved plan is placed on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Callum Firth at callum.firth@dpie.nsw.gov.au.

Yours sincerely

Matthew Sprott
Director
Resource Assessments
as nominee of the Planning Secretary

Appendix C:

Significance Assessment – Clarification and Justification

Site Name	Description	Significance Assessment
Items 2 and 3	Quarry 1 and 2	Criterion (a) Historical: While forming part of the historical development of the area and likely to have been used as a source of local building materials for road and building construction are not known to be associated with any significant building enterprise and are unlikely to provide information not already known from the historical record; Criterion (b) Associative: are unlikely to provide evidence of any strong or special associations, for example with the prominent Josephson, Palmer or McDonald families; Criterion (c) Aesthetic: do not generally demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: unlikely that the sites would have a strong association with any previous or contemporary community or group; Criterion (e) Scientific: are unlikely to provide any research potential beyond their immediate physical presence; Criterion (f) Rarity: are not associated with an unusual or remarkable aspect of the region's history, are typical of localised quarrying for road and building construction and are unlikely to meet this criteria; and Criterion (g) Representativeness: are representative of local quarrying sites typically found in a rural landscape with a history of pastoral and agricultural activities. In regards to archaeological significance (Bickford and Sullivan 1984): 1) Can the site contribute knowledge that no other resource can? 2) Can the site contribute knowledge that no other site can? 3) Is this knowledge relevant to general questions about human history or other substantive questions regarding human history, or does it contribute to other major research questions? Bickford and Sullivan's questions are answered in the negative and in conjunction with the Heritage Branch assessment criteria these sites are therefore considered to have no heritage significance.

Site Name	Description	Significance Assessment
Item 4	Ford	Criterion (a) Historical: demonstrates the pattern of land use and historical development of the area. Is unlikely to provide information not already known from the historical record; Criterion (b) Associative: unlikely to provide evidence of any strong or special associations, for example with the prominent Josephson, Palmer or McDonald families; Criterion (c) Aesthetic: does not demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: unlikely to have a strong association with any previous or contemporary community or group; Criterion (e) Scientific: unlikely to have significant archaeological remains with any research potential; Criterion (f) Rarity: typical of rural creek crossings typically found within rural landscapes; and Criterion (g) Representativeness: representative of similar sites typically found in a rural landscape. In regards to archaeological significance (Bickford and Sullivan 1984): 1) Can the site contribute knowledge that no other resource can? 2) Can the site contribute knowledge that no other site can? 3) Is this knowledge relevant to general questions about human history or other substantive questions regarding human history, or does it contribute to other major research questions? Bickford and Sullivan's questions are answered in the negative and in conjunction with the Heritage Branch assessment criteria these sites are therefore considered to have no heritage significance.

Site Name	Description	Significance Assessment
Items 9 and 10	Remnant timber posts	Criterion (a) Historical: demonstrate the pattern of land use and historical development of the area. Are unlikely to provide information not already known from the historical record; Criterion (b) Associative: unlikely to provide evidence of any strong or special associations, for example with the prominent Josephson, Palmer or McDonald families; Criterion (c) Aesthetic: do not demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: are unlikely that the timber posts would have a strong association with any previous or contemporary community or group; Criterion (e) Scientific: may contribute information about how the landscape was used and changed during its use as pastoral land. However, in general as individual items have little research potential beyond their immediate physical presence; Criterion (f) Rarity: are typical of timber posts found within rural landscapes such as that of the project area and are unlikely to meet this criteria; and Criterion (g) Representativeness: are representative of similar sites typically found in a rural landscape with a history of pastoral and agricultural activities. In regards to archaeological significance (Bickford and Sullivan 1984): 1) Can the site contribute knowledge that no other resource can? 2) Can the site contribute knowledge that no other site can? 3) Is this knowledge relevant to general questions about human history or other substantive questions regarding human history, or does it contribute to other major research questions? Bickford and Sullivan's questions are answered in the negative and in conjunction with the Heritage Branch assessment criteria the site is therefore considered to have no heritage significance.

Site Name	Description	Significance Assessment
Item 12	Cut tree stump	Criterion (a) Historical: demonstrates the pattern of land use and historical development of the area in terms of timber felling/land clearing. Is unlikely to provide information not already known from the historical record; Criterion (b) Associative: is unlikely to provide evidence of any strong or special associations, for example with the prominent Josephson, Palmer or McDonald families; Criterion (c) Aesthetic: does not demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: is unlikely that the item would have a strong association with any previous or contemporary community or group; Criterion (e) Scientific: may contribute information about how the landscape was used and changed. However, in general as an individual item has little research potential beyond immediate physical presence; Criterion (f) Rarity: typical of sites found within rural landscapes such as that of the project area and unlikely to meet this criteria; and Criterion (g) Representativeness: representative of sites typically found in a rural landscape with a history of pastoral and agricultural activities. In regards to archaeological significance (Bickford and Sullivan 1984): 1) Can the site contribute knowledge that no other resource can? 2) Can the site contribute knowledge that no other site can? 3) Is this knowledge relevant to general questions about human history or other substantive questions regarding human history, or does it contribute to other major research questions? Bickford and Sullivan's questions are answered in the negative and in conjunction with the Heritage Branch assessment criteria the site is therefore considered to have no heritage significance.

Site Name	Description	Significance Assessment
Item 14	Possible House/Timber Shed Site	Criterion (a) Historical: rural buildings/structures can demonstrate the pattern of land use and historical development of the area. However, the site of a former house or timber shed is unlikely to provide information not already known from the historical record; Criterion (b) Associative: unlikely to provide evidence of any strong or special associations, for example with the prominent Josephson, Palmer or McDonald families; Criterion (c) Aesthetic: does not demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: unlikely that the site would have a strong association with any previous or contemporary community or group; Criterion (e) Scientific: does not form part of any identified significant grouping of rural farm buildings and has little research potential beyond its immediate physical presence; Criterion (f) Rarity: typical of sites of demolished rural infrastructure found within rural landscapes such as that of the project area and are unlikely to meet this criteria; and Criterion (g) Representativeness: representative of similar sites typically found in a rural landscape with a history of pastoral and agricultural activities. In regards to archaeological significance (Bickford and Sullivan 1984): 1) Can the site contribute knowledge that no other resource can? 2) Can the site contribute knowledge that no other site can? 3) Is this knowledge relevant to general questions about human history or other substantive questions regarding human history, or does it contribute to other major research questions? Bickford and Sullivan's questions are answered in the negative and in conjunction with the Heritage Branch assessment criteria the site is therefore considered to have no heritage significance.

Site Name	Description	Significance Assessment
Item 18	Potential early roads	Criterion (a) Historical: if present could demonstrate the pattern of land use and historical development of the area. However, are unlikely to provide information not already known from the historical record; Criterion (b) Associative: are unlikely to provide evidence of any strong or special associations, for example with the prominent Josephson, Palmer or McDonald families; Criterion (c) Aesthetic: if present would not generally demonstrate distinctive aesthetic qualities or technical innovations. Criterion (d) Social: if present unlikely that they would have a strong association with any previous or contemporary community or group; Criterion (e) Scientific: if present likely to date to the early part of the twentieth century and consist of dirt tracks that have never been sealed. Could contribute to the understanding of the pattern of land use and historical development of the area and provide information about how the landscape was used and changed during its use as pastoral land. However, in general as individual items they are unlikely to have research potential. Criterion (f) Rarity: would be typical of local roads/tracks found within rural landscapes such as that of the project area and unlikely to meet this criteria; and Criterion (g) Representativeness: would be representative of local roads/tracks typically found in a rural landscape with a history of pastoral and agricultural activities. In regards to archaeological significance (Bickford and Sullivan 1984): 1) Can the site contribute knowledge that no other resource can? 2) Can the site contribute knowledge that no other site can? 3) Is this knowledge relevant to general questions about human history or other substantive questions regarding human history, or does it contribute to other major research questions? Bickford and Sullivan's questions are answered in the negative and in conjunction with the Heritage Branch assessment criteria the site is therefore considered to have no heritage significance.