RAVENSWORTH
OPERATIONS

GLENCORE

Heritage Management

Plan

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1. Introduction

Ravensworth Operations (Ravensworth) is a coal mining operation located between the townships of Muswellbrook and Singleton in the Upper Hunter Valley region of New South Wales (NSW). Ravensworth is comprised of the Ravensworth Open Cut (ROC), Ravensworth Underground Mine (RUM) and the Ravensworth Coal Handling and Preparation Plant (RCHPP) and is a wholly owned subsidiary of Glencore Coal Assets Australis Pty Ltd (GCAA) (refer to **Figure 1.1**).

Ravensworth is managed in accordance with the Project Approval (PA 09_0176) (as modified) for the Ravensworth Project (the Project), which was granted under the former Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Project consolidated a number of active and former open cut mines including Ravensworth West, Narama, Cumnock, Ravensworth South and Ravensworth No. 2. The Project also facilitated the expansion of open cut mining activities, including the new Ravensworth North mining area.

PA09_0176 has provided for the integration of operational aspects of the mining operations in the area, allowing for a consistent and integrated approach to environmental management and mine planning (refer to **Section 1.2**). Ravensworth is committed to implementing continued mining operations in the context of updated and contemporary environmental management requirements.

RUM formally operated under Development Consent DA 104/96 dated 20 November 1996 (File No. N95/00395/001). Through subsequent modifications of DA 104/96, the most recent being modification 10 (MOD10) approved on the 6 July 2022 by the NSW Department of Planning, Housing and Infrastructure (DPHI), RUM had an approved maximum production of 7 Mtpa of ROM coal. Continued operations in the current climate have proven to be uneconomical and RUM was placed in care and maintenance in October 2014 and commenced closure activities during 2023.

Ravensworth is shown in **Figure 1.2**.

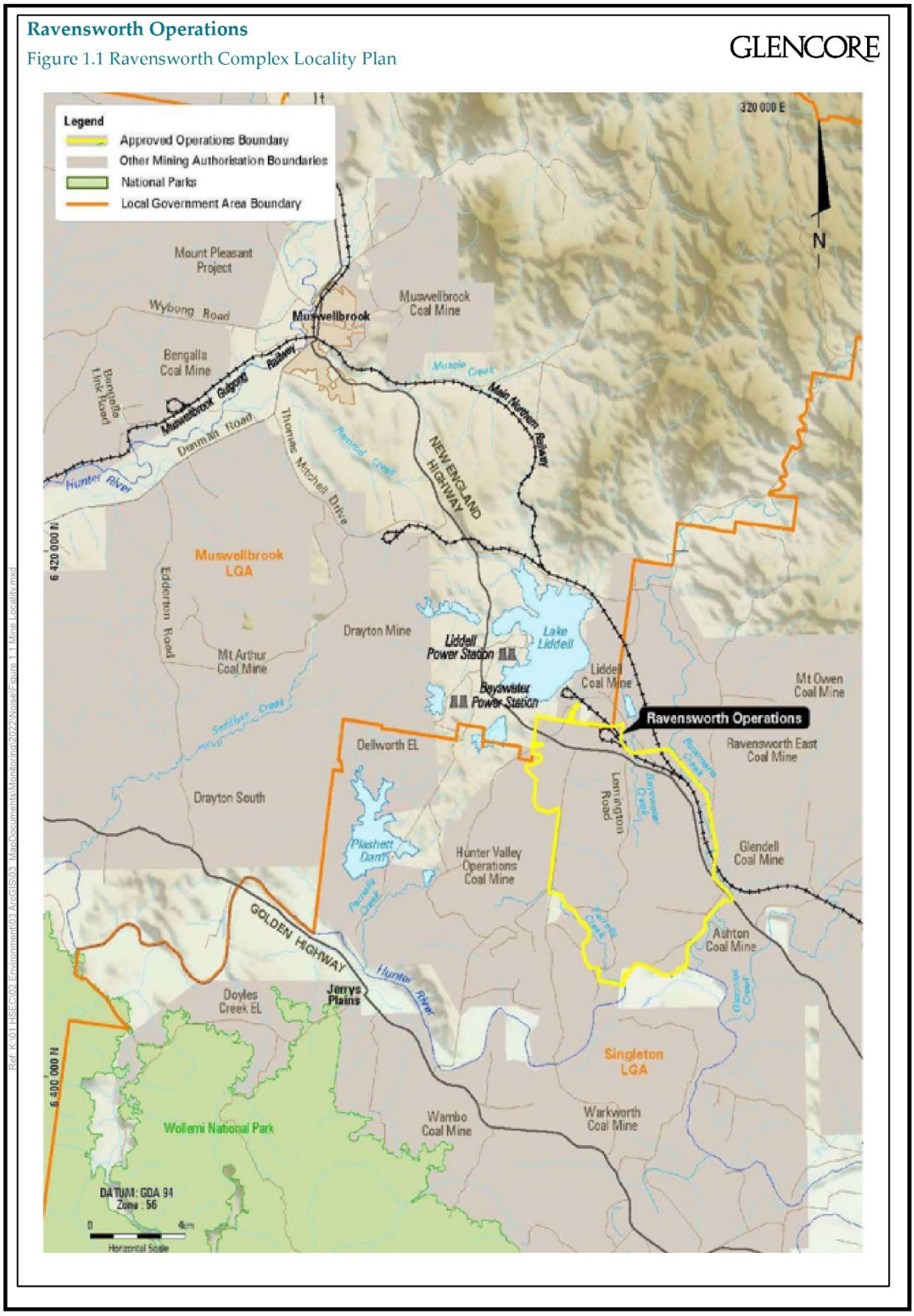

Figure 1.1 Locality Plan

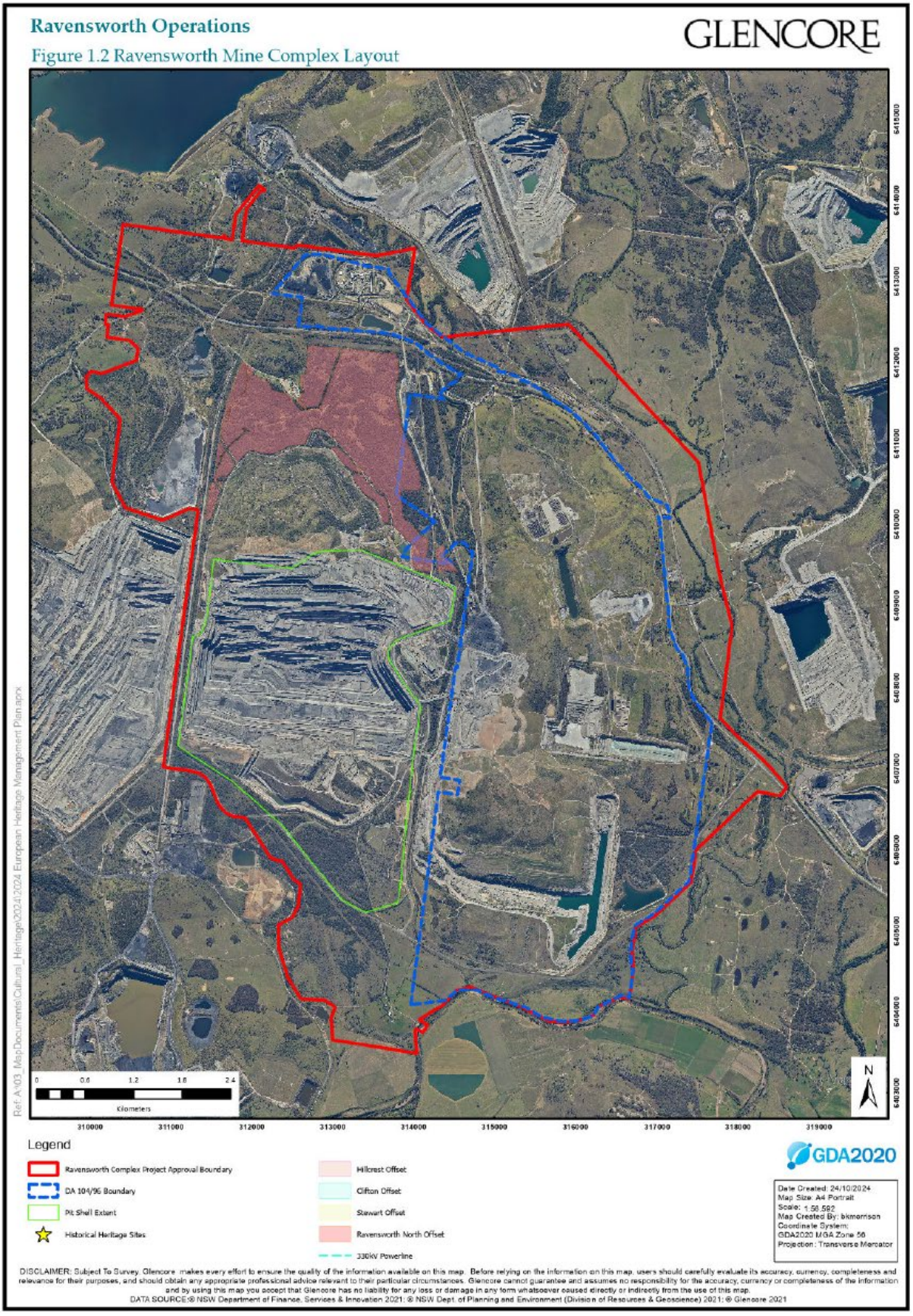

Figure 1.2 Mine Layout

1.1 Purpose and Scope

This Heritage Management Plan (HMP) (the Plan) addresses the historical heritage management requirements associated with the Project including heritage items within Biodiversity Offset Areas[1] (BOAs).

This HMP does not include heritage management strategies with regards to Aboriginal cultural heritage (refer *to Aboriginal and Cultural Heritage Management Plan* – ACHMP).

This HMP has been prepared to address Schedule 3, Condition 42(a) and Condition 42(c) of Project Approval 09_0176 (refer to **Section 1.2**). As such, it addresses the identified heritage sites/items within the Project Area and the listed heritage items outside but in the vicinity of the Project Area and heritages items within the BOAs.

The *European Heritage Assessment: Ravensworth Operations Project* (Umwelt, 2009a) (**Section 1.5**) outlined the management strategy for the heritage items assessed as being at risk of impact as a result of the Project. This HMP 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.

1.2 Regulatory Requirements

PA09_0176 for the Ravensworth was assessed under the EP&A Act. Project Approval for Ravensworth was gained from the Minister for Planning (now DPHI) on 11 February 2011; with subsequent modifications approved in August 2013 (MOD 1), December 2014 (MOD 2), February 2016 (MOD 3) and May 2023 (MOD4).

The requirement for this HMP arises from Schedule 3, Condition 42(a) and 42(c) of PA09_0176. The ACHMP has been prepared by the Ravensworth to address Aboriginal heritage on site and 42(b) of PA09_0176 (**Table 1.1**).

A full list of the Project Approval PA09_0176 conditions relevant to this HMP and where they are addressed within this HMP is provided in **Table 1.1**.

The Statement of Commitments (SoCs) relevant to this HMP contained within Appendix 3 of the Project Approval PA09_0176, and where they are addressed in this HMP are provided in **Table 1.2**.

Table 1.1 Project Approval Conditions

Heritage Management Plan	Relevant Section of this Document
42 The Proponent shall prepare and implement a Heritage Management Plan for the development to the satisfaction of the Planning Secretary. The plan must: (a) be prepared in consultation with the Aboriginal community, the Heritage Council, Council, local historical organizations and relevant landowners, and be submitted to the Planning Secretary for approval by the end of June 2011;	This HMP 1.3 and Appendix B

[1] Further information and management strategies for BOAs are detailed in the Ravensworth Biodiversity Offset Management Plan (BOMP) in accordance with the requirements of PA 09_0176 (specifically Schedule 3, Condition 32 and Schedule 3, Condition 38), DA 104/96).

Heritage Management Plan	Relevant Section of this Document
(b) include the following for the management of Aboriginal heritage on site: • a plan/s of management for the Ravensworth North Offset Area, Hillcrest Offset Area, Clifton Offset Area, Stewart Offset Area, Farrells Creek 1 Aboriginal Artefact Management Area and RUM Dam Conservation Area (or agreed alternative to the RUM Dam Conservation Area); and • a program/procedures for: o salvage, excavation and/or management of Aboriginal sites and potential archaeological deposits within the development disturbance area; o protection and monitoring of Aboriginal sites outside the development disturbance area; o monitoring, notifying and managing the effects of blasting on potentially affected Aboriginal sites; o managing the incremental ground vibration limits under condition 10A above; o maintaining and managing access to Aboriginal sites by the Aboriginal community; o contributing to Aboriginal cultural heritage management (in accordance with the commitments in the EA); o managing the discovery of any new Aboriginal objects or skeletal remains during the development; and o ongoing consultation and involvement of the Aboriginal communities in the conservation and management of Aboriginal cultural heritage on the site; and	Not required by this HMP Refer to ACHMP
(c) include the following for the management of other historic heritage on site: • Measures to manage potential impacts on, and the heritage values of, the Ravensworth homestead, Chain of Ponds Hotel and Ravensworth Public School; and	5.1
• a program/procedures for: • photographic and archival recording of heritage items directly or indirectly affected by the development;	5.2
• protection and monitoring of heritage items outside the development disturbance area;	5.1 & 5.3
• monitoring, notifying and managing the effects of blasting on potentially affected heritage items; and	5.3
• managing the discovery of any new heritage items or skeletal remains identified during the development.	5.4.5 & 5.4.6
The Applicant must implement the approved management plan as approved from time to time by the Planning Secretary	This HMP

The SOCs relevant to his HMP and where they are addressed in the HMP are detailed in **Table 1.2**.

Table 1.2 Statement of Commitments

Historical Heritage SoCs	Relevant Section of this Document
6.11.1 The Applicant will implement the following historical heritage management measures: • management of blasting practices to meet relevant blast impact assessment criteria at listed heritage sites/items within the vicinity of the development area; • a qualified heritage consultant to NSW Heritage Office's standards will undertake archival recording of historic heritage sites of local significance directly or indirectly impacted by the development (HH1, HH4, HH5, HH11, HH14, HH15, HH16, HH17, and HH18) prior to the commencement of mining.	5.3 5.2
6.11.2 In the unlikely event that unexpected archaeological remains or potential heritage items not identified in the EA are discovered during the development, all works in the immediate area will cease, the remains and potential impacts will be assessed by a qualified archaeologist or heritage consultant and, if necessary, the Heritage Council, the Department will be notified in accordance with the Heritage Act 1977.	5.4.5 5.4.6

Table 1.3 PA09_0176 Management Plan Requirements

Management Plan Requirements	Relevant Section of this Document
The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include: (a) detailed baseline data;	1.6
(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 development or any management measures;	1.2 5.0
(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; (d) a program to monitor and report on the: • impacts and environmental performance of the development; • effectiveness of any management measures (see (c) above);	
(e) a contingency plan to manage any unpredicted impacts and their consequences; (f) a program to investigate and implement ways to improve the environmental performance of the development over time;	6.0
(g) a protocol for managing and reporting any: • incidents; • complaints; • non-compliances with the conditions of this consent and statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and (h) a protocol for periodic review of the plan.	6.5 6.6 6.4
Note: The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans	

1.3 Stakeholder Consultation

As per Condition 42 of the Project Approval, this HMP is to be prepared in consultation with the Heritage Council (here within referred to as Heritage NSW), Singleton Council (Council), local historical organisations, Aboriginal Community and relevant landowners.

Previous versions of the HMP have been submitted to the Heritage NSW, Council, local historical organisations, Registered Aboriginal Parties and relevant applicable landowners concurrently. Any comments provided by the Heritage NSW, Council, local historical organisations, Registered Aboriginal Parties and relevant landowners have been included in the revised document to be re-submitted to the DPHI (refer to **Section 5.4.2 and Appendix B).**

In addition, research undertaken by Rob Tickle of the Muswellbrook Local & Family History Society Inc (MLFHS) was utilised during the preparation of the 2009 European Heritage Assessment report. Consultation and survey of the sites with Rob Tickle of a previously identified shearing shed (site/item HH20) and early hut site and stockyards (site/item HH21) near the convergence of Davis and Bayswater Creeks area was also undertaken as part of the *European Heritage Assessment: Ravensworth Operations Project* (Umwelt, 2009a).

1.4 Audit Recommendations

In accordance with Condition 8, Schedule 5 of Project Approval (PA) 09_0176, and Condition 7, Schedule 4 of Development Consent (DA) 104/96) Ravensworth completed the 2024 Independent Environmental Audit (IEA) for both Ravensworth Open Cut and Ravensworth Underground Mine in June 2024. This HMP has been updated to address the IEA's minor recommendation of correcting the document version history in **Table 8.1** (refer to **Section 8.1**).

1.5 Roles and Responsibilities

Relevant roles and responsibilities associated with this HMP are presented in **Table 1.3** below.

Table 1.4 Roles and Responsibilities

Role	Responsibilities
Operations Manager	• Providing adequate resources for the implementation of this HMP • Implementation of this plan for mining operations to ensure compliance with Project Approval requirements.
Environment and Community Manager (ECM)	• Coordinating the day-to-day implementation of this HMP. • Contacting qualified archaeologist/heritage consultant, Heritage NSW as appropriate, should previously unknown historical archaeological material /heritage sites/items be uncovered or identified. • Contacting all appropriate stakeholders if human skeletal material is exposed during works. • Coordinating the periodic review of this HMP.
Qualified archaeologist/ heritage consultant	• Providing specialist archaeological/heritage services as required.
All employees and contractors	• Complying with the management requirements and commitments contained within this HMP.

1.6 Baseline Data

A *European Heritage Assessment: Ravensworth Operations Project* (Umwelt, 2009a) was prepared as part of the Environmental Assessment (EA) for the Ravensworth Operations Project (Umwelt, 2010) to examine the European heritage features associated with the project with the aim of assessing and evaluating the potential heritage impacts associated with the project. The report identified the heritage sites contained within the Project Area and assessed the significance of any potential impacts on these sites resulting from the project. For further information and historical context refer to **Section 3.0**.

The *European Heritage Assessment: Ravensworth Operations Project* (Umwelt, 2009a) assessed 28 potential heritage sites/items located within the Project Area (refer to **Section 4.1**). Of these 28 potential heritage items, 10 were assessed as being of local significance and potentially at risk of being impacted (directly or indirectly) as a result of the project (refer to **Section 4.1**). Ravensworth Public School was the only site/item subject to any form of statutory heritage listing within the Project Area. Four listed heritage items were identified as being located outside of the disturbance footprint but within the vicinity of the Project Area. **Table 1.4** identifies the listed heritage items known to be located within, and in the vicinity of, the Project Area (refer to **Figure 1.3**).

In 2018 a separate heritage assessment report prepared by Ecological Australia the *Hillcrest Offset Area*, *Ravensworth – Heritage Assessment* (ELA, 2018), assessing the heritage significance of the Hillcrest Offset Area properties. The Hillcrest Offset Area property is owned by Glencore and contains

a former homestead known as 'Hillcrest' and a cottage known as 'Fairview', both of which are identified as local heritage items on Schedule 5 of the Muswellbrook Local Environment Plan (LEP) 2009. The other buildings on the property are not listed heritage items. This Heritage Assessment was prepared to assess the condition and significance of all the buildings in the offset area and provide guidance for potential future asbestos removal (for locality of BOAs in relation to the Project, refer to **Figure 1.4**).

Table 1.5 Heritage Items within, and in the Vicinity of, the Project Area and Hillcrest Offset Area

Item Name	Location	Listing
Ravensworth Public School, New England Highway	Within Project Area	Singleton LEP – local significance
Chain of Ponds Inn, Liddell	Outside Project Area	State Heritage Register (SHR). Singleton LEP – state significance. Register of the National Estate (RNE) National Trust of Australia (NSW) register
Ravensworth Homestead, Hebden Road	Outside Project Area	Singleton LEP – regional significance. RNE
St. Clements Anglican Church, Camberwell	Outside Project Area	Singleton LEP – local significance
Community Hall (C.I.), Camberwell	Outside Project Area	Singleton LEP – local significance
Hillcrest	Outside Project Area	Muswellbrook LEP – local significance
Fairview	Outside Project Area	Muswellbrook LEP – local significance

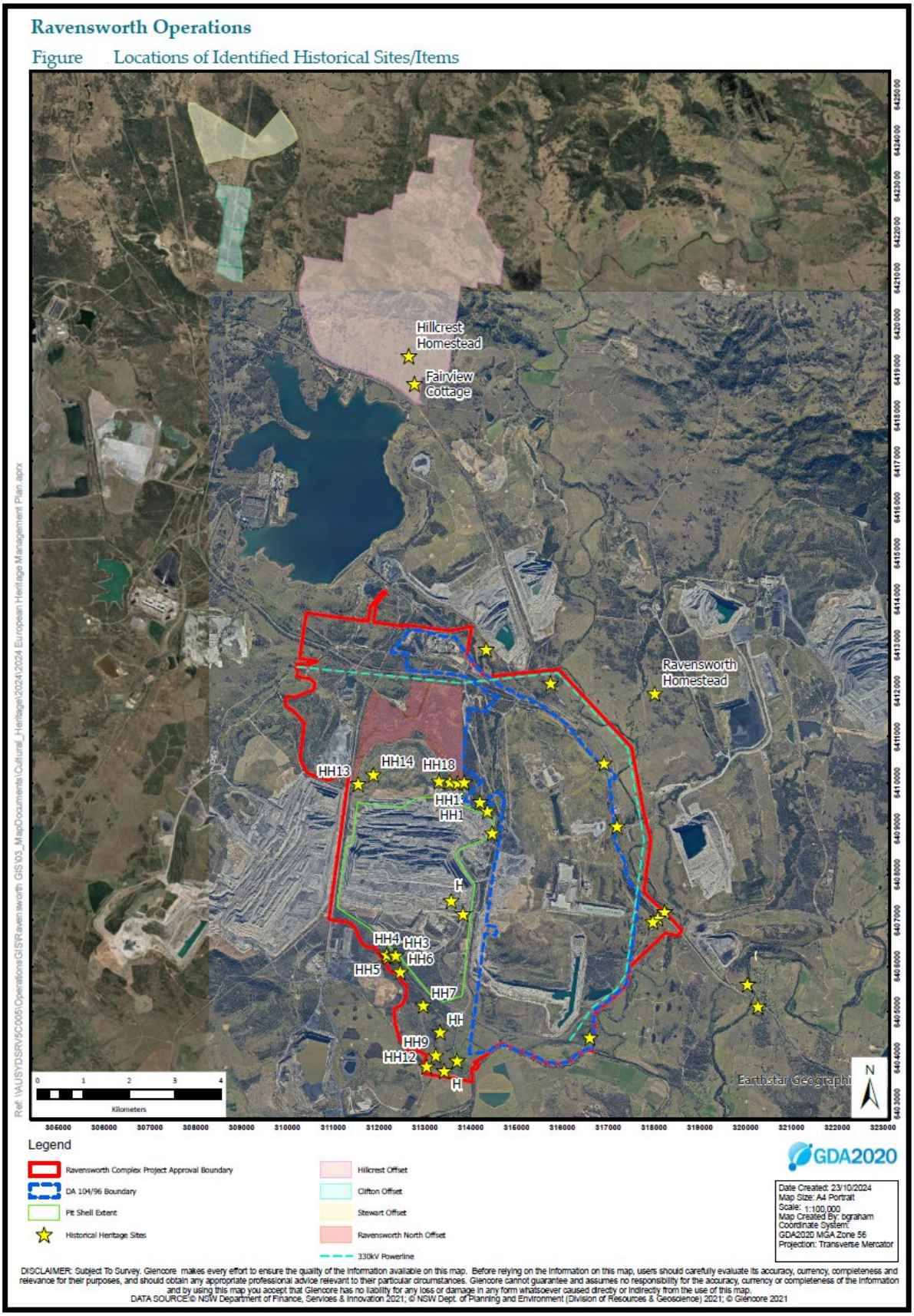

Figure 1.3 Heritage Sites

2. Commitments

All commitments outlined within this HMP are detailed in **Table 2.1** below. Management commitments requiring actioning will be entered into the Ravensworth Compliance Management system (CMO) and actioned, records of documentation associated with the management commitments will be maintained within the compliance management system

Table 2.1 Commitments within this Management Plan

Commitment No.	Management Plan Commitment	Relevant Section
1	The potential for indirect impacts through vibration from blasting will be managed.	Section 4.2
2	Ravensworth Operations will ensure that relevant blast criteria are met through management of blasting practices over the life of the development.	Section 5.1
3	Prior to 2020 the Oaklands will be assessed and if deemed appropriate, particularly the stable/ shearing shed additional none intrusive structural supports will be used to support any structures that may require it;	Section 5.1.1
4	Any actions undertaken as part of management of the Oaklands will be recorded and maintained and compared to the baseline dilapidation survey to track the interventions made;	Section 5.1.1
5	An annual inspection of the Oaklands homestead for pests and the ingress of pests will be undertaken and if required treatment will be undertaken;	Section 5.1.1
6	A biannual inspection of the Oaklands homestead will be undertaken utilising the dilapidation survey as a reference. The aim of the inspection will be to identify any deterioration and required maintenance work necessary to ensure the ongoing protective care of the site.	Section 5.1.1
7	If blast monitoring, as described above, identifies blasts that have exceeded the ground vibration impact assessment criteria at these sites, additional inspections will be undertaken in order to identify any deterioration as a result of the exceeded levels	Section 5.3.1
8	If the archaeologist considers the material uncovered constitutes an archaeological 'relic' or a heritage item, the Heritage Council, Heritage NSW will be consulted.	Section 5.4.5
9	Any skeletal remains uncovered during the course of mining will be removed in a sensitive and dignified manner in accordance with Heritage Council Skeletal Remains Guidelines and any requirements of the Heritage NSW and NSW Health.	Section 5.4.6
10	The ECM will report to the Operations Manager the results of investigations of any complaints, any exceedances of the blast overpressure or vibration assessment criteria for those heritage items and any non-compliances within this HMP.	Section 6.1

Commitment No.	Management Plan Commitment	Location in Document
11	Ravensworth must immediately notify the DPHI and any other relevant agencies after it becomes aware of an incident. Within seven days of becoming aware of a non-compliance, Ravensworth must notify the Department of the non-compliance.	Section 6.3 and 6.5
12	The Annual Review must: a) describe the works (including any rehabilitation) 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 development over the past year, which includes a comparison of these results against the: • relevant statutory requirements, limits or performance measures/criteria; • monitoring results of previous years; and • relevant predictions in the EA; 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 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. All community complaints during each reporting period will be provided in the Annual Review	Section 6.3.1 Section 6.6
13	A summary of all blast monitoring results for those heritage items will be made publicly available on the Ravensworth website	Section 6.3
14	This HMP and its supporting documents will be reviewed by the ECM within three months of: • The submission of the Annual Review; • The submission of an incident report; • The submission of an independent environmental audit (IEA); and • Any modification to the conditions of PA09_0176.	Section 6.4
15	Ravensworth will maintain a centralised location to record communication details of relevant external stakeholder and procedures for stakeholder contact including a Complaints Procedure. A register of all community complaints, updated monthly, will be made publicly available on the Ravensworth website	Section 6.6

3. Historical Context

3.1 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 HMP 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 *European Heritage Assessment: Ravensworth Operations Project* (Umwelt 2009a).

3.2 European Contact

The Central Lowlands of the Hunter Valley is the traditional country of the Wonnarua people, one of the 600 different clan groups or 'nations' present in Australia at the time of European contact. Although early records on traditional tribal boundaries are limited, it is understood that the country of the Wonnarua was centered on the Upper Hunter Valley. Records also identify that the Wonnarua were closely affiliated with the Kamilaroi, whose country extended from the west as far south as Jerry's Plains according to some early authors (Threlkheld 1892, Matthew 1903). Other early authors, such as Howitt (1904:104), further describe the Geawegal (part of the Kamilaroi 'nation') as occupying the eastern side of the Hunter Valley, from Ravensworth to Murrurundi (Brayshaw 1986:51). The Wonnarua also had close connections with other surrounding groups, such as the Awabakal centered on Lake Macquarie and the Worimi north of the Hunter River. There was apparently considerable contact between all of these groups, with social links connecting coast and inland (Brayshaw 1986:51).

With the arrival of European settlers in the nineteenth century, traditional patterns of Aboriginal life were quickly and dramatically altered. Disease spread through the Aboriginal population of the Hunter Valley, and displacement from traditional lands soon followed, with European settlers taking up land first along the major river systems then spreading inland. Conflict often resulted, with warriors fighting to retain access to land and country, and Aboriginal use of resources – including hunting of settler stock – seen as theft, and quickly punished. Although not all interactions were hostile, some authors (refer to Milliss 1992) argue that there was a general hostility between the European settlers and Aboriginal people, evidenced by violent skirmishes from the earliest European settlement.

There are a number of specific references to the Ravensworth area in ethno historic sources, many of which relate to violent encounters between the European settlers and the Wonnarua. Among these accounts are a series of escalating violent encounters associated with the Bowman estate, which led to the death of up to 19 Aboriginal people, colloquially known as the 'Ravensworth massacre'. These accounts have been used to register (on the Aboriginal Heritage Information Management System (AHIMS) Aboriginal Sites Register) a massacre site at the Ravensworth Village. However, further research has indicated that the site of this conflict is highly unlikely to be in the Ravensworth area (for further discussion, refer to Umwelt 2009b & c). Further studies conducted as part of neighbouring Ravensworth mines Environmental Assessments(Glencore Mt Owen Continued Operations Project Environmental Assessment) it has become much clearer that Ravensworth was a focus of Aboriginal

and early European interaction and the formal record of this appears in Colonial dispatches that are themselves documents of considerable historic importance.

Within one generation, the traditional use of the land by the Wonnarua and their social structure and interactions, had been dramatically affected. The material culture of Aboriginal people also changed dramatically following contact, with the rapid influx of new technologies and materials. For example, Threlkeld (in Gunson 1974:54, 67) provides two examples of new technologies being utilised by Aboriginal people within the Lake Macquarie area, noting that bottle glass was replacing stone ('fragments of quartz') in Aboriginal weapons and that iron and glass were being used for fish hooks. A number of archaeological sites have been recorded throughout the Hunter Valley evidencing Aboriginal use of introduced materials.

3.3 Early Settlement and Exploration

The area of the Hunter Valley was one of the first large stretches of suitable pastoral land found following the arrival of European settlers in NSW. Lieutenant John Shortland discovered the Hunter River in 1797. Four years later the Hunter Valley was reserved, in the interests of the public, chiefly for its coal and timber resources. This action effectively closed the district to rural settlement until the 1820s when the necessity of opening the valley to settlers was recognised by Governor Macquarie. His despatch of 8 March 1819 acknowledged the growing population and the 'extensive rich and fertile land being found at no great distance' along the principal sources of the Hunter River (Campbell, 1926:73).

In 1821, Henry Dangar was commissioned to undertake a survey of the Hunter Valley to assess its suitability for settlement and farming, with the survey of the lower Hunter Valley complete in 1822 and the Upper Hunter Valley complete in 1826 (Brayshaw 1986:9). In 1823 John Howe, Benjamin Singleton and others discovered an overland route to the Hunter region from Windsor, resulting in stock being over landed into the area from the overcrowded Cumberland Plain (Heritage Office 1996:46).

The region opened to free settlement in 1820 and settlement followed closely behind Dangar's 1821 survey party, with settlers occupying land as far north as Singleton by October 1821. Early reports describing the suitability of the land for pastoral pursuits resulted in the establishment of large scale pastoral holdings. European settlement expanded quickly in the mid nineteenth century, with a total of 372,141 acres being allotted to European settlers in the Hunter Valley between 1822 and 1826. This was increased to over 500,000 acres by 1867 (Brayshaw 1986:10). During the nineteenth century, pastoral grazing was the dominant land use of the Hunter Valley, with more than 25,000 cattle and 80,000 sheep introduced to the area by 1867. The pastoral industry became the earliest established industry within the Project Area. Agriculture was also important to the growing economy of the region, with a variety of crops cultivated including maize, potatoes, wheat, barley and tobacco.

Wool production, dairy farming and wheat growing were the predominant industries. During the nineteenth century the area of Ravensworth Estate was central to local and regional wool production. Dairying was one of the initial impetuses for the division of large estates in the Upper Hunter. By the early twentieth century the Upper Hunter was mostly occupied by dairy farms of up to 500 acres in size (Heritage Office & DUAP, 1996:49). Horse breeding also became a thriving industry as early as 1822. Wheat production went into decline in the mid-1800s owing to the disease *rust* which struck

severely in 1857 (Turner, 1995). The late nineteenth century saw the decline of agriculture along river flats as they were converted to dairying on pastures improved by pump irrigation (Dean-Jones and Mitchell 1993:2). The pastoral and dairy industries continued to dominate into the twentieth century.

Dairying increased after the First World War as soldiers were given small holdings and government assistance to establish small agricultural businesses, such as dairy farms (Heritage Office & DUAP 1996:49). The effect of soldier settlement increased after the Second World War in Singleton when the 'country was cut up into wheat-sheep farms' (Heritage Office & DUAP 1996:49). The importance of dairying as a land use is reflected in the history of the Project Area. Dairy farming became an important land use after sheep/wool production began to wane in the late nineteenth century due to parasitic infections in sheep.

Many of the land holders in the region also owned tracts of land inland and the trend in the late 1800s was for these landholders to replace sheep with cattle from their inland runs. There was a shift from wool production in the nineteenth century to mixed farming, dairying and to a lesser degree grazing became more important in the twentieth century. Many of the larger holdings were subdivided in the early 1900s, some of which were part of the Soldier Settlement Scheme following the First World War. In the latter part of the twentieth century, many of the smaller holders were reconsolidated into large scale coal mining leases.

Construction of the Liddell *coal*-powered *thermal power station* began in 1970 and the Hebden mine was opened the same year. Lake Liddell is a man-made lake that supplies cooling water for *Liddell Power Station*. A number of landowners had their properties purchased by the Electricity Commission around 1972, including the study area, and while the mine and the Electricity Commission created a number of jobs for the community, the expansion of land reserved for mining resulted in the movement of many local businesses out of the district.

The buildings located in the Hillcrest offset area were already dilapidated and unoccupied at the time of the heritage study in 1996. At that time the land was owned by the Electricity Commission. AZSA Pastoral Holdings purchased Hillcrest from Liddell Tenements on 28/10/2011. The property continued to be used for cattle grazing until 2014 when all cattle were removed as a result of Biodiversity Offset Area requirements. The late 19th and early 20th century subdivision of large land grants and development in the area is represented by a number of small houses in the Lake Liddell area. Individually they are not all of heritage significance, however, considered as a group, they provide evidence of the later subdivision development and use of the area (Hillcrest SHI listing).

3.4 Land Ownership

The earliest land taken up in the region was that of Dr. James Bowman. Other early settlers included Alexander Bowman (son of George Bowman and unrelated to James Bowman) and Captain William Russell (refer to **Figures 3.1** and **3.2**). Early landholders within the Hunter Valley are discussed below.

3.4.1 Dr James Bowman and the Ravensworth Estate

Land was first taken up in the region of the Project Area by Dr. James Bowman (surgeon and pastoralist) at Ravensworth in October 1824, and for one year, the Bowman estate was the northernmost settlement of the Hunter Valley.

James Bowman entered the Royal Navy as an assistant surgeon in 1806, being promoted to surgeon in 1807. He arrived in NSW in 1816 on the *Mary Anne* as a surgeon appointed to the convicts. In 1823 he had married Mary, the second daughter of John and Elizabeth Macarthur, whose dowry included 2000 merino sheep and more than 200 head of cattle. His request for land commensurate with his fortune was granted in 1824 and with additional purchases his estate, Ravensworth, located between Singleton and Muswellbrook, and exceeded 12,000 acres (4856 hectares). **Figure 3.3** shows Robert Dixon's 1837 Map of the Colony of NSW indicating the location of Ravensworth. Following his marriage to Mary Macarthur, Bowman lived at the general hospital in Sydney and the Ravensworth Estate was established, stocked and developed by overseers and convict labour. In 1824 he was appointed a member of the Australian Agricultural Company and became an inspector of colonial hospitals in 1828.

The Bowman estate was described in 1824 as '12,160 acres in three portions' (Hunter 1997:1) encompassing Bowmans Creek and Yorks Creek. However, this acreage may reflect a later size rather than that of 1824. The property was later expanded to include frontage to the Hunter River, and by 1828, over 40 convicts and overseers worked on the Ravensworth property as shepherds, labourers, carpenters, sawyers, blacksmiths and stone masons (Hunter 1997:17). The estate was further expanded during Captain William Russell's ownership (see below) following the Robertson Land Acts of 1861 that allowed any person to select from 40 to 320 acres of land.

With the economic depression of the 1840s and the costs of building Lyndhurst (his John Verge designed mansion house in Glebe, Sydney) Bowman fell into financial trouble, however James and William Macarthur took over his liabilities and the management of his estate. He died in 1846 at Ravensworth and the Macarthurs sold the property in 1847 to Captain William Russell.

Ravensworth Homestead (built by 1842) was the second house built on the site, with construction beginning in the late 1830s. Although some alterations have been made, namely, timber veranda posts replaced by those of cast iron and roof ventilators and the addition of several rooms, Ravensworth remains relatively intact and has escaped any significant alterations to Mary and James Bowman's mid nineteenth century design' (EJE Architecture 1997:3). Xstrata Coal, EJE Architecture and Australian Heritage Restorations have recently undertaken the conservation and restoration of the Ravensworth Homestead.

3.4.2 Captain William Russell

Ravensworth remained in the possession of Captain William Russell and his family until 1882. Russell arrived in NSW in approximately 1837, following his retirement from his regiment, and became a pastoralist and agriculturalist. His Hunter Valley properties included Ravensworth and Glenridding near Singleton, Waverley and Chestnut Park, in addition to purchasing several blocks of land from the Crown. He is reported to have held over 30,000 acres of freehold land in the Hunter Valley (Hunter 1997:9-10). William Russell died in England in 1866. In 1882 a subdivided Ravensworth and other properties from the Russell estate were advertised for sale (Hunter 1997:11). The sale included all of the stock including cattle, sheep and horses.

3.4.3 Duncan Forbes Mackay

In 1882 Duncan Forbes Mackay purchased part of the original Ravensworth estate, including the homestead. During the latter part of the nineteenth century the Mackay family became one of the

principal grazing and cattle breeding families in NSW. Mackay improved the Ravensworth estate, including clearing to increase the land available for grazing, to make it a first class sheep raising property. In 1883 approximately 40 men are reported to have been employed at Ravensworth (Hunter 1997:13).

3.4.4 Land Company of Australasia

The Land Company of Australasia was established to develop innovative schemes for irrigation and to promote the government's policies of closed settlement in order to stop 'vast areas of NSW' being 'tied up in the hands of pastoralists who were making little use of it' (Noble 1997:13). The Company bought the Ravensworth Estate from Mackay at 2 pounds an acre and introduced the Lincoln breed of sheep to the area. However, the Lincolns suffered from parasitic infections; a problem which influenced Upper Hunter graziers in general to turn from sheep to cattle raising and dairy farming (Hunter 1997:13-14). The Land Company failed in 1892, which resulted in the Ravensworth title reverting to Duncan Forbes Mackay's estate. Mackay's estate was run by his nephew William Mackay who during 1894 to 1895 attempted to sell the property advertised as being of 62, 651 acres (Hunter 1997:14).

3.4.5 F.J.L. Measures

F.J.L. Measures was an American entrepreneur who purchased several large estates on the central coast and in the Hunter Valley region and subdivided them for resale. Ravensworth was one of these estates. In approximately 1910, Measures advertised 30,000 acres of Ravensworth divided into 100 blocks for dairy farms, vineyards, orchards and grass blocks. The homestead lot was 1100 acres. Measures improved the lots by erecting houses, dairies and farm buildings on a number of the blocks in order to encourage buyers to the new farms. Measures appeared to have failed financially and the venture was kept going by the solicitor F.H. King. Many of the subdivided lots were eventually sold to graziers and farmers.

3.4.6 Soldier Settlement

Following the First World War the government initiated programs to enable returned soldiers to settle on their own farms or secure their own homes (under the War Service Homes Act of 1918 and soldier settlement schemes). While most land made available to returning soldiers was former Crown land, some freehold land was purchased by the Crown and then made available to returned soldiers. Returned serviceman from First World War secured portions in the Ravensworth area surrendered to the Crown under the Act. Such blocks were known as Settlement Purchase Areas (SPA).

Following the First World War, Mr A.C. Marshall and his family lived at Ravensworth. After the Second World War, grazing shifted to small mixed and dairy farms. In the 1940s, Marshall converted the Settlement Purchase blocks into a Settlement Lease which continued until the late 1970s. In the 1970s Ravensworth was subdivided into two portions. Mr Marshall purchased the portion retaining the Ravensworth homestead outright and received title to Ravensworth from the Crown (Noble 1997:16). The remaining 230 hectares was sold to the Electricity Commission of NSW.

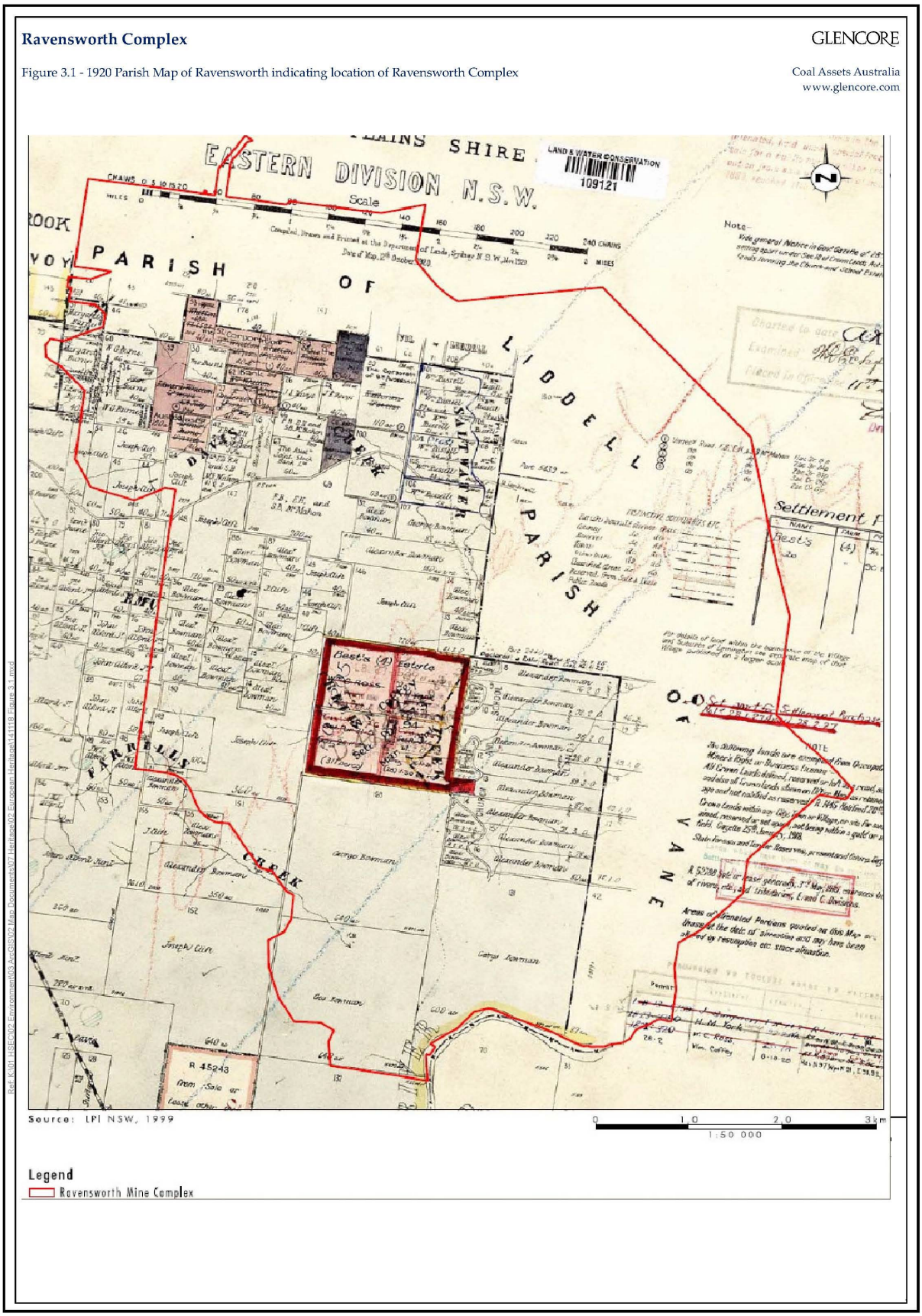

Figure 3.1 1920 Parish Map of Ravensworth indicating location of Ravensworth

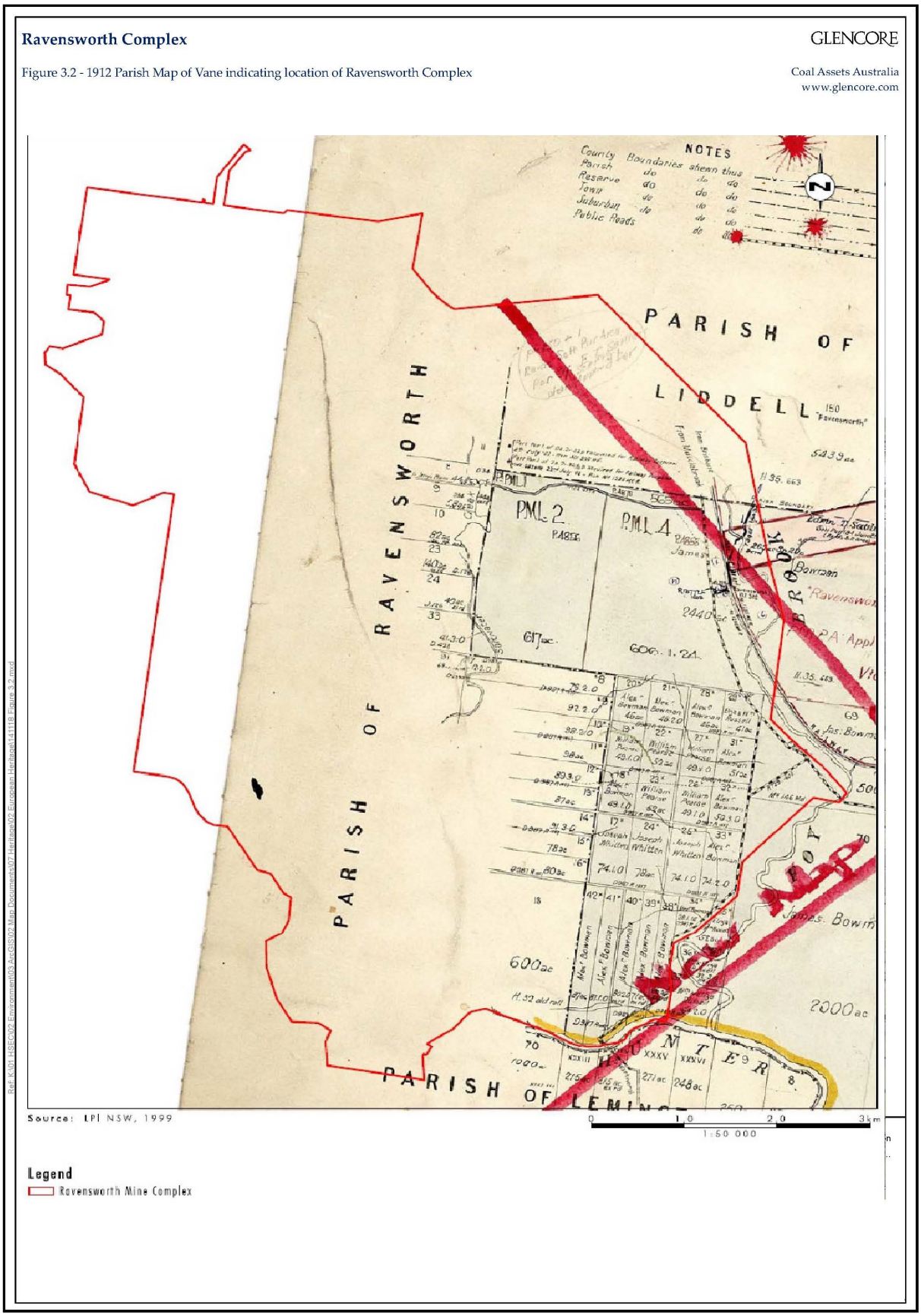

Figure 3.2 1912 Parish Map of Vane indicating location of Ravensworth

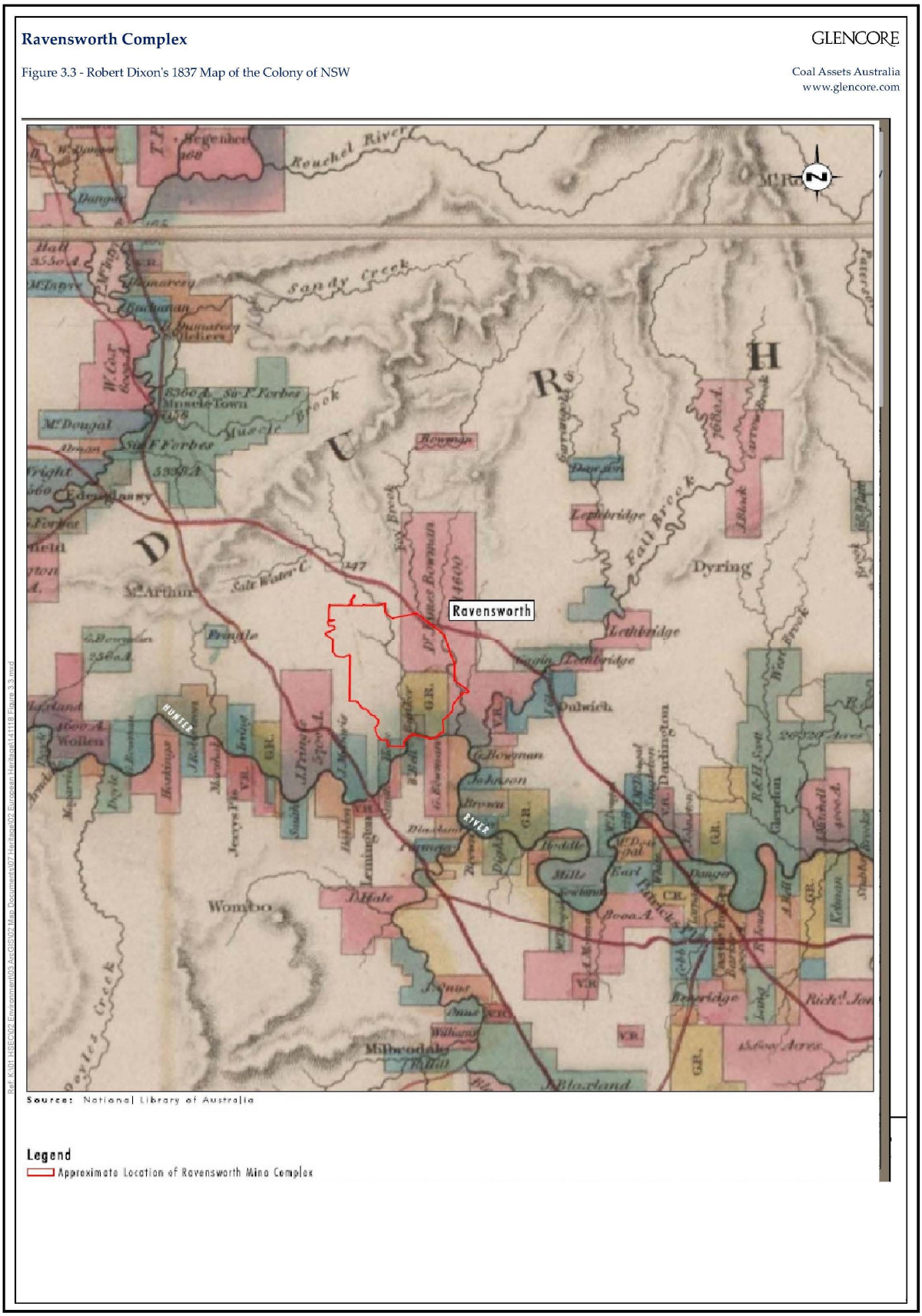

Figure 3.3 Robert Dixon's 1837 Map of Colony of NSW

3.4.7 Alexander Bowman and Oaklands

The Project Area is located predominantly within land originally owned by Alexander Bowman (refer to **Figures 3.1** and **2.2**). Alexander Bowman was the seventh son of George and Eliza Bowman and unrelated to Dr James Bowman of Ravensworth. Part of the Bowman's property was originally promised to Ebeneza Bunker by Governor Macquarie however, the land was conveyed to George Bowman in 1832 for 150 pounds (Bowman 1999:101).

George Bowman arrived to Australia in 1798 with his parents on the *Barwell*. His father John settled on the Hawkesbury River. In 1824 George Bowman requested a grant of land on which to run 1200 sheep, 60 head of cattle and 12 horses. Bowman was granted 1130 acres which was taken up in the Parish of Ravensworth on the northern bank of the Hunter River. This property became known as Arrowfield. In 1825, Bowman sought permission to purchase a further 2000 acres of land adjoining his present holding. His request was approved and 2560 acres was taken up on the southern bank of the Hunter. This property became known as Archerfield (Umwelt 2005a). The Bowman family soon owned several properties in the Hunter Valley, including Oaklands on the north side of the Hunter River, to the west of Archerfield (Bowman 1999:101).

George Bowman's son Alexander also acquired large tracts of land in the Ravensworth area of the Hunter Valley, much of which adjoined his father's land. Alexander Bowman settled at Oaklands within the southern boundary of the Project Area.

Alexander Bowman lived at Oaklands until he sold the property in 1881 and moved to Glebe in Sydney. While at Oaklands Alexander Bowman bred a number of race horses including Bulginar, who won the Tattersalls Cup at Randwick in 1868

In the late 2000's Ravensworth purchased the property from Neville Holz, the history prior to Neville Holz and the previous owners has been unrecoverable. Studies of the area for the Ravensworth Operations Project have not revealed any further items for management consideration.

3.5 Communication, Roads and Railways

3.5.1 Travelling Stock Routes

Travelling stock routes and reserves in NSW (also known as the Long Paddock in Australian literature) originated from the need to move stock to pastures and markets. To assist with the stock movements the government established a network of watering points and wide corridors for stock routes. Stock routes evolved from the 1830s onwards, the early routes generally following rivers or roads. By the 1860s legislation was introduced to protect the rights of adjacent run-holders and drovers. The *Occupation Act 1861* and the *Pastures and Stock Protection Act 1880* attempted to regulate the use and administration of stock routes. By this time railway lines were also used as stock routes in some areas. During the 1880s and 1890s improvements were made to administration of the routes, culminating in the *Pastures Protection Act 1902* which established Pastures Protection Districts and Boards (AHMS 2008:39-40).

The stock routes are not used as often for droving as they were in the past as truck transport provides an alternative. However the use and growth of the routes peaked during the two world wars, and continued in the post-war period particularly during the droughts of the late 1950s. Since then there

has been a decline in use of the routes except during drought periods when they are used mainly for grazing stock rather than transporting them. The *Rural Lands Protection Acts* of 1989 and 1998 transferred administration of the routes to the Local Land Services. The Boards now manage almost 600,000 hectares of traveling stock routes on crown land throughout NSW (AHMS 2008:39-40). There has been a significant increase in the numbers of stock using traveling stock reserves and public roads since the onset of the drought in the early twenty first century (Hale 2008). Following the renewed use of the routes, concerns have grown about soil erosion and weed control, and protection of wildlife and remnant native vegetation (AHMS 2008:40).

3.5.2 Main Northern Railway Line/Great Northern Railway

The Great Northern Railway or as it is now referred to, the Main Northern Railway, was built in part following the Great North Road in the 1860s to the 1870s. The Main Northern Railway's first section was built from Newcastle to Victoria Street, Maitland in 1857. It then extended to Singleton (1863), Muswellbrook (1869), Murrurundi in (1872), Werris Creek and west Tamworth (1878), Armidale (1883) and Wallangarra, Queensland in 1888. A railway station was opened at Ravensworth village on 1 June 1869 and closed on 11 January 1975 (Bozier nd). The railway line in part diverges through the Ravensworth Estate and is within the eastern boundary of the Project Area.

3.5.3 Great Northern Road

In the Upper Hunter area, roads were the most important means of transport until 1869 when the Great Northern Railway reached Muswellbrook (Turner 1995:32). The first overland route to the Hunter River was discovered, after several unsuccessful attempts, by John Howe, Benjamin Singleton and others, who travelled from Windsor to near Singleton in late 1819. The route they discovered was officially opened in 1823. It became known as the Bulga Road or The Parson's Road, but is now known as Putty Road. When first opened, travellers required a permit. The discovery of this route meant that stock could now be taken overland from the Cumberland Plains north to the Upper Hunter Region.

The origins of the New England Highway lie not in the work of early surveyors like Dangar but in that of explorer and botanist Allan Cunningham, who traversed the region in the period 1827 to 1829. Between January and August 1827, Cunningham travelled from the Hunter Valley northwards, crossing the Peel and Dumaresq Rivers, discovering the Darling Downs, before returning to the Hunter Valley and Bathurst. While exploring the Darling Downs, he discovered Spicer's Gap, through which there was access from Moreton Bay to the fine grazing offered by the Downs. Cunningham later found a second gap, Cunningham's Gap, in 1828 to 1829 (Perry 1966).

The roads leading north through the Hunter Valley were developed in the first part of the nineteenth century. Agitation for a shorter route north than the Putty Road had led Governor Brisbane to issue instructions for the surveying of a new route beginning at Castle Hill, which became known as the Great North Road. On the northern side of the Hawkesbury River, the road proceeded along the crest of the range to Wollombi and then to Singleton. Construction of the road commenced in 1826 and reached as far as Hawkesbury by 1829. When it reached Wollombi, the road branched, with one road leading to Singleton and the other to Maitland (O'Connor 1985). A second route to the Hawkesbury was developed along Peat's Ferry Road, now the Pacific Highway. By 1850 the main road to the north had extended from Muswellbrook to Murrurundi and onto Tamworth and Armidale. The road north

of Murrurundi follows the track over the Liverpool Ranges discovered by William Nowland in 1827. The road forms the basis of the New England Highway of today.

3.6 Chain of Ponds Hotel

The Chain of Ponds Hotel (or Inn) is located outside and to the north-east of the Project Area (refer to **Figure 1.3**). The inn and its outbuildings are listed on the State Heritage Register and have associations with the Project Area as a potential location for the quarrying of the stone used in the inn's construction. The history of the inn was considered in detail in the 2009 European Heritage Assessment and is summarised here.

The building was built in the 1840s by Henry Nowland (or Nowlan). It has also been known as The Halfway House, standing halfway between Muswellbrook and Singleton on what was then the New England Highway. The hotel served as an inn for the coach and horse borne traffic in the mid nineteenth century between Morpeth and Tamworth.

In 1842 the Government decided to create a village in the vicinity of the Western Salt Ponds, halfway between Singleton and Muswellbrook, on the main route north. The proposed village did not ever eventuate as Henry Nowland eventually purchased most of the allotments. He initially purchased Lot 1, consisting of 4 acres, 3 roods and 21 perches at the junction of the Chain of Ponds with Saltwater Creek, Liddell. This was an ideal location for the establishment of an inn and a stabling area for coaches and horses. In 1842 he built a sandstone building and lockup. Nowland informed the Muswellbrook Bench that the stone lockup had been built on the site which he offered to rent to the government as a half-way house for the confinement of prisoners in transit.

The inn was constructed by convict stonemasons using blocks of stone 2 foot thick. In 1897 it was reported as having been constructed with:

…*masonry being as solid as the pyramids (Mackenzie 1897).*

A brick stables to the rear of the inn, and also a blacksmiths, are likely to have been constructed in the early 1840s to cater for the Nowland coaches. The stables may also have been used as a mounted police barracks (RNE listing 1400).

James Watson rented the sandstone constructed inn building from Nowland and was licensed to keep the inn, initially called the Lady Gipps Inn (also referred to as Watson's Inn). The inn opened on the 23 December 1844.

Henry Nowland died on the 10 February 1863 (aged 66) leaving everything to his widow, Mrs Harriet Nowland. Harriet complained that no rent had been paid for the lock-up from 1 April 1862 to 30 June 1863. The coaching business fell apart and the coaches were purchased by Cobb and Co. This decline in the coach business occurred through the period from Henry's death to the introduction of rail in 1867.

Two possible sources of stone for the construction of the Chain of Ponds Hotel have been identified:

- Grass Tree Hill near Muswellbrook; and
- A creek named Davis's Creek (Dawson et al. 1990:11).

Part of Davis Creek runs through the Project Area and has outcrops of sandstone. Subsequent survey of the area has identified a former sandstone quarry within the Project Area (site/item HH14 refer to **Section 4.1**) on a tributary of Davis Creek which may have been the source for the sandstone used to construct the Chain of Ponds Hotel. The bricks used to construct the stables at the rear of the inn are likely to have been made on the site of the inn (Dawson *et al* 1990: 11).

Yancoal currently own the Chain of Ponds site, the purchase date of the site is unknown.

3.7 Mining

The development of coal resources comprises an important part of the region's history of coal mining within the Hunter Valley which began on a limited scale in the early 1900s, prior to a rapid expansion in the 1950s with the establishment of large open-cut mines (Dean-Jones and Mitchell 1993:2).

Coal was known to exist in Singleton and its surrounding areas since early exploration. Coal was first mined in the Upper Hunter in the Rixs Creek area near Singleton in the 1860s (Rappoport 2006:24). On 23 September 1886, the 'Singleton News' in the Maitland Mercury reported that

Since Messrs Nowland opened up their mine, sinking for coal has been actively prosecuted on the Ravensworth estate and we learn that the perseverance of the promoters has been successful to such a degree that they intent to float the undertaking shortly into a company with equal capital of £50,000.

According to the Heritage Office & DUAP (1996:4) 'coal was not commercially exploited until the 1890s in the Upper Hunter'. Coal mining and electricity generation have become major industries in the Singleton area since the 1950s with the first wave of collieries built to meet export demand at Liddell, Foybrook and Liddell State. Since the mid-twentieth century, coal mining operations 'expanded from Cessnock/Maitland area to the triangle bounded by Singleton, Muswellbrook and Denman, using highly mechanised, open cut surface mining techniques in which all overburden is stripped from the surface' (Rappoport 2006:24).

Coal mining commenced at Ravensworth No.2 Open Cut Mine in 1972 to supply coal under contract to Pacific Power (previously known as the Electricity Commission of NSW). Following completion of this contract in 1987, a second contract was awarded to mine the Ravensworth South area at a rate of 3.9 million tonnes per annum until the resource was exhausted in the year 2001.

A further coal contract was secured with Pacific Power in 1990 to provide 2 million tonnes per annum for 21 years from the Narama area. Mining at Narama began in 1991. This lease lies immediately to the south of Ravensworth South and this operation forms part of the Ravensworth Mine .

Cumnock No. 1 Colliery is the former Liddell State Coal Mine established in the 1950's by the State Mines Control Authority. In 1973 control of the mine was given to the Electricity Commission of NSW. Cumnock No. 1 Colliery, now a wholly owned subsidiary of Xstrata, acquired the mine in 1991.

Ravensworth West Mine began operating in the late 1990's prior to the exhaustion of Ravensworth South. Ravensworth Underground Mine (RUM), formerly known as Newpac No. 1 Colliery and Nardell Colliery, received development approval in 1996. RUM also forms part of the Ravensworth Mine .

3.8 Ravensworth School

Ravensworth School opened as a Half-time School in October 1876 with Chilcott Plains School as its Half-time Partner School. In September 1880 the Half-time School closed and the Public School opened.

When the Ravensworth Half-time School opened in 1876 there were 14 children attending aged between four and 11 from five different families. The teacher, Vesey Hine, had only one month of training under the tutelage of the Headmaster at Maitland East Public School (Kelly 1976: 1). Vesey Hine taught at both Ravensworth and Chilcott Plains School until Ravensworth became a Public School in 1880.

The original Ravensworth school building was of 'slab construction with a shingled roof' and timber floor located close to the then Ravensworth Station (Kelly 1976:3). From 1878 the residents of Ravensworth were requesting the school be converted into a Full-time Public School. The majority of pupils were children of railway workers and employees of Ravensworth Estate,

By December 1880 enrolment at the school had risen to 40 pupils with an average of 29 attending compared to 7 in 1879. However enrolment dropped to 18 in 1886 with only an average attendance of 10. The reputation of the teachers was generally given as the reason for the fluctuating enrolment figures. Enrolment rose again in the late 1880s but then declined in the early 1890s as the Railway Department removed a number of married men with children from working on the rail line and replaced them with single men. In 1893 the attendance had fallen again to 10 children; the teacher reporting that only 'nine children of school age lived within three miles of the school'. The early 1890s also saw a reduction in the number of employees on the Ravensworth Estate and the rail line as a result of the low prices for primary products at the time (Kelly 1976:12-15). However the end of the 1890s saw enrolment average between 20 and 30 children.

In 1913 renovations were carried out to modernise the school building including replacing the wooden shingles with galvanised iron. In the 1920s renovations were also undertaken to the school residence, however there were no further changes to the school until the replacement school building was constructed in the 1970s. Cesspits (pit toilets) had been used until the new building was constructed .The new Ravensworth Public School was opened 26 September 1971 as a one teacher school for 24 pupils, with room for expansion to up to 40 pupils, at a cost of $44,000.

Ravensworth Public School closed in 1986. Both the 1880s constructed school and the 1970s new school buildings are located on the north side of Hebden Road, at the intersection with the New England Highway

3.9 St Clements Church

Anglican worship began at Falbrook in August 1835 when Rev. G.K. Rusden commenced monthly services at “Dulwich”.26 After 1841, services were held in a slab built, one-roomed schoolhouse which was built by the Anglican church, but in September of that year the first step was taken towards the construction of a church when Dr. James Bowman and his wife, Mary, donated 2 acres of land adjacent to the main road for a church and burial ground. The foundation stone for the church was laid in the following year by Bishop Broughton, who visited the site again in 1843 to view the building progress.27 On 9 July.

The Church of St. Clement was dedicated and officially opened for service in 1851, although marriages had been celebrated within the unfinished walls from the mid-1840s.The sandstone was from a quarry nearby, across on the other side of the ford and was carried to the site by Mr. Tullock's bullock team while the building of the church was supervised by Mr. H. Glennie of Dulwich Homestead.

In March 1855 Bishop William Tyrrell, who had succeeded Broughton in 1847, made "a rapid tour for Confirmations up the Hunter Valley as far as Murrurundi, consecrating Falbrook Church on his way up". It was reported that St. Clement's was "tolerably well filled" for the occasion. However, over the ensuing years interest in the scheduled monthly services waned, as cancellations were not uncommon due to the unavailability of the minister or, at time, flooding. The resulting uncertainty led to poor attendances, as people grew "tired of riding seven or eight miles only to be disappointed".

Lack of funds had precluded construction of the proposed tower. According to a local commentator in 1869, this tended "to give to the passer-by the idea of ruins". A decision was subsequently made to dispense with the idea of a tower and in 1908 a sandstone porch was constructed in its place. Funds also allowed for the replacement of the old organ, as well as extensive plastering of the deteriorating exterior stonework. Subsequent repairs and alterations were carried out in 1918 when the vestry was replaced with cypress pine, which was also used in the later construction of a floor under the pews. The altar platform was cemented at that time as well.

By 1964 St. Clements was facing closure due to its deteriorating condition. Determined to retain their church, the parishioners began raising funds for its repair. With the assistance of donations from other small local churches and sympathisers all over New South Wales and also from Queensland, sufficient money was raised to undertake the necessary work. Over a period of two years and using volunteer labour, the church was returned to its former glory and was re-hallowed in November 1966. The oldest Anglican church in the Parish of Singleton, St. Clement's holds an important place in the history of the area. Many local families have donated funds towards improvements, fittings, furniture and items such as linen, candlesticks, chalice, alms plate and candlesticks.

The relative isolation of St. Clement's which contributes to its charm and visual impact has, unfortunately, been a contributing factor in two instances of vandalism, the second occurring in 2008 when the church was seriously damaged by fire.

3.10 Summary

Historical research shows that from the 1820s to the 1970s, the Project Area has been predominantly used for grazing sheep and cattle. After this time, major coal mining operations commenced at Ravensworth. The development of coal resources also comprises an important part of the area's history

Pastoral grazing has been the dominant historical use of the Project Area, and although no longer the dominant land use, the areas pastoral history is evidenced by the history of clearance of native vegetation and construction of pastoral infrastructure such as dams and fences along with homesteads and other rural structures. There was a shift from wool production in the nineteenth century as mixed farming, dairying and to a lesser degree grazing became more important in the twentieth century. Dairying was one of the initial impetuses for the division of large estates in the Upper Hunter. By the 1890s dairying became an important industry in the Upper Hunter.

3.11 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, now the Department of Climate Change, Energy, the Environment and Water (DCCEEW). The DCCEEW and 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. In accordance with the Heritage NSW and DCCEEW framework of historic themes, the themes in **Table 3.1** are relevant to the Project Area and locality.

Table 3.1 Historical Themes Relevant to the Project Area and Locality

National	National Sub Themes	State Themes	Local Themes/Application
1. Developing local, regional and national economies	Developing Primary Production	Pastoralism Mining	Pastoralism Development of coal mining
2. Building settlements, towns and cities	Making settlements to serve rural Australia. Remembering significant phases in the development of settlements, towns and cities	Land Tenure Early Settlement	Land Tenure and Early Settlement including the history of selection
3. Working	Working on the land Organising workers and workplaces	Pastoralism Railways	Other industries – timber clearing and rabbiting Development of coal mining Gold Mining Railways
4. Educating	Establishing schools	Religion Education	Religion and Education
5. Developing Australia's Cultural Life	Worshipping	Religion Education Death	Religion and Education Death

4. Evaluation of Heritage Sites

4.1 Identified Historical Heritage Sites

The *European Heritage Assessment: Ravensworth Operations Project* (Umwelt 2009a) assessed 28 sites/items located within the Project Area (refer to **Figure 4.1**). A summary of these sites and their heritage significance, potential impacts and the need for further management as assessed in the 2009 *European Heritage Assessment* is identified in **Table 4.1**. A summary of the sites subject to a statutory heritage listing both within and in the vicinity of the Project Area as assessed in the 2009 *European Heritage Assessment* is briefly described in **Table 4.2**. Management measures to be implemented for the items detailed in **Table 4.1** and **4.2** are detailed in **Section 5.1**.

A number of the sites listed in **Table 4.1** (sites HH2, HH3, HH6, HH7, HH9, HH10, HH13, HH19, HH23, HH24, HH25, HH26, HH27 and HH28) as being of no significance were initially classified as having nil – local significance in the *European Heritage Assessment: Ravensworth Operations Project* (Umwelt 2009a).

The significance of these sites has been clarified in this HHMP as being of no significance in line with Heritage 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 not recognised. **Appendix A** 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.

The *Hillcrest Offset Area, Ravensworth – Heritage Assessment* (Eco Logical Australia) assessed four items located within the Hillcrest Offset Area for their heritage significance. Two sites were found to have local heritage significance and the other two sites had no significance.

A summary of these sites and their heritage significance, potential impacts and the need for further management as assessed in the 2018 *Hillcrest Offset Area – Heritage Assessment* is identified in **Table 4.2.1** and are detailed in **Section 5.1**. **Appendix E** contains the full assessment report for Hillcrest Offset Area. **Figure 4.1** details the location of the two items of heritage significance.

Table 4.1 Summary of Condition of Known and Potential Heritage Sites/Items in the Project Area

Site/item	Site/item description	Significance	Potential Impact	Further Management Required
HH1	Old Lemington Road bridge over Emu Creek	Local	Removal as part of open cut extension	Removed as part of project
HH2	Cut tree stump with board holes	No	Unlikely	No
HH3	Former timber getting site	No	Unlikely	No
HH4	Dam enclosed by timber fence	Local	Potential impact through blasting/vibration	Yes
HH5	Fenced enclosure adjacent to dam	Local	Potential impact through blasting/vibration	Yes
HH6	Remnant timber mortised fence line	No	Unlikely	No
HH7	Cut tree stump with board holes	No	Unlikely	No
HH8	Metal tanks	No	Unlikely	No
HH9	Concrete bridge over Farrells Creek	No	Unlikely	No
HH10	Former timber bridge foundations over Farrells Creek tributary	No	Unlikely	No
HH11 & HH12	Oaklands Homestead	Local	Potential impact through blasting/vibration	Yes
HH13	Concrete foundations	No	Removal as part of project	Removed as part of project
HH14	Former quarry on Davis Creek tributary	Local	Directly impacted during the proposed mine works	Removed as part of project
HH15	TSR entrance gate	Local	Indirect impact	Yes
HH16	Dam associated with TSR	Local	Indirect impact	Yes
HH17	Timber fence associated with TSR	Local	Removal as part of project	Removed as part of project
HH18	Timber enclosure (camp?) associated with TSR	Local	Removal as part of project	Removed as part of project
HH19	Cattle yards alongside Lemington Road	No	Unlikely	No
HH20	Former shearing shed site	No	Removed prior to current proposed work	No
HH21	Former hut site	No	Removed prior to current proposed work	No
HH22	Homestead site	Local	Removal as part of project	No – archival recording previously undertaken (Umwelt 2005b)

Site/item	Site/item description	Significance	Potential Impact	Further Management Required
HH23	Timber stockyards east of main Northern Railway	No	Unlikely	No
HH24	Derelict timber shed and yards on east side of New England Highway	No	Unlikely	No
HH25	Derelict timber shed on east side of New England Highway	No	Unlikely	No
HH26	Derelict timber shed on west side of New England Highway	No	Unlikely	No
HH27	Yards associated with HH26	No	Unlikely	No
HH28	Site of former hayshed	No	Unlikely	No

Source: Umwelt, 2009a

Table 4.2 Summary of Listed Heritage Items within and in Vicinity to the Project Area

Site/item	Site/item description	Significance	Within Project Area	Potential Impact	Further Management Required
Chain of Ponds Hotel	Chain of Ponds Hotel and Outbuildings, Liddell	State	No	Unlikely - Potential indirect blast/vibration impacts	Yes
Ravensworth Homestead	Ravensworth Homestead, Hebden Road, Ravensworth	Regional	No	Unlikely - Potential indirect blast/vibration impacts	Yes
Ravensworth Public School	Ravensworth Public School, New England Highway	Local	Yes	Unlikely - Potential indirect blast/vibration impacts	Yes
St. Clements Anglican Church	St. Clements Anglican Church, Camberwell	Local	No	Unlikely - Potential indirect blast/vibration impacts	Yes
Community Hall	Community Hall, Camberwell	Local	No	Unlikely - Potential indirect blast/vibration impacts	Yes

Source: Umwelt 2009a

Sites/items identified in **Table 4.1** as requiring no further management as part of the project are not considered further as part of this HMP.

Table 4.3 Summary of Assessed Items within the Hillcrest Offset Area

Site/item	Site/item description	Significance	Within Project Area	Potential Impact	Further Management Required
Hillcrest	Single storey weatherboard Federation Bungalow constructed in the early 20th century in poor condition	Local	No	Unlikely – Potential for public access	Yes
Fairview	Fairview is a late 19th/early 20th century weatherboard cottage with hipped iron roof, slab kitchen extension, various animal pens and out-buildings, water tanks fencing and exotic plantings. When listed as a heritage item, the building was still standing, however it has now entirely collapsed.	Local	No	Unlikely – Potential for public access	Yes
Rose Cottage	A small cottage is located approximately 700m to the east of the main house, Hillcrest. It has almost completely collapsed, but appears to have comprised of weatherboard cladding, iron roof, three rooms, a large brick fireplace and verandah facing west. The style of the building, machine made bricks and use of 'rose head' nails indicate a date of late 19th century early 20th century.	No	No	Unlikely	No
Northern Valley Cottage	This simple cottage has a timber frame, corrugated iron clad walls and roof and a verandah on three sides. This simple building was likely to have been constructed in the middle of the 20th century as a temporary residence for farm workers. In poor condition.	No	No	Unlikely	No

4.2 Assessed Potential Physical Impacts to Historical Heritage Sites

Table 4.4 details the potential impacts to the historical heritage sites identified in the *European Heritage Assessment: Ravensworth Operations Project* (Umwelt 2009a). Management measures, where relevant, are detailed in **Section 5.1**. They are identified for the Hillcrest items of significance in the 2018 Heritage Assessment Report (ELA, 2018) contained in **Appendix E.**

Table 4.4 Potential Impacts to Identified Heritage Sites

Site	Impacts
HH1 (Old Lemington Road bridge over Emu Creek)	This site will be directly impacted (removed during the open cut mining).
HH4 (Dam enclosed by timber fence)	No direct impacts to the dam or its associated enclosure have been identified. This site/item may be potentially indirectly impacted through vibration by blasting.
HH5 (Fenced enclosure adjacent to dam)	No direct impacts to the dam or its associated enclosure have been identified. This site/item may be potentially indirectly impacted through vibration by blasting.
HH11 & HH12 (Oaklands)	No direct impacts to Oaklands or its outbuildings have been identified. This site/item may be potentially indirectly impacted through vibration by blasting.
HH15 (TSR entrance gate)	No direct impacts to site HH15 have been identified. As a result of associations and context, the significance of HH15 will be indirectly impacted by the removal of sites HH17 and HH18.
HH16 (Dam associated with TSR)	No direct impacts to site HH16 have been identified. As a result of associations and context, the significance of HH16 will be indirectly impacted by the removal of sites HH17 and HH18.
Chain of Ponds Hotel and Outbuildings, Liddell	No direct impacts to the inn have been identified as it is located outside the Project Area, 3.1 kilometres from the proposed mining area. The potential for indirect impacts through vibration from blasting will be managed.
Ravensworth Homestead, Hebden Road, Ravensworth	No direct impacts to the homestead have been identified as it is located outside the Project Area, approximately 5 kilometres from the mining area. The potential for indirect impacts through vibration blasting will be managed.
Ravensworth Public School, New England Highway	No direct impacts to the homestead have been identified. The potential for indirect impacts through vibration from blasting will be managed.
St. Clements Anglican Church, Camberwell	No direct impacts to the church have been identified as it is located outside the Project Area, approximately 6.2 kilometres from the mining area. The potential for indirect impacts through vibration from blasting will be managed.
Community Hall, Camberwell	No direct impacts to the hall have been identified as it is located outside the Project Area, approximately 6.7 kilometres from the proposed mining area. The potential for indirect impacts from vibration by blasting will be managed.
Hillcrest	No direct impacts to the building have been identified. The potential for indirect impacts through public accessibility will be managed.
Fairview	No direct impacts to the fallen building have been identified. The potential for indirect impacts through public accessibility will be managed.

Source: Umwelt 2009a & Ecological Australia 2018

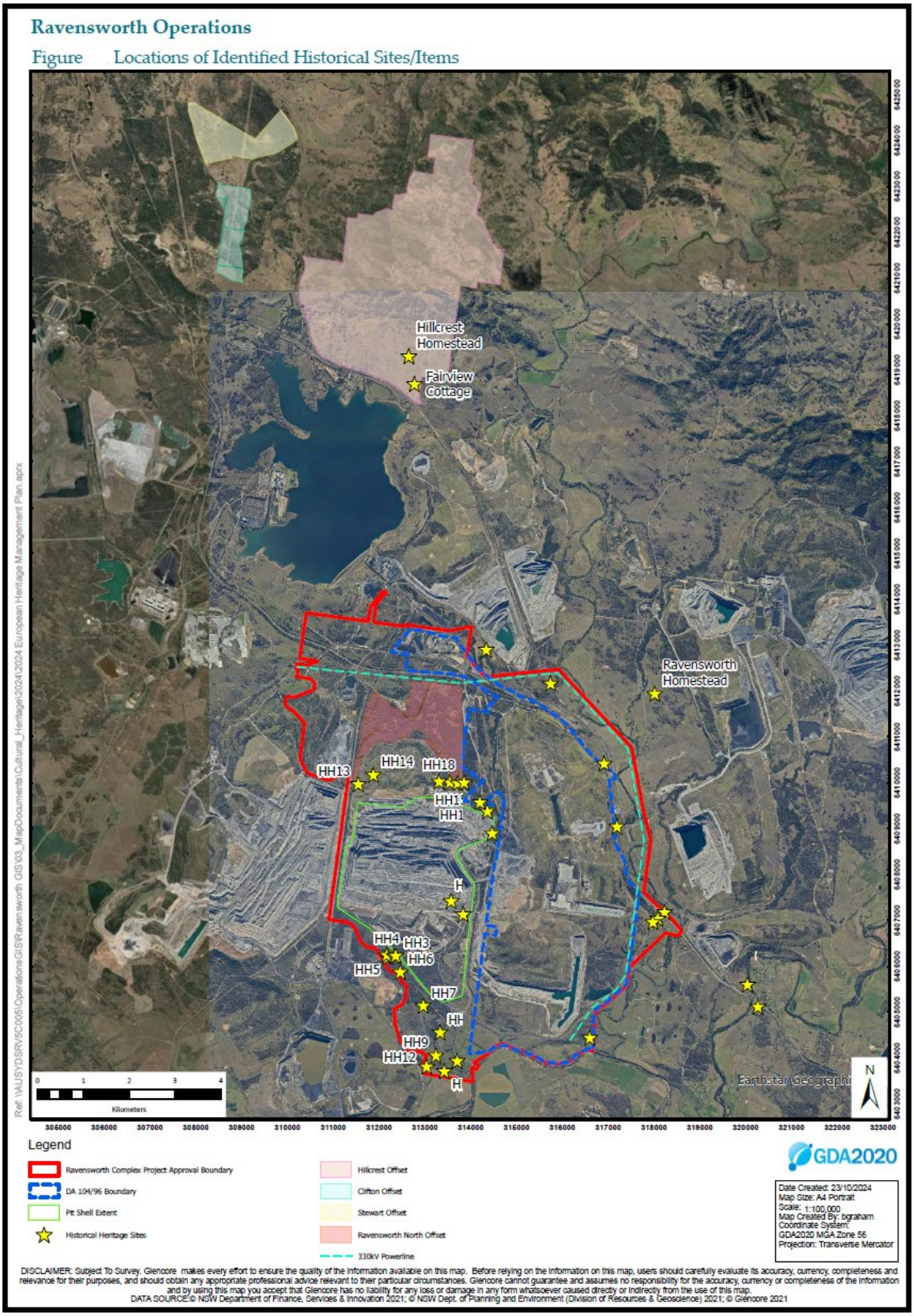

Figure 4.1 Project Area Heritage Sites

4.3 Related Reports

Several reports with relevance to the project and the preparation of this HHMP have previously been prepared. Brief overview of reports are below.

4.3.1 European Heritage Assessment: Ravensworth Operations Project

The *European Heritage Assessment* (Umwelt 2009a) was prepared as part of the *Environmental Assessment (EA) for the Ravensworth Operations Project* (Umwelt 2010) to examine the European heritage features associated with the project with the aim of assessing and evaluating the potential heritage impacts associated with the project. The report identified the heritage sites contained within the Project Area, assessed the significance of any impacts on these sites and outlined the management strategy for the heritage items assessed as being at risk of impact as a result of the Project.

4.3.2 Ravensworth Operations Project – Blast Emissions Impact Assessment

The *Ravensworth Operations Project – Blast Emissions Impact Assessment* (Heggies 2009) assessed the potential vibration and air blast impacts from blasting associated with the Ravensworth Operations Project. The report included assessments of the Chain of Ponds Hotel, Ravensworth Homestead (for vibration only) and Ravensworth Public School. Blasting criteria for historical heritage features is detailed in **Section 5.3**.

4.3.3 Ravensworth Blast Management Plan

The Ravensworth Blast *Management Plan* (BMP) provides a description of the measures to be implemented by Ravensworth to manage blasting operations at Ravensworth Mine and details the blast monitoring requirements at Chain of Ponds Hotel, Ravensworth Homestead, Ravensworth Public School and Camberwell Church. The BMP also provides a mechanism for assessing blast monitoring results against the relevant blast impact assessment criteria (refer to **Section 5.3**).

5. Historical Heritage Management Strategy

The following comprises the historical heritage management strategy for the Project and addresses Condition 42(c) of the Project Approval 09_0176 (refer to **Table 1.2**) and SoCs (refer to **Table 1.3**)

5.1 Management of Historical Heritage Sites

The *European Heritage Assessment: Ravensworth Operations Project* (Umwelt 2009a) established the following management strategy for the identified historical heritage sites in order to manage the potential impacts discussed in **Section 4.2**.

Table 5.1 Management of Identified Heritage Sites

Site	Management of Identified Heritage Sites
HH1 (Old Lemington Road bridge over Emu Creek)	A detailed recording of the bridge to Heritage Council standards for archival recording has been completed by a qualified heritage consultant, prior to disturbance. Further discussed in **Section 5.4**.
HH4 (Dam enclosed by timber fence)	A detailed recording of site/item HH4 to Heritage Council standards for archival recording has been completed by a qualified heritage consultant, prior to disturbance. Further discussed in **Section 5.4**.
HH5 (Fenced enclosure adjacent to dam)	A detailed recording of site/item HH5 to Heritage Council standards for archival recording has been completed by a qualified heritage consultant, prior to disturbance. Further discussed in **Section 5.4**.
HH11 & HH12 (Oaklands)	A detailed heritage assessment and archival recording of the Oaklands buildings to Heritage Council standards has been completed by a qualified heritage consultant, prior to commencement of mining in the Ravensworth North area. Further discussed in **Section 5.1.1**.
HH15 to HH18 (Former Government Reserve Associated Items)	A detailed recording of sites/items HH15 to HH18 to Heritage Council standards for archival recording has been completed by a qualified heritage consultant, prior to disturbance. During the archival recording the full extent of the system of fence lines potentially associated with the TSR should be investigated, identified and recorded. Further discussed in **Section 5.4**.
Chain of Ponds Hotel and Outbuildings, Liddell	Ravensworth Operations will ensure that relevant blast criteria are met at the Chain of Ponds Hotel site through management of blasting practices over the life of the project. Further discussed in **Section 5.3**.
Ravensworth Homestead, Hebden Road, Ravensworth	Ravensworth Operations will ensure that relevant blast criteria are met at the Ravensworth Homestead site through management of blasting practices over the life of the project. Further discussed in **Section 5.3**.
Ravensworth Public School, New England Highway	Ravensworth Operations will ensure that relevant blast criteria are met at the Ravensworth Public School site through management of blasting practices over the life of the project. Further discussed in **Section 5.3**.
St. Clements Anglican Church, Camberwell	Ravensworth Operations will ensure that relevant blast criteria are met at the St Clements Anglican Church through management of blasting practices over the life of the project. Further discussed in **Section 5.3**.

Site	Management of Identified Heritage Sites
Community Hall, Camberwell	Ravensworth Operations will ensure that relevant blast criteria are met at the Community Hall, Camberwell through management of blasting practices over the life of the project. Further discussed in **Section 5.3**.
Hillcrest	Fencing off and restricting access to the building containing asbestos as a first priority. The fences should be high enough and strong enough to prevent animal and human interference in the contaminated areas. Asbestos warning signs should be clearly displayed on all fencing.
Fairview	Fencing off and restricting access to the fallen buildings containing asbestos as a first priority. The fences should be high enough and strong enough to prevent animal and human interference in the contaminated areas. Asbestos warning signs should be clearly displayed on all fencing.

Source: Umwelt 2009a and Ecological Australia 2018

5.1.1 HH11 & HH12 (Oaklands)

Although no direct impacts to Oaklands or its outbuildings have been identified, this site/item may potentially be indirectly impacted through vibration from blasting from activities as the pit progresses in a southward direction, this is envisaged to be approximately 2020. Current use of the house will influence the management actions required. In terms of blasting the following measures will be undertaken to mitigate any potential negative impacts resulting from the effects of blasting:

- A baseline dilapidation survey including aspects of a heritage assessment of the Oaklands buildings has been completed. This report schedules the condition of the fabric of the buildings and records areas of existing deterioration and damage for the purpose of establishing a baseline upon which any future damage can be assessed. This report is included as **Appendix D.**
- Prior to 2020 Oaklands be assessed and if deemed appropriate, particularly the stable/ shearing shed additional nonintrusive structural supports will be used to support any structures that may require it;

The management recommendations of the dilapidation survey and assessment will guide the management of the Oaklands buildings. If appropriate, the management strategy recommended should include, but not be limited to, consideration of:

- Any actions undertaken as part of management will be recorded and maintained and compared to the baseline dilapidation survey to track the interventions made;
- An annual inspection of the homestead for pests and the ingress of pests will be undertaken and if required treatment will be undertaken; and
- A biannual inspection will be undertaken utilising the dilapidation survey as a reference. The aim of the inspection will be to identify any deterioration and required maintenance work necessary to ensure the ongoing protective care of the site.

5.2 Program/Procedures for photographic and archival recording

All archival recording was undertaken prior to the commencement of activities that would potentially disturb/impact the heritage items nominated for archival recording (refer to **Table 5.1**).

5.2.1 Onsite Digital Archival Photographic Recording

The archival recording was undertaken in accordance with Project Approval PA09_0176, Schedule 3, Condition 42 (c) and Heritage Council guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006). This record along with a detailed Photographic Archival Recording report (**Appendix C**) was completed and submitted to Local Historical Organisations and DPHI in March 2012 (**Appendix B**). The photographic recording included:

- Contextual photographs showing site/item and remains, and relevant relationships to other sites/items and surroundings;
- Detailed photographs of each site/item;
- Preparation of plans of the sites/items (unless nature of site/item does not warrant a site plan, for example HH1 - Old Lemington Road bridge over Emu Creek. In these instances, the photographs will be accompanied by a plan indicating the location of the site only); and
- Photographic plans of all sites/items.

5.2.2 Photographic Archival Record

The photographic archival record comprised copies of a brief report detailing background information and methodology in addition to the actual archival record. The photographic prints forming the archival record will be processed with archivally stable inks on archivally acceptable photographic paper and stored in archival polypropylene sleeves. The photographic report and photographic materials will be stored in an archival folder.

5.3 Management of Potential Effects of Blasting on Heritage Items

The Ravensworth BMP has been prepared to provide a description of the measures to be implemented by Ravensworth to manage blasting operations and to detail the blast monitoring requirements associated with the operation. Blast impact assessment criteria for the applicable heritage items within, and in the vicinity of the Project Area, are detailed in **Table 5.2** below.

Table 5.2 Blast Impact Assessment Criteria for Heritage Items

Site	Location	Ground Vibration Criterion (mm/s)	Air Blast Criterion (dB Linear Peak)
Ravensworth Public School	Within Project Area	10	133 dB
Chain of Ponds Hotel	Outside Project Area	10[1, 3]	133 dB
Ravensworth Homestead	Outside Project Area	10	126 dB[2]
Camberwell Church	Outside Project Area	5[3]	115 dB[4]

***Note:** [1.] Established by Liddell Colliery for consent DA 305-11-01. [2]. Established by Ravensworth East Mine (Consent DA 52-03-99) [3.] Condition 10 of Schedule 3 of PA 09_0176 provides for allowable exceedances of 5% of blasts over 5mm/s, and no exceedance of 10mm/s. [4]. Condition 10 of Schedule 3 of PA 09_0176 provides for allowable exceedances of 5% of blasts over 115dB, and no exceedance of 120bB.*

As detailed within **Table 5.2**, blast impact assessment criteria for the Chain of Ponds Hotel have been established through an existing consent. The vibration criteria detailed within the Liddell Colliery DA 305-11-01, which is applicable to the Chain of Ponds Hotel, has also been applied to the Ravensworth Homestead and the Ravensworth Public School. It is noted that in accordance with DA 305-11-01, this criteria is the subject of regular review in accordance with existing development consent requirements (Umwelt 2011b:7).

5.3.1 Blast Monitoring Program

The BMP includes the monitoring of all blasts against the criteria specified in **Table 5.2**. In accordance with the Project Approval PA09_0176, monitoring of all blasts is to be undertaken to identify blasting impacts on private residences within Camberwell Village, St Clements Church, the Chain of Ponds Hotel, Ravensworth Homestead and Ravensworth Public School. In addition, blast monitoring will also be undertaken to identify blasting impacts on the Community Hall and Camberwell.

If blast monitoring, as described above, identifies blasts that have exceeded the ground vibration impact assessment criteria at these sites, external reporting requirements (**Section 6.3**) and additional inspections will be undertaken in order to identify any deterioration as a result of the exceeded levels and blasting practices modified, refer to **Section 5.4.7**.

5.4 General Management Strategies

5.4.1 Access to sites

Sites prior to archival recording were fenced and demarcated particularly within the mining footprint, now that all sites to be disturbed have been recorded these are no longer fenced. All sites such as Oaklands are protected within a fenced area with limited access. Access is only permitted for required personnel and an induction must be completed. Risk of further damage to the remaining sites is low.

5.4.2 Consultation with Stakeholders

As discussed in **Section 1.4**, this HMP has been submitted to the Heritage NSW, Council, local historical organisations and relevant landowners concurrently prior to its initial submission to the DPHI.

In previous revisions of this HMP, Rob Tickle (MLFHS) was involved in the collation of the research material and survey of the previously identified sites (sites/items HH20 and HH21) undertaken as part of the 2009 European Heritage Assessment and was provided with access to inspect sites HH11 (Oaklands) and HH14 (former quarry on Davies Creek tributary). Comments on the HMP received will be incorporated into the HMP prior to submission to and approval by DPHI.

5.4.3 Personnel Inductions

The requirement to undertake activities at Ravensworth in accordance with the *Heritage Act 1977*, are detailed within the induction to be undertaken by all employees and contractors working at Ravensworth Mine . The induction includes:

- The nature and location of the heritage sites;
- The nature of the protection measures being undertaken;

- Procedures for contacting the Environment and Community Manager if previously unknown historical heritage items and/or artefacts are uncovered during works; and
- Information related to the relevant legislation for the protection of historical heritage sites/items, particularly provisions Section 139 and 146 of the NSW *Heritage Act 1977.*

5.4.4 Identification of Heritage Sites

The GCAA Ground Disturbance Permit (GDP) is utilised at Ravensworth to ensure that activities are undertaken in a manner which minimises the potential for impacts to heritage sites. The GDP requires an assessment of whether there are any known heritage sites in the vicinity of the proposed disturbance, prior to the commencement of any ground disturbing activities. All GDPs are to be authorised by the ECM prior to the commencement of any ground disturbing works.

5.4.5 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.

- A 'relic' under the Heritage Act is defined 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.*

5.4.6 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 steps are to be undertaken in accordance with these associated documents:

- *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);
- *Code of Practice for Archaeological Investigation of Aboriginal Objects* in New South Wales (Department of Environment Climate Change and Water 2010);
- *Guide to investigating, assessing and reporting on Aboriginal cultural heritage* (Office of Environment and Heritage 2011); and
- *Manual for the Identification of Aboriginal remains (*NSW Department of Environment and Conservation 2006).

The steps that are to be followed for any potential human skeletal material or potential burial site:

- As soon as remains are exposed, work is to halt immediately to allow assessment and management;
- Contact local police and Heritage NSW;

- 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);
- 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 Heritage NSW 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 NSW 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, Heritage NSW, registered Aboriginal parties etc.) and in accordance with the *Public Health Act 2010*.

Any skeletal remains uncovered during the course of mining will be removed in a sensitive and dignified manner. Approval from NSW Health, under the *Public Health Act 2010* and *Clause 69* of the *Public Health Regulation 2012*, will be required prior to removing/exhuming any skeletal remains. The Coroner has jurisdiction with respect to inquiry regarding any death or suspected death that has occurred within the last 100 years, therefore removal of remains will also be consistent with Clause 19 of the *Coroners Act 2009.*

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, the *Public Health Act 2010* and any requirements of the Heritage NSW and NSW Health.

A site specific management policy for the removal of any potential human skeletal remains uncovered within the proposed Project Area during archaeological investigation will be developed, in consultation with a physical anthropologist, Heritage NSW and relevant stakeholder groups, if any skeletal remains are identified. 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**

5.4.7 Further Assessment of Historical Heritage Features

If any additional potential impacts or deterioration to the identified heritage items, other than those discussed in this HMP, or exceedance of the blast criteria at historical heritage features are identified prior to or during the course of mining, additional assessment may be required to be undertaken in accordance with professional standards and guidelines.

In the event the blast monitoring identifies blast impacts above those listed in **Table 5.2,** the ECM (or delegate) will engage an independent structural engineer to undertake an inspection of the feature to determine if any blasting impacts have impacted the structure.

6. Reporting and Review

6.1 Reporting

All internal and external reporting will be undertaken in accordance with the requirements of GCAA Standard 11 Environment (GCAA-625378177-9978) and this management plan.

6.2 Internal Reporting

The ECM will report to the Operations Manager the results of investigations of any complaints, any exceedances of the blast overpressure or vibration assessment criteria for those heritage items in **Table 5.2** and any non-compliances within this HMP.

If an exceedance of the blast overpressure or vibration assessment criteria for those heritage items in **Table 5.2** or a non-compliance with this HMP is identified, an internal report detailing the circumstances of the non-compliance and resulting actions will be developed and submitted to GCAA.

6.3 External Reporting

A summary of all blast monitoring results for those heritage items in **Table 5.2** will be made publicly available on the Ravensworth website in accordance with Schedule 5, Conditions 7 and 10 of PA09_0176.

In accordance with *Protection of the Environment Legislation Amendment Act 2011 (*Amendment Act*)*, Ravensworth will also provide monitoring data on its website within 14 days of obtaining the data.

If an exceedance of the blast overpressure or vibration assessment criteria for those heritage items in **Table 5.2** or a non-compliance with this HMP is identified, external reporting will be undertaken as required in **Section 6.5**.

The Annual Review prepared each year for Ravensworth will include the results of monitoring and recording as well as details regarding any management and mitigation works undertaken on the heritage items (**Section 6.3.1**).

6.3.1 Annual Review

In accordance with Condition 34, Schedule 5 of PA09_0176 Ravensworth by the end of March 2012, and annually thereafter, Ravensworth must review the environmental performance of the development to the satisfaction of the Planning Secretary. This review must:

a) describe the works (including any rehabilitation) 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 development over the past year, which includes a comparison of these results against the:

- relevant statutory requirements, limits or performance measures/criteria;
- monitoring results of previous years; and

- relevant predictions in the EA;

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 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 Review

This HMP and its supporting documents will be reviewed by the ECM in accordance with Condition 4, Schedule 5 of the Project Approval 09_0176. This Plan will be reviewed within three months of:

- The submission of the Annual Review;
- The submission of an incident report;
- The submission of an independent environmental audit (IEA); and
- Any modification to the conditions of PA09_0176.

Ravensworth will review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary.

The review process will also consider changes in environmental legislation and guidelines, and technology or operational procedures.

6.5 Incident and Non-Compliance Reporting

6.5.1 Incident Notification

As defined by PA 09_0176, an incident is an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance.

Ravensworth must immediately notify the DPHI and any other relevant agencies after it becomes aware of an incident. The notification must be in writing via the Department's Major Projects Website and identify the development (including the development application number and name) and set out the location and nature of the incident.

6.5.2 Non-Compliance Notification

As defined by PA09_0176, a non-compliance is an occurrence, set of circumstances or development that is a breach of this consent.

Within seven days of becoming aware of a non-compliance, Ravensworth must notify the Department of the non-compliance. The notification must be in writing via the Department's Major Projects Website and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not

comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

In accordance with Condition 6A of Schedule 5 of PA09_0176, as soon as practicable following identification of a non-compliance within this HMP, Ravensworth will report the non-compliance to the relevant authorities including the DPHI and EPA.

In addition, in accordance with Condition 6A of Schedule 5 of the PA09_0176, within seven days of becoming aware of the non-compliance, Ravensworth will provide the Secretary and any relevant agencies with a detailed report on the incident. The report will include the following details:

- Date, time and nature of the exceedance/incident;
- Identify the likely cause of the exceedance/incident;
- Describe the response action that has been undertaken to date; and
- Describe the proposed measures to address the exceedance/incident.

6.6 Community Complaints

In accordance with the EMS, Ravensworth will maintain a centralised location to record communication details of relevant external stakeholder and procedures for stakeholder contact including a Complaints Procedure.

The Complaints Procedure will utilise the Community Contact Line (ph:**1800 620 553**), a free call telephone number that will be regularly advertised in a local newspaper. The Contact Line will be in operation 24 hours per day, seven days a week.

Community complaints will be recorded and investigated by the ECC. All other complaints, via letter, in person or by fax, will also be recorded and investigated by the ECC. Initial response to the complainant will be made as soon as practicable by the ECC.

Ravensworth will arrange monitoring at or near the complainants residence where appropriate and where agreed to by the complainant. The complainant is to be advised of these arrangements once made.

In the event a complaint is received in relation to noise from the operation, an investigation will be undertaken in accordance with *GCAA 10.05 Community Complaint Management Protocol*, which provides guidance to GCAA operations in the management of incidents. If required, this investigation will include:

- Mobile continuous noise monitoring units to assess the noise levels being recorded at the complainant's location; and/or
- Reviewing shift reports to determine the location of machinery at the time of the complaint.

A register of all community complaints, updated monthly, will be made publicly available on the Ravensworth website in accordance with Schedule 5, Condition 10 of PA09_0176.

All community complaints during each reporting period will be provided in the Annual Review (**Section 7.3.1**).

6.7 Monitoring Records

In accordance with EPL 2652 conditions and as per the Ravensworth document control procedures, all blast monitoring records will be:

- Kept in a legible form, or in a form that can readily be reduced to a legible form;
- Maintained on site for at least four years; and
- Produced in a legible form to any authorised officer of the EPA who asks to see them.

For more information regarding the Ravensworth blast monitoring results refer to the BMP.

6.8 Access to Information

From the end of June 2011, Ravensworth must:

a) make copies of the following publicly available on its website:
   - the EA;
   - all current statutory approvals for the development;
   - approved strategies, plans and programs required under the conditions of this consent;
   - a 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 complaints register, which is to be updated on a monthly basis;
   - minutes of CCC meetings;
   - the annual reviews (over the last 5 years);
   - any independent environmental audit, and the Applicant's response to the recommendations in any audit;
   - any other matter required by the Planning Secretary; and

b) keep this information up to date, to the satisfaction of the Planning Secretary.

6.9 Independent Environmental Audit

In accordance with the Condition 8, Schedule 5 of PA09_0176, by June 2012 and every three years thereafter, the Ravensworth will commission an Independent Environmental Audit (IEA) to the satisfaction of DPHI.

The IEA will include an assessment of the adequacy of the HMP. Where necessary, following the IEA, the HMP will be updated and action taken to improve heritage management outcomes.

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Ravensworth Mine Blast Management Plan.

8. Document Information

8.1 Change Information

Full details of the document history are recorded in the document control register, by version. A summary of the current change is provided in ***Table* 8-1** below.

Table 8.1 – Change Information

Version	Date	Reviewer	Change Summary
1	20/11/2014	E & C Dept.	New Glencore template and revision of document considering completed activities.
2	06/02/2015	E & C Dept.	Incorporated regulator and stakeholder comments
3	17/02/2015	E & C Dept.	Final changes prior to publishing document
4	16/06/2015	E & C Dept.	Removed requirements around Oakland's Homestead
5	16/05/2018	Laura Barben & Luke Bowden	Inclusion of findings from Hillcrest Offset Area Heritage Assessment and general document update in line with current legislation and changes to department names as relevant
6	05/08/2022	Kieran Stephenson-Banks	Update to new template.
7	01/09/2024	E & C Dept	This HMP was updated in consideration of MOD4 and address the IEA 2024 recommendations.

Appendix A - Significance Assessment – Clarification & Justification

Site Name	Description	Significance Assessment
HH2 & HH7	Cut tree stumps with board holes	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: are unlikely to provide evidence of any strong or special associations, for example with Dr James Bowman, Captain William Russell, F.J.L. Measures and Alexander Bowman; 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: may contribute information about how the landscape was used and changed. However, in general as individual items have little research potential beyond their immediate physical presence; Criterion (f) Rarity: are typical of sites 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 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.
HH3	Former timber getting site	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 any Aboriginal people who may have been involved in timber getting or with the Bowman, Russell, and Measures families; Criterion (c) Aesthetic: does not generally demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: unlikely to have a strong association with any previous or contemporary community or group, including any Aboriginal people who may have been involved in timber getting; Criterion (e) Scientific: unlikely to have significant archaeological remains with any research potential; Criterion (f) Rarity: typical of other sites/items typically found within rural landscapes; and Criterion (g) Representativeness: representative of the sites typically found in a rural landscape with a history of timber getting
Site Name	**Description**	**Significance Assessment**

		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.
HH6	Remnant timber mortised fence line	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: is unlikely to provide evidence of any strong or special associations, for example with Dr James Bowman, Captain William Russell, F.J.L. Measures and Alexander Bowman; Criterion (c) Aesthetic: does not generally demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: is unlikely that the site 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 an individual item has little research potential beyond its immediate physical presence; Criterion (f) Rarity: is typical of sites found within rural landscapes such as that of the Project Area and is unlikely to meet this criteria; and Criterion (g) Representativeness: is 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.
HH9	Concrete bridge over Farrells Creek	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: is unlikely to provide evidence of any strong or special associations, for example with Dr James Bowman, Captain William Russell, F.J.L. Measures and Alexander Bowman; Criterion (c) Aesthetic: does not generally demonstrate distinctive
Site Name	**Description**	**Significance Assessment**
		aesthetic qualities or technical innovations; Criterion (d) Social: is unlikely that the site would have a strong association with any previous or contemporary community or group;

		Criterion (e) Scientific: an example of a typical simple, economical and effective bridge form with no research potential beyond its immediate physical presence; Criterion (f) Rarity: is typical of a simple economic bridge form found within the wider area and is unlikely to meet this criteria; and Criterion (g) Representativeness: is representative of bridges of this type typically found in the Hunter area. 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.
HH10	Former timber bridge foundations over Farrells Creek tributary	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: is unlikely to provide evidence of any strong or special associations, for example with Dr James Bowman, Captain William Russell, F.J.L. Measures and Alexander Bowman; Criterion (c) Aesthetic: timber bridges can portray a common construction technique in the Hunter Region from a limited range of materials, principally timber, and can have some aesthetic significance in the context of the surrounding landscape. However, there are other better examples of intact timber bridges in the Hunter area. Criterion (d) Social: is unlikely that the site would have a strong association with any previous or contemporary community or group; Criterion (e) Scientific: the remains of an example of a typical simple, economical and effective bridge form with no research potential beyond its immediate physical presence; would have been typical of bridges constructed in the area from local materials. As an individual item it has no research potential beyond the immediate physical presence of a bridge of this type and is unlikely to provide further unknown information regarding the history and development of the area.\ Criterion (f) Rarity: the remnant bridge, when functioning, would have been a typical example of bridges constructed in the area and is unlikely to meet this criteria; and Criterion (g) Representativeness: representative of the types of timber bridges constructed in the area from local materials. In regards to archaeological significance (Bickford and Sullivan 1984):
Site Name	**Description**	**Significance Assessment**
		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.

HH13	Concrete foundations	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: is unlikely to provide evidence of any strong or special associations, for example with Dr James Bowman, Captain William Russell, F.J.L. Measures and Alexander Bowman; Criterion (c) Aesthetic: does not generally demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: is unlikely that the site would have a strong association with any previous or contemporary community or group; Criterion (e) Scientific: has no research potential beyond its immediate physical presence; Criterion (f) Rarity: is typical of common concrete building foundations and is unlikely to meet this criteria; and Criterion (g) Representativeness: is representative of concrete building foundations. 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.
HH19 and HH 23	Timber built cattle yards	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: are unlikely to provide evidence of any strong or special associations, for example with Dr James Bowman, Captain William Russell, F.J.L. Measures and Alexander Bowman; Criterion (c) Aesthetic: do not generally demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: are unlikely to 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;
Site Name	**Description**	**Significance Assessment**
		Criterion (f) Rarity: are typical of rural infrastructure found throughout the Hunter region and are unlikely to meet this criteria; and Criterion (g) Representativeness: are representative of sites found within 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.

HH24 - 27	Timber sheds and yards along New England Highway	Criterion (a) Historical: demonstrate the pattern of land use and historical development of the area, including the development of the dairy farm industry. 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 Dr James Bowman, Captain William Russell, F.J.L. Measures and Alexander Bowman; Criterion (c) Aesthetic: have potential for limited aesthetic qualities arising from their simple unadorned construction from a limited palette of materials, principally timber. However, do not generally demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: are unlikely to 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 have little research potential beyond their immediate physical presence; Criterion (f) Rarity: are typical of structures found throughout the Hunter region and are unlikely to meet this criteria; and Criterion (g) Representativeness: are representative of a range of farm buildings potentially dating from the mid nineteenth century found within 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**
HH28	Site of former hayshed	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: is unlikely to provide evidence of any strong or special associations, for example with Dr James Bowman, Captain William Russell, F.J.L. Measures and Alexander Bowman; Criterion (c) Aesthetic: does not generally demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: is 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. May contribute information about how the landscape was used and changed during its use as pastoral and agricultural land. However, in general as an individual item has little research potential beyond its immediate physical presence; Criterion (f) Rarity: is typical of rural infrastructure found throughout the Hunter region and is unlikely to meet this criteria; and Criterion (g) Representativeness: is representative of sites found within a rural landscape with a history of pastoral and agricultural activities.

		<u>In regards to archaeological significance (Bickford and Sullivan 1984):</u> 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.

Appendix B - Consultation and Correspondence

Date	Stakeholders	Summary of Conditions	Ravensworth Contact
12/04/2012	Muswellbrook Shire Local and Family History Society INC.	Submission of Archival Recording of Historic Heritage Items Ravensworth NSW	Tim Adams (Umwelt)
12/04/2012	Singleton Public Library	Submission of Archival Recording of Historic Heritage Items Ravensworth NSW	Tim Adams (Umwelt)
20/03/2012	Howard Reed (Department of Planning and Infrastructure)	Submission of Archival Recording of Historic Heritage Items Ravensworth NSW	Greg Newton
24/11/2014	Heritage Council NSW	Request for review and comments on latest version of Plan	Greg Newton
24/11/2014	Singleton Council	Request for review and comments on latest version of Plan	Greg Newton
24/11/2014	Muswellbrook Shire Local and Family History Society	Request for review and comments on latest version of Plan	Greg Newton
24/11/2014	Family History Society of Singleton	Request for review and comments on latest version of Plan	Greg Newton
24/11/2014	Office of Environment and Heritage	Request for review and comments on latest version of Plan	Greg Newton
24/11/2014	Key knowledge holder Aboriginal Groups	Request for review and comments on latest version of Plan	Greg Newton
08/12/2014	All stakeholders	Reminder request for review and comments on latest version of Plan	Greg Newton
09/12/2014	Wonnarua Nation Aboriginal Corporation	Discussion and email around comments on plan	Greg Newton
13/12/2014	Muswellbrook Shire Local and Family History Society	Comments received and implemented into plan	Greg Newton
10/09/2018	DPE	Final approval of management plan received	Sam Palmer
31/10/2024	DPHI	Submission of reviewed plan	Klay Marchant

Department of Planning, Housing & Infrastructure

Our ref: MP09_0176-PA-145

Klay Marchant
Environment and Community Manager
Glencore – Ravensworth Operations
Via Major Projects Portal

20/11/24

Subject: Revision of Management Plans following Independent Environmental Audit

Dear Mr Marchant

I refer to the management plans submitted under the development consents for the Ravensworth Complex (PA09_0176 and 104/96) including:

- Heritage Management Plan as required under Condition 42(a) and (c) of Schedule 3 of PA09_0176;
- Air Quality and Greenhouse Gas Management Plan as required under Condition 24 of Schedule 3 of PA09_0176 and Condition 18 of DA104/96;
- Blast Management Plan as required under Condition 17 of Schedule 3 of PA09_0176; and
- Noise Management Plan as required under Condition 8 of Schedule 3 of PA09_0176 and Condition 11 of DA104/96.

I note the management plans have been revised in accordance with the recommendations of the 2024 Independent Environmental Audit and submitted to the Department in accordance with Condition 4, Schedule 5 of Project Approval 09_0176 and Condition 3, Schedule 4 of Development Consent 104/96.

Accordingly, as nominee of the Planning Secretary, I approve the following revised plans:

- Heritage Management Plan (Version 6);
- Air Quality and Greenhouse Gas Management Plan (Version 13);
- Blast Management Plan (Version 7); and
- Noise Management Plan (Version 10)

You are reminded that if there are any inconsistencies between the plans and the conditions of approval, the conditions prevail.

Please ensure you make the document publicly available on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Jack Turner on 9995 5387

Yours sincerely

Stephen O'Donoghue
Director
Resource Assessments
As nominee of the Planning Secretary

Appendix C - Photographical Archival Recording – Historic Heritage Items, Ravensworth NSW

Photographic Archival Recording – Historic Heritage Items, Ravensworth NSW

Prepared by

Umwelt (Australia) Pty Limited

on behalf of

Ravensworth Operations

Project Director:	Tim Adams		
Project Manager:	Tim Adams		
Report No.	2957/R03/Final	Date:	March 2012

Umwelt
Environmental Consultants

2/20 The Boulevarde
PO Box 838
Toronto NSW 2283

Ph: 02 4950 5322
Fax: 02 4950 5737
Email: mail@umwelt.com.au
Website: www.umwelt.com.au

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FIGURES

APPENDICES

1.0 Introduction

Ravensworth Operations has engaged Umwelt (Australia) Pty Limited (Umwelt) to prepare this photographic archival recording of heritage sites in accordance with Consent Condition 42(c) of the Ravensworth Operations Project Approval (09_0176) and Ravensworth Operations statement of commitments.

Condition 42(c) stated that

> The proponent shall prepare and implement a Heritage Management Plan for the project to the satisfaction of the Director-General. The plan must include: (c)(ii) program/procedures for photographic and archival recording of heritage items directly or indirectly affected by the project.

The statement of commitments made by Ravensworth Operations, contained within Project Approval 09_0176 included:

> 6.11.1 The proponent will implement the following historical heritage management measures – a qualified heritage consultant to NSW Heritage Office's standards will undertake archival recording of historic heritage sites of local significance directly or indirectly impacted by the project (HH1, HH4, HH5, HH11, HH14, HH15, HH16, HH17, HH18) prior to the commencement of mining.

1.1 Site Location

The sites presented within this archival recording are located within the Ravensworth Operations project area in the Upper Hunter Valley of New South Wales, approximately 25 kilometres north-west of Singleton and 26 kilometres south-east of Muswellbrook (refer to **Figures 1.1** and **1.2**).

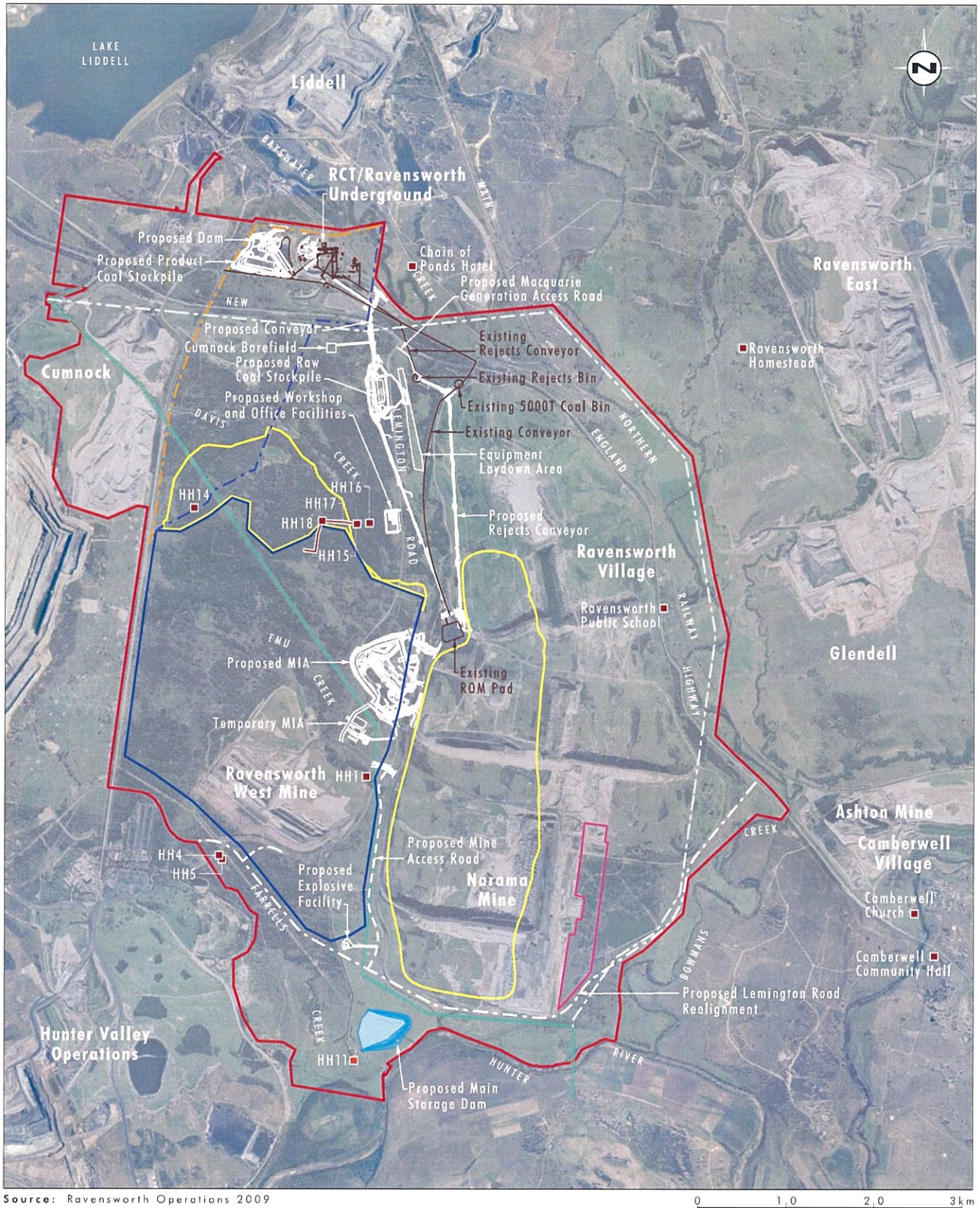
1.2 Background

The sites identified in the Ravensworth Operations area as requiring photographic archival recording comprise:

- the Old Lemington Road bridge over Emu Creek (site HH1);
- a timber fence enclosed dam and a post-and-two-rail timber fenced yard (sites HH4 and HH5);
- a former sandstone quarry on a Davis Creek tributary (site HH14);
- a former Travelling Stock Route (TSR) gate (HH15);
- a dam associated with the TSR (HH16);
- a timber fence associated with the TSR (HH17); and
- a timber enclosure and post area possibly associated with the TSR (HH18).

FIGURE 1.1

Locality Plan



Source: Ravensworth Operations 2009

0 1.0 2.0 3km
1:60 000

Legend

- Ravensworth Mine Complex
- Ravensworth North Pit
- Out of Pit Overburden Emplacement
- Narama Extended
- Existing 330kV Transmission Line
- Proposed 330kV Transmission Line
- Proposed Lemington Road Realignment
- Proposed Mine Access Road
- Existing Infrastructure
- Proposed Infrastructure
- Existing EnergyAustralia 66kV Powerline
- Proposed EnergyAustralia 66kV Powerline
- Historical Heritage Sites/Items

FIGURE 1.2

Location of Heritage Items

File Name (A4): R03/2957_033.dgn
20120307 10.34

These sites were all identified as having local significance in the *Ravensworth Operations European Heritage Assessment* (Umwelt 2009) prepared as part of the *Ravensworth North Project Environmental Assessment* (EA).

Sites HH1, HH14, HH17 and HH18 will be directly impacted by the project, while the remaining sites – HH4, HH5, HH15 and HH16 will have potential indirect impacts from the project.

The Oaklands Complex of buildings (site HH11) was identified as potentially being indirectly impacted through vibration from blasting. A baseline dilapidation survey and site specific heritage assessment are currently being prepared for this complex of buildings in order to better understand their significance and appropriate management. These sites are therefore not included as part of this archival recording.

2.0 Site Descriptions

Due to the nature of the local terrain and the nature of the sites being recorded (extensive timber enclosures and large quarry sites), a Trimble GeoXT 6000 with sub-metre accuracy was used where appropriate to record and plot the sites and their features. All of the plans presented in **Section 2.0** of this report have corresponding photographic location figures in **Appendix 1**.

All photographic references in the text of this report are to the photographs in **Appendix 1**.

2.1 HH1 Old Lemington Road Bridge

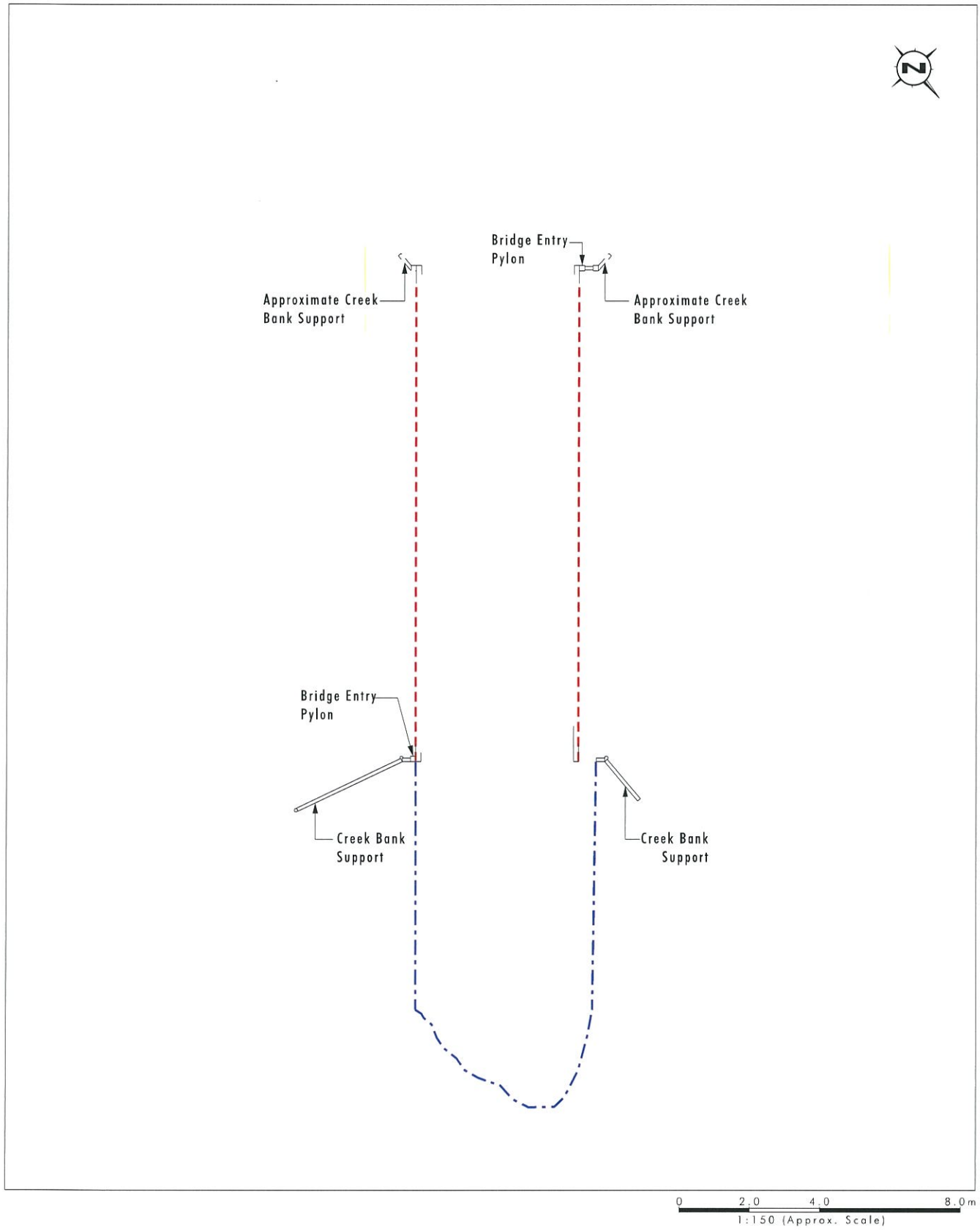
Site HH1, a bridge over Emu Creek (refer to **Figure 2.1**) consists of a timber deck with no guard rail (refer to photograph HH1-05). The timber superstructure of the bridge is supported by timber piers/piles driven into the creek bed and timber trusses. At either end of the bridge the timber trusses consist of horizontal beams spanning the bridge width. The central truss has an additional two diagonally crossing beams forming a lattice design across the width of the bridge (refer to photograph HH1-10). The road approach ramp on either side of the bridge is supported by earthen embankments contained by timber beams/planks (refer to photograph HH-12).

During the assessment of the bridge, it was noted that the former asphalt road surface of Lemington Road survives in patches on the east and west bridge approaches. At the time of the archival recording the bridge was in such a dilapidated condition it was not safe to cross the creek and inspect the west approach to confirm the extent of any bitumen remaining.

The dilapidated condition of the bridge, and Occupation Health and Safety concerns, allowed only for an estimate of the measurements of certain elements including the length of the bridge and size of the west embankment supports. As such, **Figure 2.1** (and corresponding **Figure A1**) are schematic rather than comprising a measured drawing.

2.2 HH4 Timber Fence Enclosed Dam

Site HH4 is an ovoid shaped dam enclosed by a post-and-two-rail fence (refer to **Figure 2.2**). A number of the fence posts forming the enclosure comprise the base of a tree trunk, re-used to form part of a fence line following the felling of the tree (HH4-07). Running through the centre of the dam a number of smaller timber posts were identified leading to a narrow

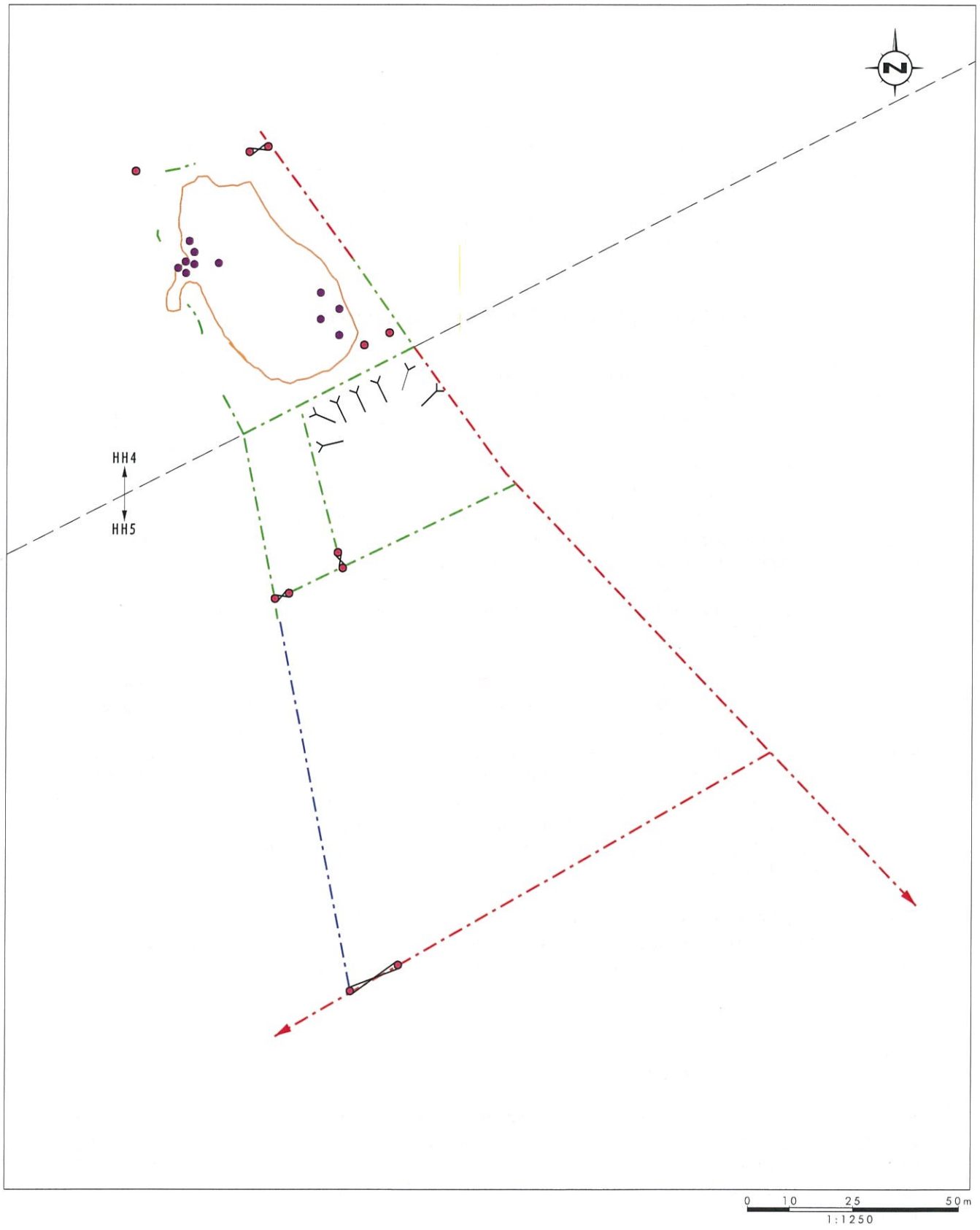


Legend

---- Extent of Remnant Bitumen Surface
---- Bridge Edge

FIGURE 2.1

Site HH1



Legend

- Extant Post and Rail Fence
- Location of Former Fence Line (Posts and Fallen Rails)
- Location of Former Fence Line (Post Holes)
- Fence Posts
- Fence Posts in Dam
- Gate
- Dam

FIGURE 2.2

Sites HH4 and HH5

channel off the west side of the dam which has several remnant timber posts arranged in a rectangular pattern (refer to photograph HH4-09).

The function of the dam enclosed by a timber fence, and apparent former alignment of fence through the dam itself, is unclear. The dam may have been used to wash animals as there is no apparent washing shed nearby. Farmers may have devised a sheep wash using the dam and its water. However, line wire has not been added to the timber fence line, as such the fence would not have successfully kept sheep either in or out of the dam area. The fence enclosing the dam may have simply functioned to keep cattle out of the dam.

2.3 HH5 Post-And-Two-Rail Timber Enclosures

Site HH5 was originally identified as a post-and-two-rail fenced rectilinear enclosure measuring approximately 35 metres by 15 metres (refer to **Figure 2.2**). While undertaking the archival recording a number of additional timber post-and-rail fence lines were identified associated with the 35 by 15 metre enclosure. As such, a larger area was surveyed identifying that the rectilinear enclosure comprised a subdivision of a larger trapezoid shaped system of associated fenced yards, presumably for cattle, measuring approximately 130 metres in length and 115 metres across the longer (southern) boundary (refer to **Figure 2.2**). The western boundary of the enclosure/yards is indicated primarily by regularly spaced depressions/post holes indicating the former location of fence posts (refer to photograph HH5-05). The majority of the remaining fence lines/enclosure boundaries primarily comprise remnant fence posts in varying states of preservation with scattered rails in the vicinity of the fence alignment.

The large enclosure/yard was subdivided to create a smaller trapezoid shaped enclosure at the south side of the southern dam (site HH4) wall measuring approximately 40 metres in length and 60 metres across the longer (southern) boundary (refer to **Figure 2.2**). The internal (southern) fence of this enclosure crosses the creek line that was dammed to create the dam in HH4. The creek continued to flow after the dam was constructed, or at least back up towards the dam wall, as indicated by the build up of sediment against the bottom fence rail (refer to photograph HH5-13). Some of the posts within the enclosure have three mortises, potentially indicating the location of a sliding rail opening or gate (refer to photographs HH5-04 and 08).

The smaller enclosure was again divided, creating the originally identified rectilinear shaped 35 by 15 metre HH5 enclosure. It is unclear what the function of the increasingly small enclosures was, however the divisions may have been to separate stock for branding, vaccination, breeding and other procedures.

2.4 HH14 Quarry Site

Site HH14 is a former quarry site on a first order tributary of Davis Creek. As shown in **Figure 2.3** there is an extant track that runs along the ridge on the southwest side of the quarry utilising an existing electricity easement. There is also a smaller disused track located between the easement and the quarry site. This disused track may have been the location of the original track to the quarry.

The quarry site consists of two main exposed quarry faces (Quarry 1 and Quarry 2) and three smaller quarry faces (Quarries 3 to 5) (refer to **Figures 2.4** to **2.6**).

Quarry 1 is the largest and most substantial of the quarries (refer to **Figure 2.4**). The exposed quarry wall ranges from 2 metres to 4 metres in height (refer to photograph HH14-

Aerial Photo: Ravensworth Operations 2009

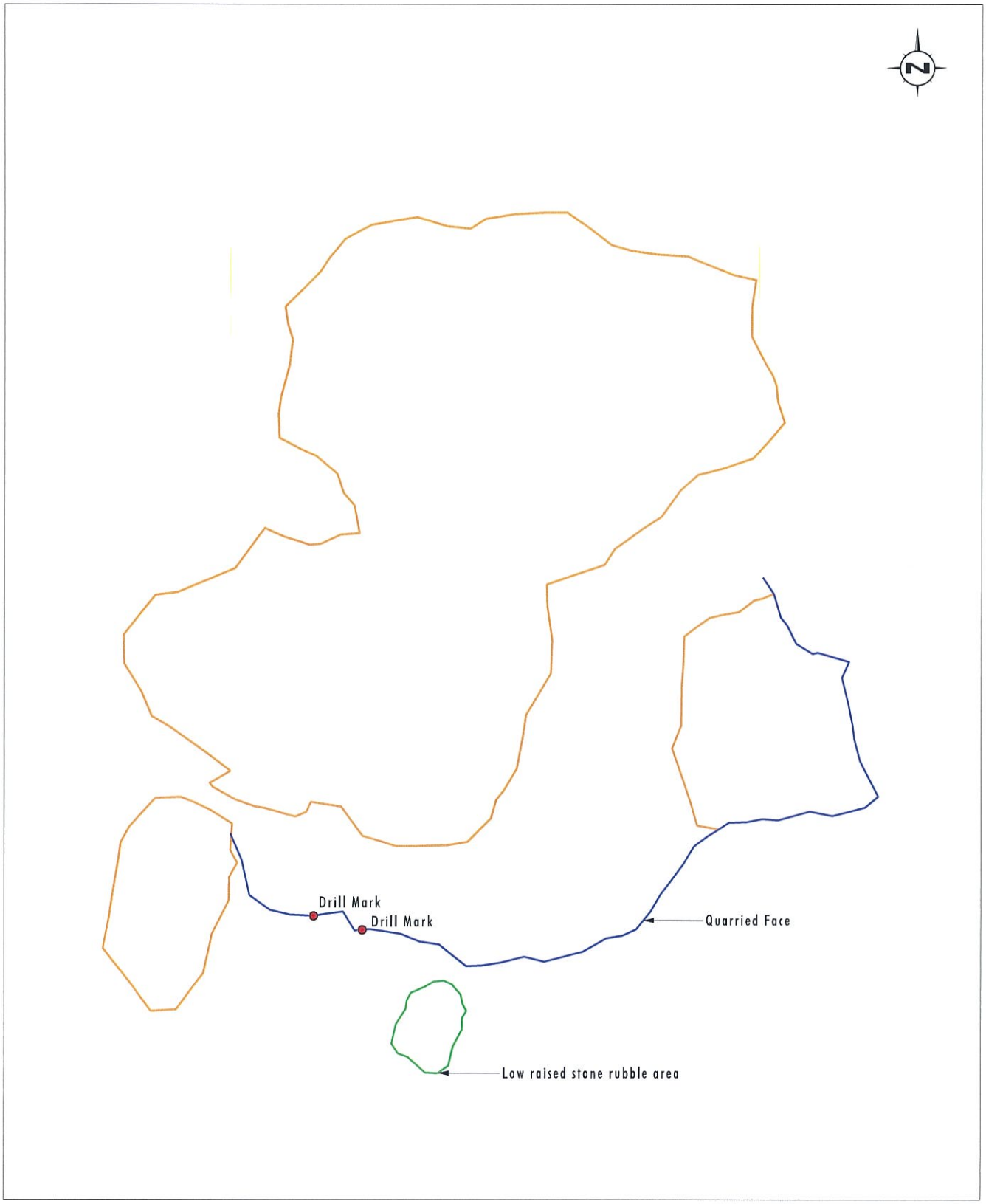
0 25 50 100m
1:2000

Legend

- Edge of Quarry Face
- Existing Track/easement
- Former Track

FIGURE 2.3

Site H14 Quarries 1 to 5



Legend

- Quarried Face
- Waste Stone Piles
- Drill Mark Locations

FIGURE 2.4

Site HH14 Quarry 1

Q1-03). The sandstone faces are currently weathering as a result of water and wind erosion. There are two drill marks present in Quarry 1 (refer to photographs HH14-Q1-12 and HH14-Q1-14) and extensive piles of waste rock within the quarried area (refer to photograph HH14-Q1-02), with evidence of some stone dressing occurring at the quarry (refer to photograph HH14-Q1-22).

The exposed wall of Quarry 2 is just over 1 metre in height (refer to photograph HH14-Q2-06) and also has evidence of a drill mark (refer to photograph HH14-Q2-04 and **Figure 2.5**). A large waste stone pile in the centre of the quarried area (refer to photograph HH14-Q2-08) partially obscures a secondary lower quarry face (refer to photograph HH14-Q2-10).

Quarries 3 to 5 are all smaller and less well defined than Quarries 1 and 2, often a rectangular return is the clearest indication of a quarried face (refer to **Figure 2.6**). The exposed walls are a maximum of 1 metre in height (refer to photograph HH14-Q3-01), with a number of small waste rock piles within the quarried area. Quarry 3 has evidence of a drill mark (refer to photograph HH14-Q3-06). These smaller quarries likely indicate episodes of trial quarrying.

No evidence of workers camps were located in the vicinity of the quarry site, although a potential hearth and sub-rectilinear raised rubble area were identified (refer to photograph HH14_Q1-33).

The closest extant sandstone structure to the quarry is likely the Chain of Ponds Hotel approximately 3.5 kilometres to the north-east. Research undertaken as part of the initial assessment of the site identified two possible sources of stone for the construction of the Chain of Ponds Hotel:

- Grass Tree Hill near Muswellbrook; and
- a creek named Davis's Creek (Dawson *et al.* 1990:11).

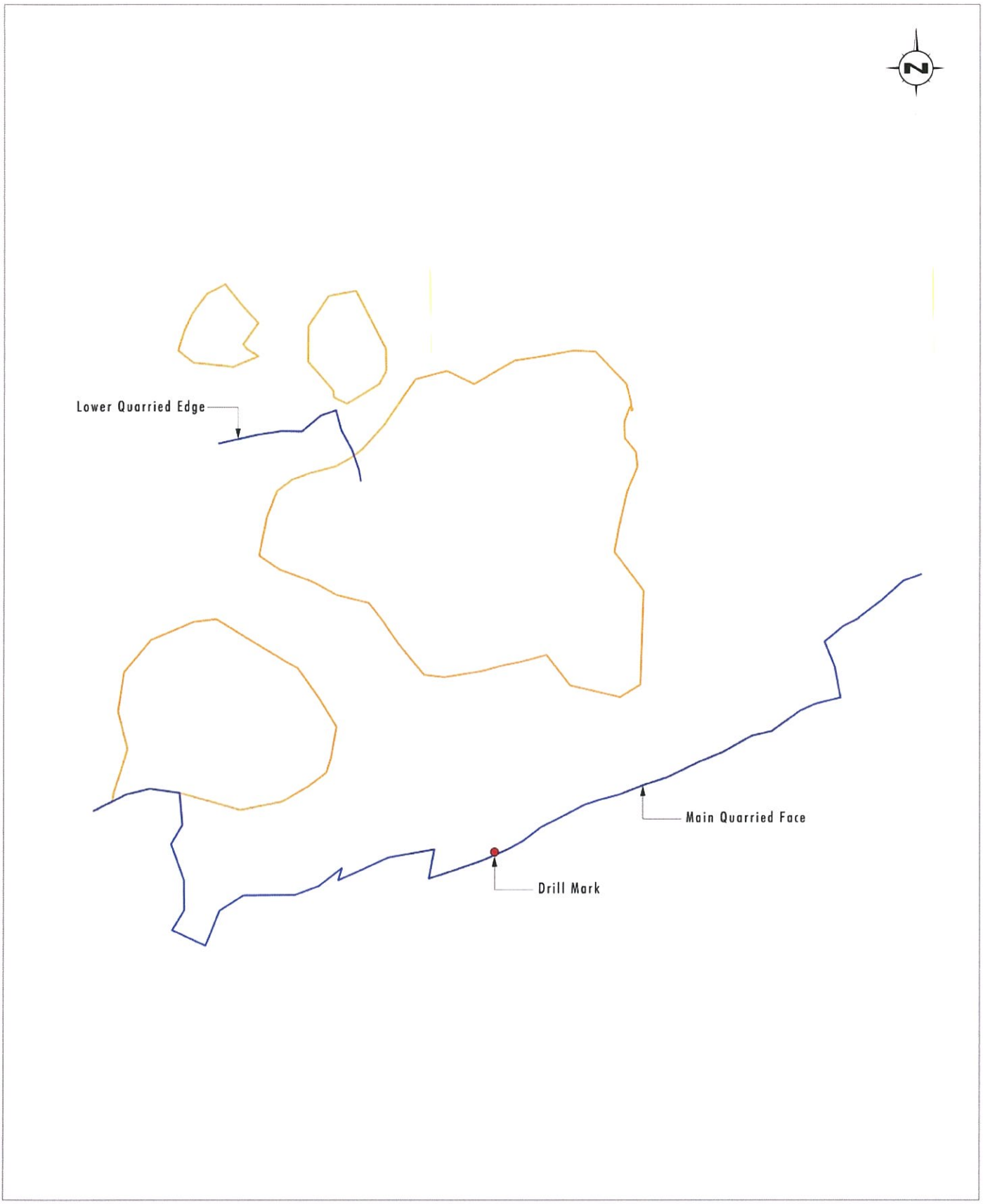
Site HH14, located on a tributary of Davis Creek, may comprise the source of the stone for the Chain of Ponds Hotel, in addition to a number of the sandstone built homesteads in the area.

2.5 HH15 to HH18

Sites HH15 to HH18 comprise a group of four sites which appear to be associated with a former government reserve or TSR.

2.5.1 HH15 Former TSR Gate

During the survey undertaken as part of the 2009 heritage assessment a sign on a metal and wire gate located on the south side of Davis Creek indicated the location of a Travelling Stock Reserve (refer to **Figure 2.7**). At the time of this photographic recording the sign was no longer present at the site. While no TSR is identified in the area on Parish Maps, an area marked 'Reserve' is present on the 1942 Ravensworth Parish Map west of the junction of Saltwater and Davis Creek. This reserve may indicate the area used as a TSR identified on site, potentially during a time of growth in the use of reserves and routes during and following the two world wars.

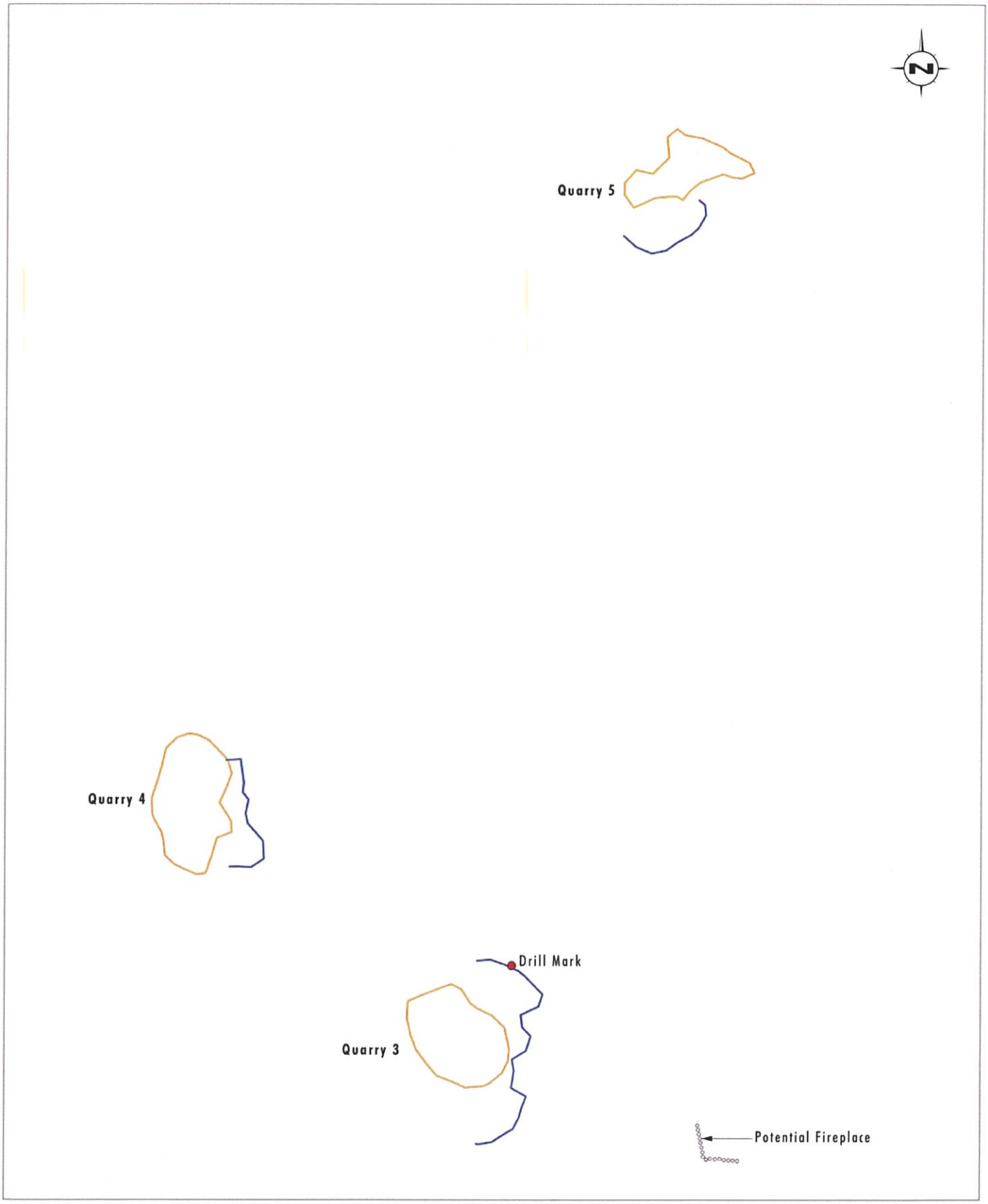


Legend

- Quarried Face
- Waste Stone Piles
- Drill Mark Location

FIGURE 2.5

Site HH14 Quarry 2

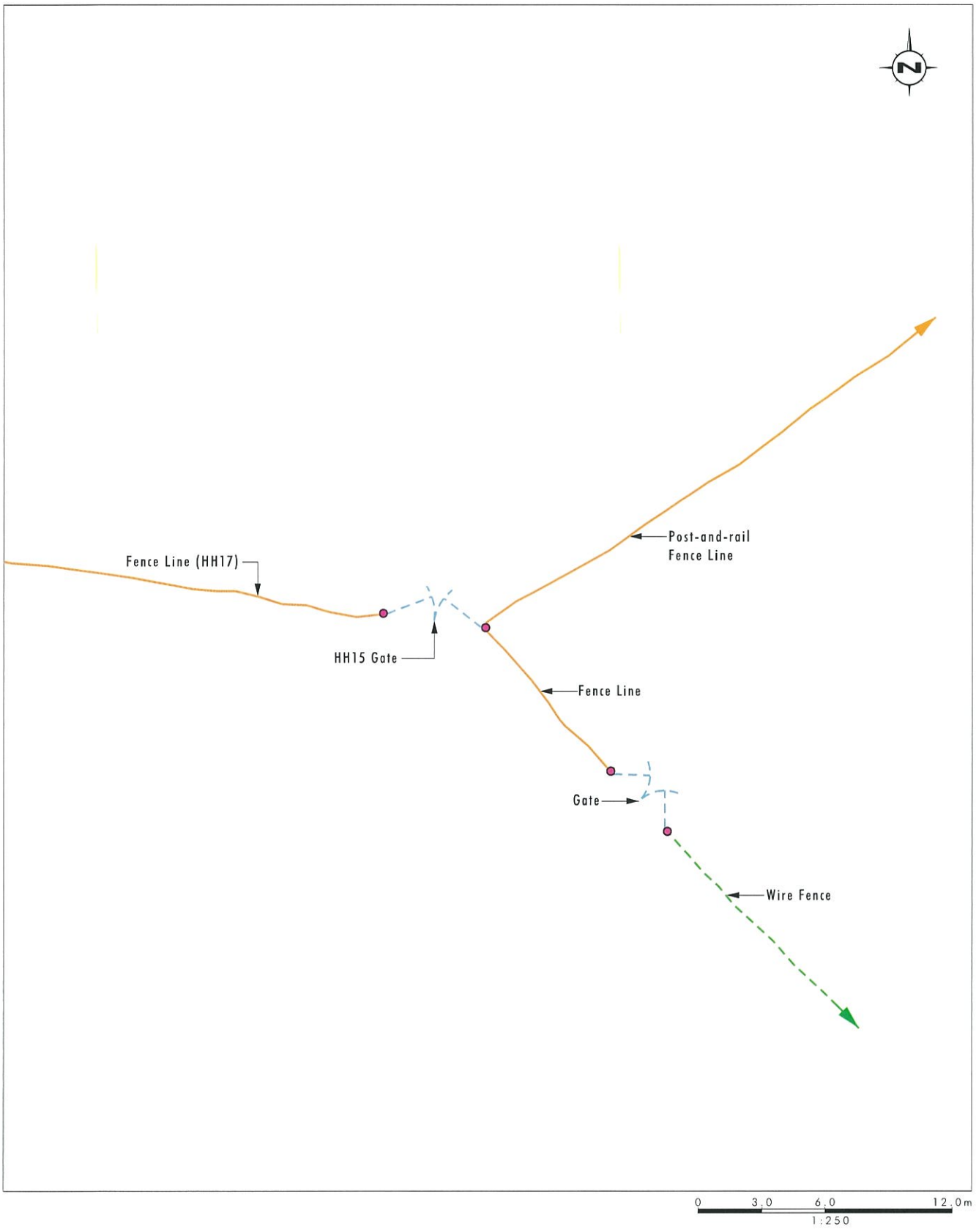


Legend

- Quarried Face
- Waste Stone Piles
- Drill Mark Location

FIGURE 2.6

Site HH14
Quarries 3, 4 & 5

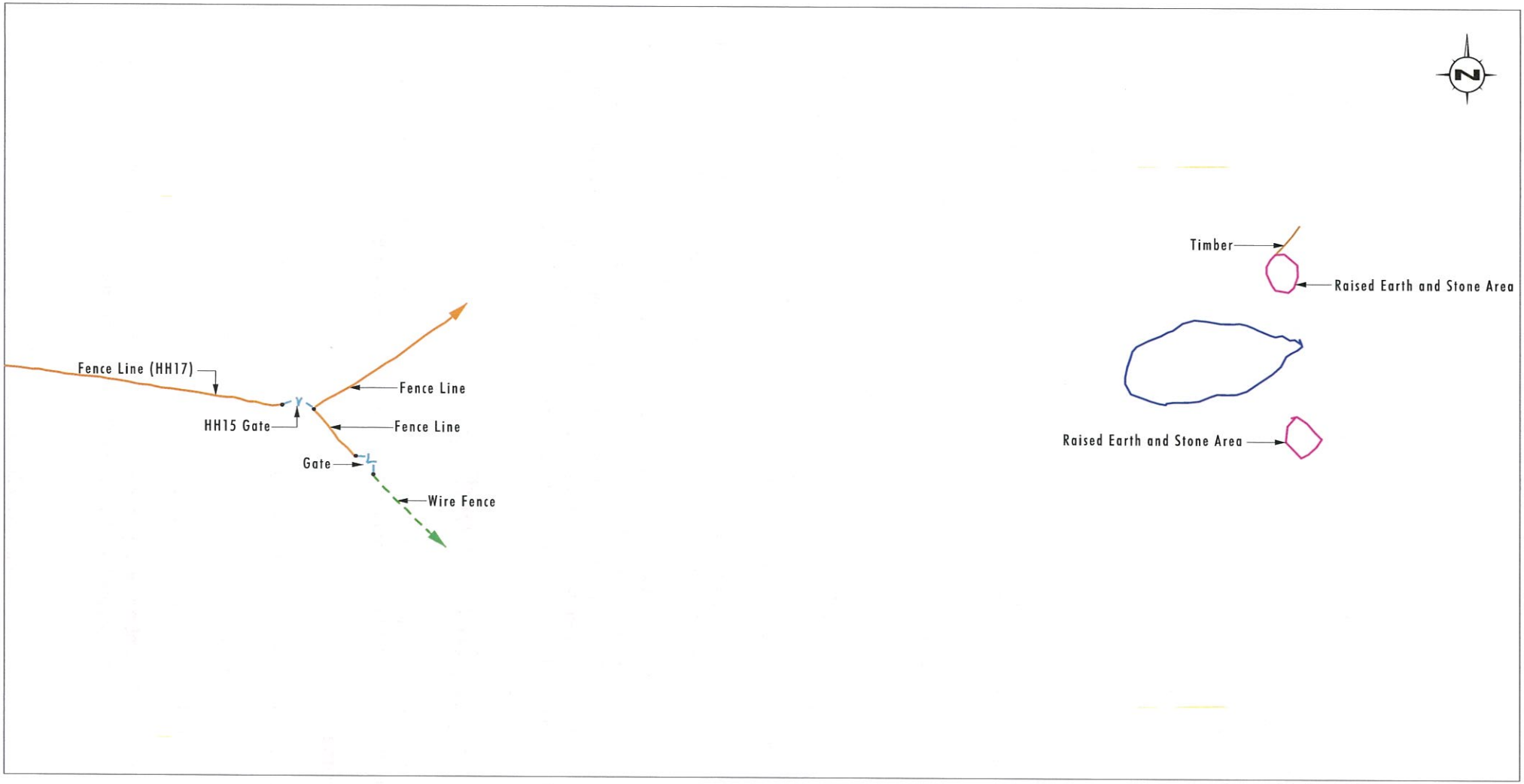


Legend

- Fence Line (HH17)
- Wire Fence
- Open Gate

FIGURE 2.7

Site HH15



Legend

- Pond
- Fence Line
- Gate
- Wire Fence
- Raised Earth and Stone Area

FIGURE 2.8

Site HH16

2.5.2 HH16 Dam Associated with TSR

A dam (Site HH16) is located to the east of gate HH15 within an area enclosed by post-and-rail fences, rough post and rail fencing constructed utilising branches and wire fencing (refer to **Figure 2.8**). The dam appears to have been created from a pond within a former chain of ponds system by constructing and strengthening banks on the north and south sides of the creek. The dam may have been associated with the reserve as a watering point for stock.

2.5.3 HH17 Post-And-One-Rail Fence

A post-and-one-rail fence (Site HH17) likely forms the fence of the reserve and also potentially the line of a stock route (**Figure 2.9**). The fence has two lines of Iowa barbed wire run through the posts or attached to it using plain wire ties below the rail. The fence was likely first built as a post-and-rail fence suitable for cattle, later modified with the addition of the line wire to make it secure for sheep and smaller animals. The extant fence line likely replaces an earlier fence along the same alignment, evidenced by the remains of previous fence posts (refer to photograph HH17-06). An area of former paling may indicate an attempt to stop the spread of rabbits or to protect stock from predators (refer to photograph HH17-05).

2.5.4 HH18 Timber Enclosure

A small triangular shaped timber built enclosure (Site HH18) is located at a return to the west of fenceline HH17 (refer to **Figure 2.10**) and may be associated with the travelling stock route (refer to photograph HH18-01). The enclosure was constructed using a double-post-and-rail fence with rails roughly stacked between pairs of posts separated from each other by a gap of one rail width (refer to photograph HH18-24).

A number of standing timber posts are scattered around the enclosure. Some are positioned as if to form gates or a stock run or entry corridor into the triangular enclosure (HH18-18).

The small timber enclosure may have been utilised to secure the drovers' horses during an overnight camp or to separate certain stock during an overnight stop. Fragments of what is likely a single ceramic demijohn were identified during the archival recording (refer to photograph HH18-11). The demijohn appears to be an import from Pearson & Co Pottery, Chesterfield potentially dating from between the mid nineteenth to mid twentieth century.

3.0 Photographic Recording

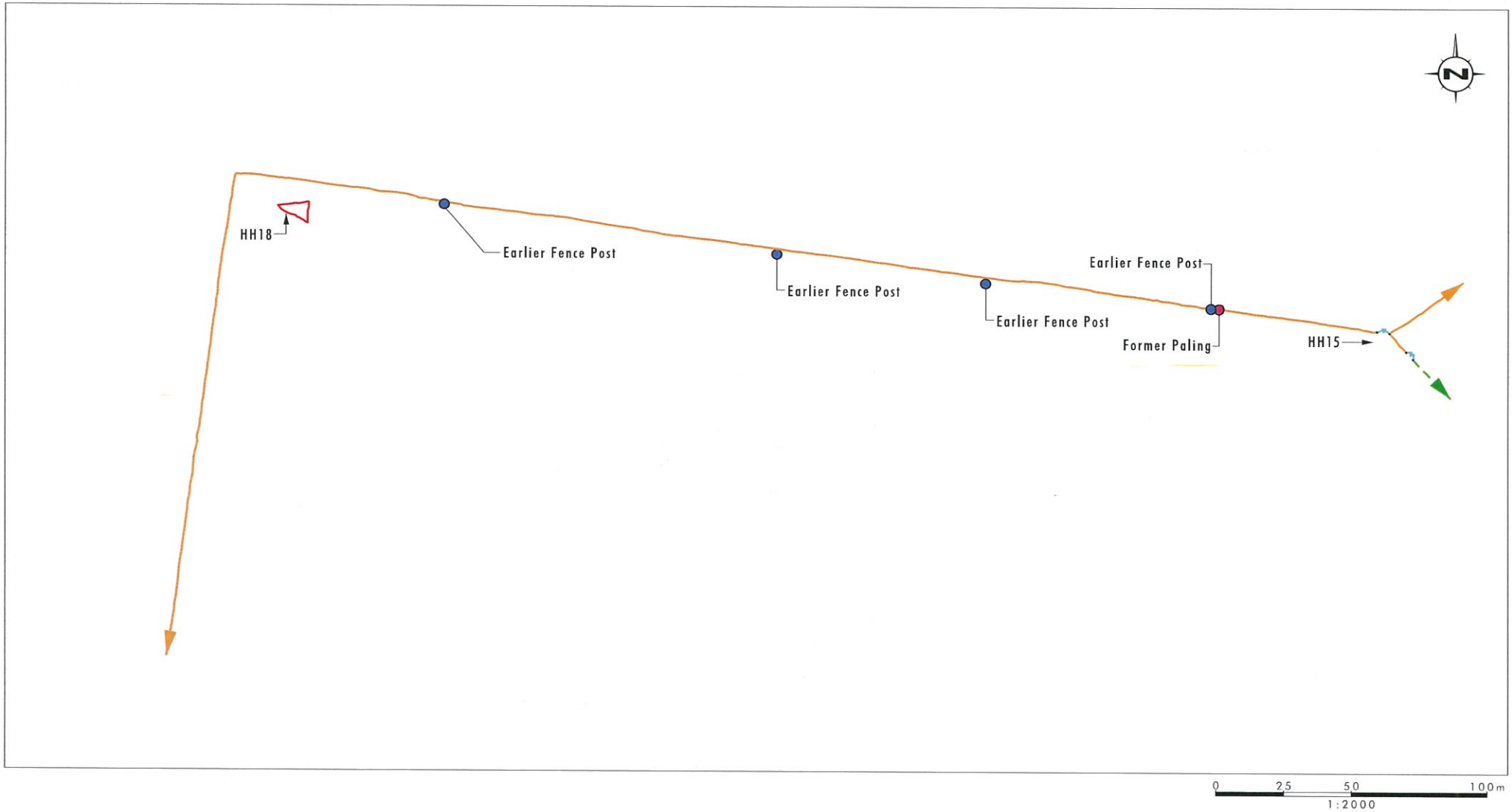
The photographic recording was undertaken in accordance with NSW Heritage Office guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture*.

3.1.1 Equipment

The recording was carried out in digital media with the following:

- Nikon D300 Digital SLR Camera with a sensor size of 12.3 MP.
- SIGMA 17-70mm F2.8-4.5 DC Macro Lens.

Photographic prints and thumbnail image sheets (proof sheets) have been printed with long-life inks on archival paper (Fujicolor Crystal Archive Paper) and are stored in archival

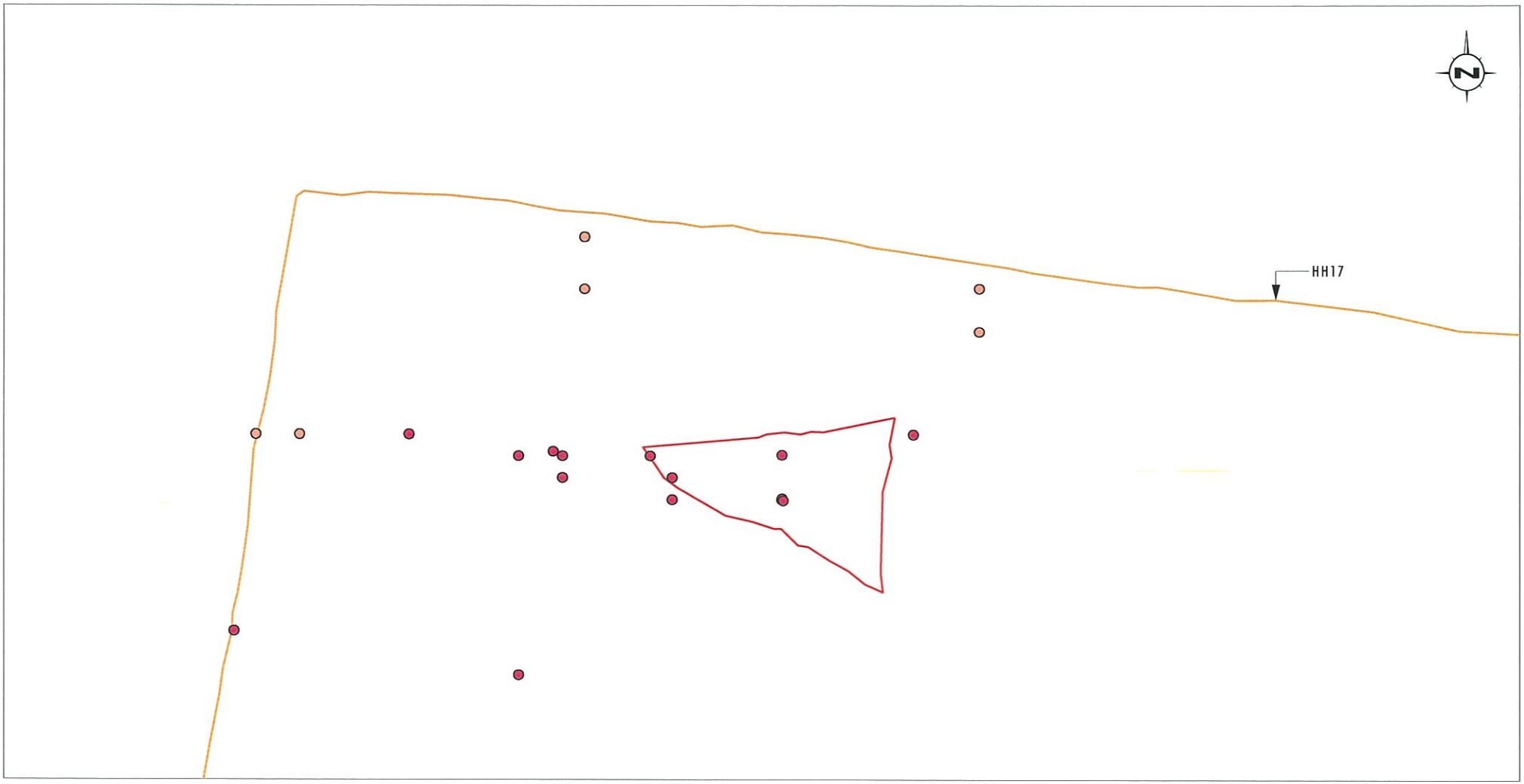


Legend

- Fence Line
- Wire Fence
- Gate
- Earlier Fence Post
- Former Paling
- Timber Enclosure (Site HH18)

FIGURE 2.9

Site HH17



Legend

- Fence Line
- Timber Enclosure
- Timber Posts
- Potential Gate Post

FIGURE 2.10

Site HH18

polypropylene sleeves. The photographic report and photographic materials are stored in an archival folder.

3.1.2 Recording

The photographic report comprises three copies of a brief report detailing information on the recording (this report) with an Appendix (**Appendix 1**).

The numbering of the photographs comprising the photographic record (**Appendix 1**) consists of the name of the site, followed by the photo number (for example HH1-01). For HH14, as five separate quarries (Q1 to Q5) were identified, the numbering has been further categorised by the quarry number (for example HH14-Q1-01). The photograph locations on **Figures A1** to **A10** are labelled as such, and correspond to the photographs and photographic catalogue sheets.

Appendix 1 includes:

- one full set of archival 6" x 4" colour prints, numbered verso and processed with archivally stable inks on archivally acceptable photographic paper, in copies of report for Department of Planning and Infrastructure and Ravensworth Operations;
- thumbnail image sheets (proof sheets) of all images;
- catalogue sheets (photographic record sheets);
- photographic plans (**Figures A1** to **A10**) showing the locations of all of the images; and
- one CD with PDFs of all of the above files and large format JPEGS of all photographs.

4.0 References

Dawson Brown and Ackert Pty Limited (DBA) (1990) *Conservation Plan for Chain of Ponds Inn, Liddell*. Report to the Electricity Commission of NSW.

Heritage Office, 2006. *Heritage Information Series: Photographic Recording of Heritage Items Using Film or Digital Capture*

Umwelt (Australia) Pty Ltd. 2009. *European heritage Assessment: Ravensworth Operations Project*. Report prepared for Ravensworth Operations Pty Ltd.

Umwelt (Australia) Pty Ltd. 2011. *Ravensworth Mine Complex Historical Heritage Management Plan*. Report prepared for Ravensworth Mine Complex.

Appendix D - Dilapidations Report for Oaklands April 2012

Dilapidations Report

for

Oaklands
Xstrata Coal
Ravensworth North Project

11-50

Date: April 2012

carste STUDIO PTY LTD
Architects and Heritage Consultants
ABN 16122394450 trading as ACN 122394450
stephen booker architect
p: (02) 4951 2578 m: 0427 432 720 f: (02) 4950 0591
e: admin@carste.com.au a: PO Box 149 Wallsend 2287

Author:
Elizabeth Evans

Reviewed:
Stephen Booker

Table of Contents

1.0 Methodology

Carste STUDIO were commissioned by Xstrata Coal, Ravensworth North Project to prepare a Dilapidations Report for Oaklands rural homestead, and the outbuildings and fences in the area of the homestead.

The property was inspected on the 8th March 2012 Stephen Booker and Elizabeth Evans of carste STUDIO pty ltd and on the 21st March 2012 by Elizabeth Evans. The interior and the exterior of the main homestead as well as identified outbuildings and water tanks were examined and photographed.

The following report schedules the condition of the fabric and records areas of deterioration and damage, for the purpose of establishing a baseline upon which any future damage can be assessed and the basis of repair can be determined. Recommendations for any required repairs will be made and measurements to be taken to minimise damage during mining operations.

Recommendations for remedial repairs are suggested at the end of each section.

For simplification this report adopts a project north . Hence the adopted orientation is:

North-East is described as **North**
North-West is described as **West**
South-East is described as **East**
South-West is described as **South**

2.0 Description of Site

The site of Oaklands includes 8 extant buildings, two houses and 6 outbuildings and a number of water tanks, stockyards and fences. The report assessed only some of these buildings and the site includes a number of recent outbuildings, concrete tanks and a small cottage which were not included in this Dilapidations Report. The study assessed the following buildings and items :

- Homestead (Building1)
- Water Tanks (Item 2 and 3)
- Outbuilding, Stable (Building 4)
- Outbuilding, Stable (Building 5)
- Outbuilding, Stable (Building 6)
- Shearing Shed and Stable as part of larger shed (Building 7)

The site forms a rural complex that records the varied uses and changes in stock from sheep to cattle. The number of stables and age of the buildings indicate a continuous use of the property for horses. The property was part of the Bowman's family pastoral holdings in the Hunter Valley. George Bowman was granted the land in the 1830s. Alexander Bowman, George Bowman's son, lived at Oaklands until he sold the property in the 1880s.[1]

The Homestead (Buildng1) is located on a rise with extensive views to the southern and northern orientation. It is surrounded by a former garden area that is partially fenced. The garden is depleted with some mature plants including May Bush, Pepper Trees and hedges of African Olive. The current homestead is an Inter-War bungalow type dating from the 1920s. It has been altered with the addition of enclosed verandahs to the south and west and a large three car garage. The earlier laundry building is extant to the east of the garage.

[1] Information provided by Umwelt (Australia) Pty Limited

The outbuildings are located to the west of the homestead. Two galvanised water tanks (Item 2 and 3) are supported on timber stands and a stable (Building 4) is located adjacent to the water tanks. On the same fence line to the west are located two more outbuildings that were used as stables (Building 5 and 6). These outbuildings are similarly constructed with timber frames of bush timber posts and machined timber frame. The Stable (Building 5) is clad with circular sawn timber slabs let into the ground and galvanised iron roof. The floors are variable including dirt, brick paved and sandstone flagging. The Stable (Building 6) is clad with both circular sawn slabs and corrugated iron.

The large outbuilding (Building 7) to the north-west of the site has been altered with extensive additions. The earlier section of this shed as indicated in the Site plan is the subject of this report (Section 13 and 14). The fences in the study area include circular sawn slabs, timber post and rail and timber post and wire fences and have been assessed in detail in the Schedule.

The site is assessed as a significant rural complex and a significant historical record of the European settlement of the Hunter Valley associated with the Bowman family. The Stable and Shearing Shed (Building 7) is a significant item within the rural complex of Oaklands. The complex as a whole is important as a part of this cultural significance and all those buildings and items assessed in this report should be protected and preserved.

3.0 Location and Site Plans

Figure 1 Location Plan
source: Google Maps

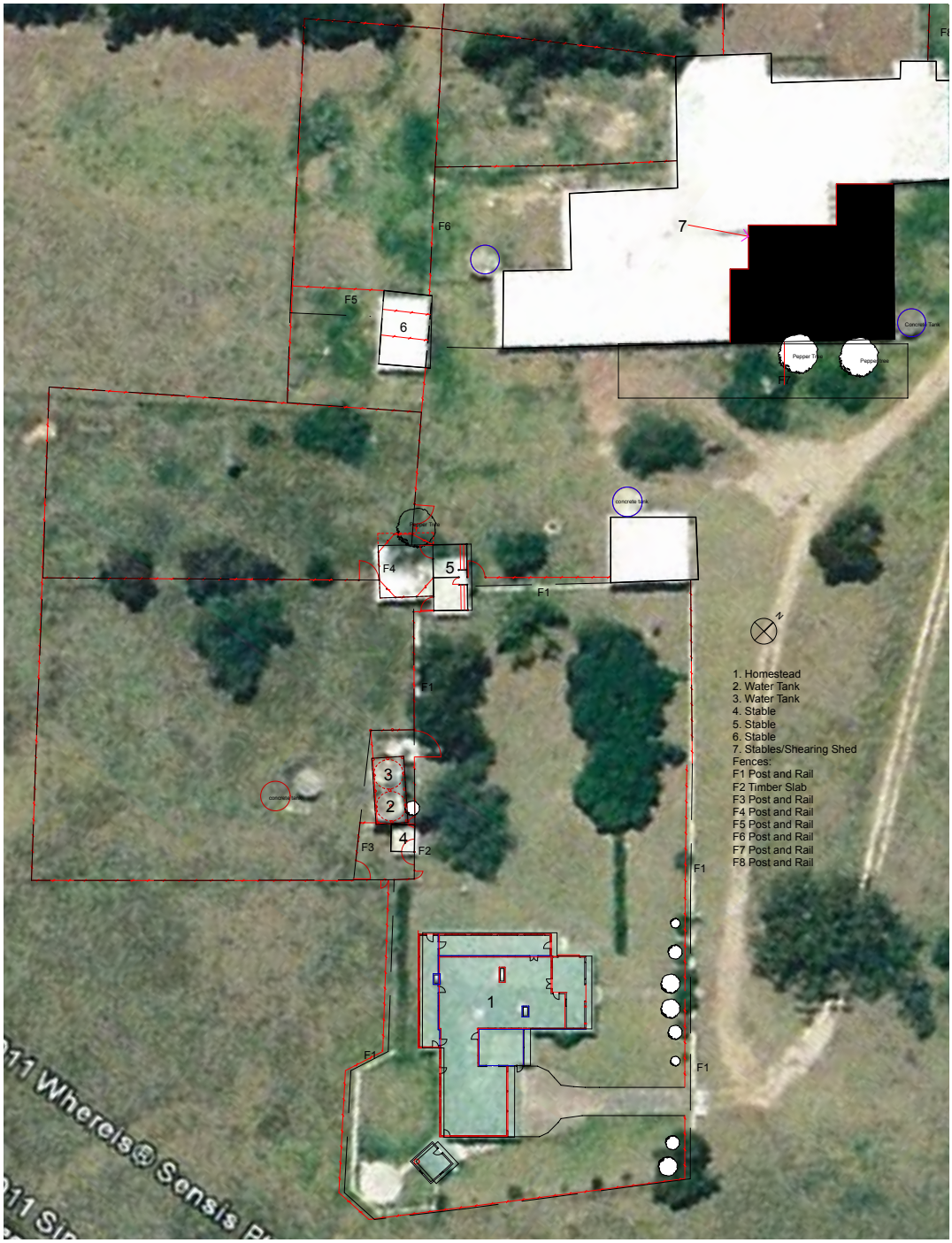


Figure 2 Site plan showing subject buildings overlaid on map.
source: Google maps

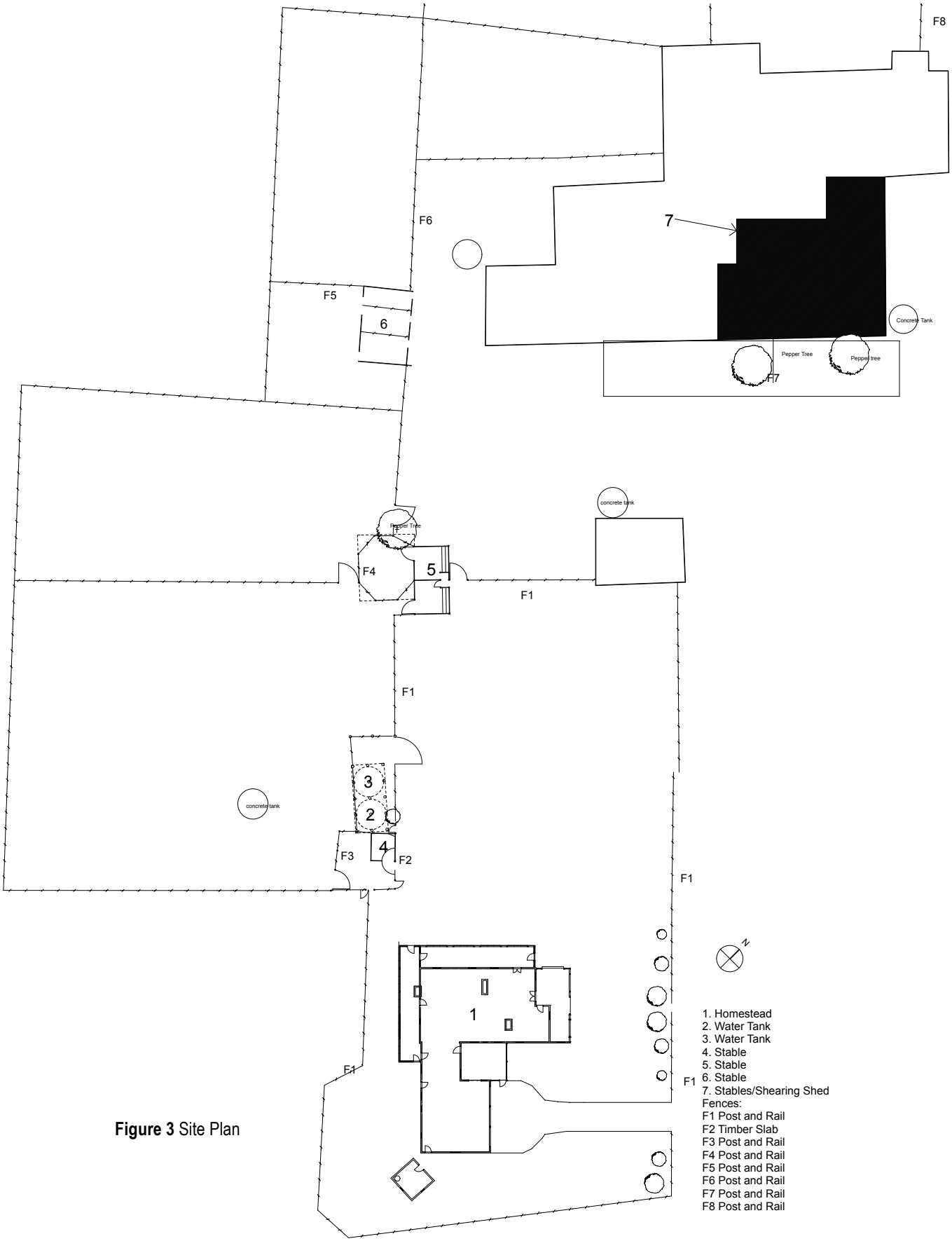


Figure 3 Site Plan

b
Used in the Schedules that follow:

Architrave	A moulding around the exterior of an arch or a doorway/door frame.
Cornice	The upper meeting of a wall with a ceiling, trimmed with an element referred to as a cornice to conceal the junction. Often decorative in character.
DH	Double hung
D15	Door number 15
G.I.	Galvanised Iron/ Galvanised Steel
Girt	Horizontal supporting member for wall cladding particularly in industrial buildings.
LH / LHS	Left hand / Left hand side
Log and beam	Equivalent to post and beam or post and lintel, with the post being of a roughly hewn timber log, not having been milled to a rectilinear shape. A type of construction characterized by the use of vertical columns, posts and a horizontal beam or lintel, to carry a load over an opening, in contrast to structural systems employing arches or vaults.
Purlin	Timber or steel structural member laid over the principal supporting rafters of a roof to support the roof sheeting or supporting battens for the roof cladding material.
Rafter	A roof beam supported by the walls and projecting in the plane of the roof and bearing on equivalent members on the opposing side of the roof or at a ridge board, located at the apex of the roof.
RH / RHS	Right hand / Right hand side
Sash balance	The mechanism in a double hung window to counter balance the movable window sashes from movement once they have been moved within the window frame.
Scotia	A concave profiled moulding
Skillion	A mono-pitched roof
T and G	Tongue and grooved
T.S	Timber slab. Includes split and machined slabs.
Under purlins	The principal member supporting a purlin in a roof structure. May also be a beam or a lintel in some structural arrangements
V-jointed boards	A lining board that has both long sides chamfered, so that when abutting a like chamfered board, the junction forms a “v” shaped groove.
Whisker cracking	Fine cracking in a concrete slab, generally diagonally across the corner of a slab.
W15	Window number 15

4.0 Fabric Assessment: Homestead- Building 1

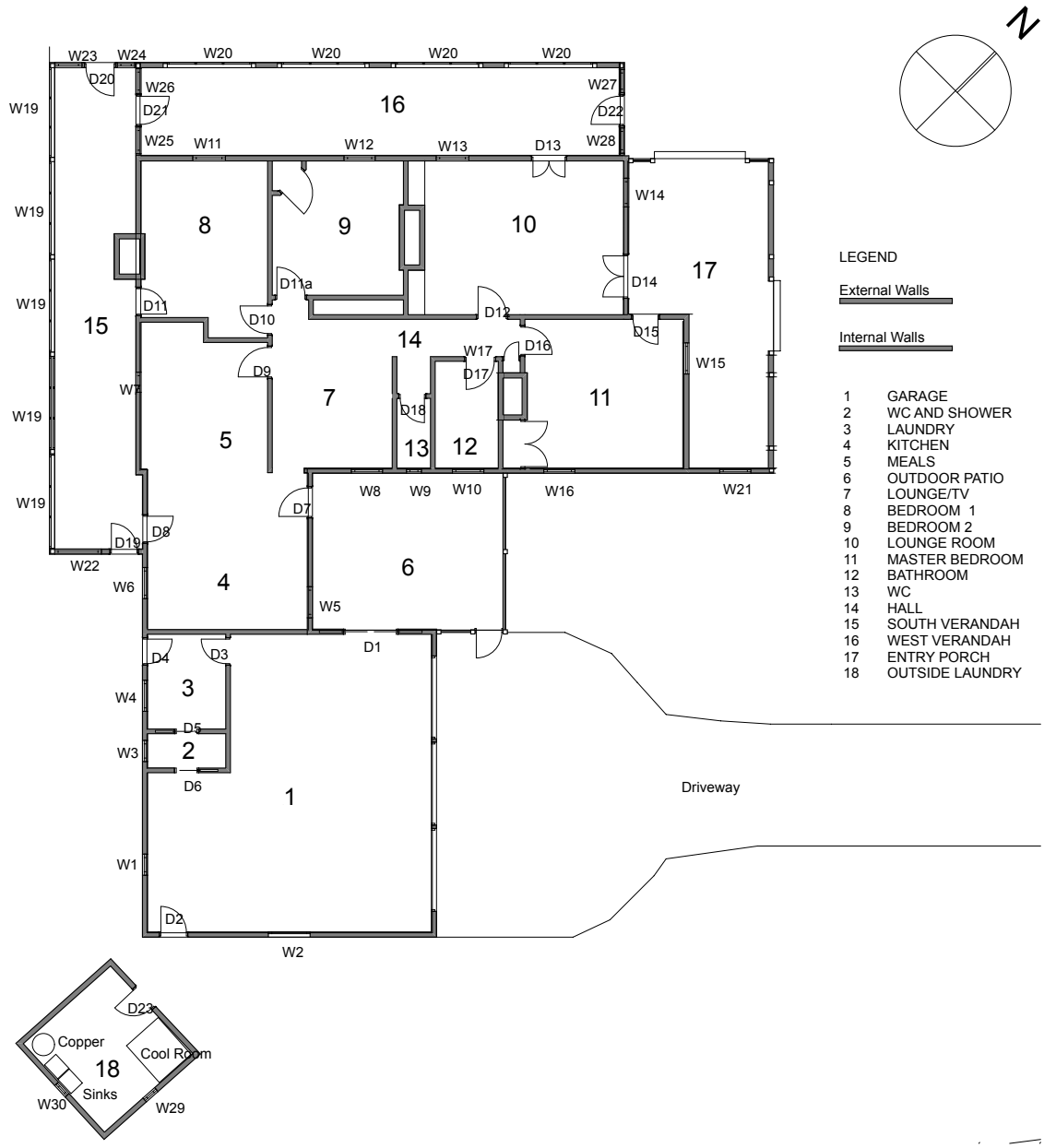


Figure 4
Homestead Floor Plan
Source: carste STUDIO

Building 1	**Homestead**	Inspection date: 8/03/2012

Room No.	Room Name	Type / Finish	Comments	photograph
1	**Garage** Orientation /Element name		Generally good condition with some wall cracking.	
	Floor	concrete	Good condition. Smooth trowel with surface cracks.	3460 jpg
	Wall North	Plasterboard painted Colorbond Roller Doors	3 roller doors. Horizontal crack in NE corner. Horizontal crack along setting of plasterboard.	3463jpg
	Wall East	As above	Door to exterior is jammed. Hollow Core door required to be replaced by external door.	3460jpg
	Wall South	As above	Damage to corner of room in lower corner of WC.	3461jpg
	Ceiling	Plasterboard	Good condition. Cracks on setting Line. Crack in SE corner.	3462jpg
	Cornice	Plasterboard 90mm Scotia	Good condition. Crack in SE corner.	
	Fixtures	Retractable Clothes Line	Clothes Line located in recess beside laundry and WC.	3461jpg

Figure 3463 jpg

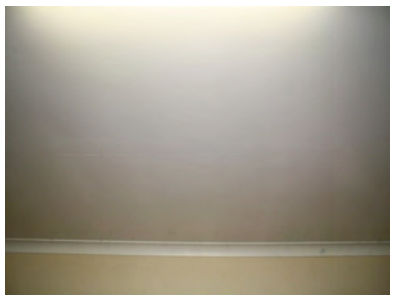


Figure 3462jpg

Room No.	Room Name	Type / Finish	Comments	photograph
2	**WC and Shower** Orientation /Element name		Generally satisfactory condition	
	Floor	Concrete. Ceramic Tiled finish.	Good condition	
	Wall North	Fibre Cement. Ceramic Tiled Skirting	Good condition	
	Wall East	As Above	Sliding door functioning	
	Wall South	Wall Tiles and Fibre Cement	Good condition	
	Wall West	Fibre Cement. Ceramic Tiled Skirting	Sliding Door functioning	
	Ceiling	Plasterboard. Painted in gloss finish.	Ceiling fan requires new grille	3465jpg
	Cornice	Scotia 90mm	Crack in SW corner.	
	Fixtures	WC	Plastic Cistern. Operable	3464jpg
		Shower	Sliding shower screen. Aluminium powder coated.Operable.	3466jpg

Figure 3465jpg

Room No.	Room Name	Type / Finish	Comments	photograph
3	**Laundry** Orientation /Element name		Generally satisfactory condition	
	Floor	Concrete. Ceramic tiled finish.	Good condition	
	Wall North	Fibre Cement. Ceramic tiled skirting	Built in cupboard.	
	Wall East	As Above	Paper delaminating in wall lining from joint over tub.	3467jpg
	Wall South	As Above.	Crack over door. Setting cracks in fibre cement. External hollow core door showing deterioration. Door should be replaced with new external door.	
	Wall West	As Above		
	Ceiling	Plasterboard. Painted in gloss finish.	Ceiling fan requires new grille	
	Cornice	Scotia 90mm	Crack in SW corner.	3467jpg 3468jpg
	Fixtures	Hot Water Service		

Figure 3468jpg

Figure 3467jpg

Room No.	Room Name	Type / Finish	Comments	photograph
4	**Kitchen** Orientation /Element name		Generally good condition	
	Floor	Timber. Sheet vinyl finish	Good condition	
	Wall North	Plasterboard painted. 150 mm skirting.	100mm high skirting. Crack in NW corner adjacent to D7. W5 Counter weight missing on sash.	
	Wall South	Plasterboard painted. Tiled splashback	Crack over door head (D8) on east. Splashback sound. Requires partial regrouting.	3474jpg 3475jpg
	Wall East	As above	Kitchen bench and cupboards in good condition.	
	Wall West	As above		
	Ceiling	Plasterboard painted flat finish.	Ceiling Fan, Exhaust fan, AC Register. Small crack adjacent to on west.	
	Cornice	Scotia 90mm		
	Fixtures	Kitchen cupboards	Sound condition	3471jpg
		Fan	Good condition	
		Air conditioning grille		
		Exhaust fan		

Figure 3474jpg

Room No.	Room Name	Type / Finish	Comments	photograph
5	**Meals** Orientation /Element name		Generally good condition. Older section of house. Curtains and pelmets in good condition.	
	Floor	Timber. Sheet vinyl finish	Good condition	
	Wall North	Sheet linings painted. 150 mm skirting.	Picture rail at door head height. Wall mounted light.	3476jpg
	Wall South	As above	Picture rail. Vertical cover moulds under windows.	
	Wall East	As above	Picture Rail	
	Wall West	As above	Picture Rail. Cover moulds at corner.	
	Ceiling	Plasterboard painted flat finish.	Central pendant light	3477jpg
	Cornice	Scotia 90mm	Good condition.	

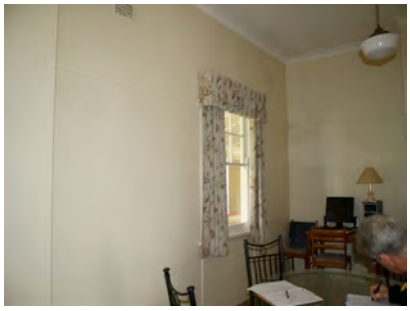


Figure 3476jpg

Room No.	Room Name	Type / Finish	Comments	photograph
6	**Outdoor screened area** Orientation /Element name		Skillion roof addition to house. Generally satisfactory condition with some cracking in quarry tiles and rotting of timber posts at bases.	
	Floor	Concrete slab with Quarry tiles	Cracking in places. Crack along north/south located 5 rows from east. Diagonal Crack located 8 rows to south.	3481jpg 3482jpg
	Wall North	Timber frame and ledge.	Glass at lower section and shade cloth at upper section. Rotting of timber columns at base.	3478jpg
	Wall South	Weatherboards	Smaller profile than western wall.	
	Wall East	As for north wall in part. Splayed weatherboards in part.	Rotting of timber columns at base.	3483jpg
	Wall West	Splayed Weatherboards	Position of former door to TV room evident in wall fabric.	3479jpg
	Ceiling	Fibre cement painted	Moulded joints.	
	Cornice	Timber quad painted	Good condition.	
	Fixtures	BBQ and brick base	Sound	3480jpg
		Hose tap on standpipe	Capstan missing.	3479jpg
	Comments		No subfloor ventilation on south due to addition of concrete slab. Check for termites and allow for ventilation if required.	3484jpg

Figure 3483jpg

Figure 3482jpg

Figure 3481jpg

Room No.	Room Name	Type / Finish	Comments	photograph
7	**Lounge/TV** Orientation /Element name		Generally good condition. Older section of house. Curtains and pelmets and carpet in good condition.	
	Floor	Timber. Carpet finish	Good condition	
	Wall North	Sheet lining. Painted	Picture rail. Crack in north-west corner below picture rail. Surface mounted cables in north-east corner.	
	Wall South	As above	Picture rail	
	Wall East	As above	Picture rail. Vertical crack adjacent to doorway. Evidence of former door in location of W8	3485jpg 3487jpg 3486jpg
	Wall West		Cupboards. Good condition	3488jpg
	Skirting	Timber skirting. Painted	200mm high generally.	
	Ceiling	Plasterboard painted with flat finish.	Double fluorescent light. North/south crack to west of light. Bubble in finish.	3489jpg 3486jg
	Cornice	90mm scotia	sound	

Figure 3485jpg

Figure 3487jpg

Room No.	Room Name	Type / Finish	Comments	photograph
8	**Bedroom** Orientation /Element name		Generally good condition. Older section of house. Curtains and pelmets and carpet in good condition.	
	Floor	Timber. Carpet finish		
	Wall North	Sheet lining. Painted	Wide architraves. 25mm scotia to internal corners.	3491jpg
	Wall South	As above	Fireplace enclosed in timber mantle.	3492jpg
	Wall East	As above	Timber cover mould to external corner. Crack in skirting adjacent to door.	
	Wall West	As above	Cover mould to joint under window.	3494jpg
	Skirting	Timber skirting. Painted	200mm high generally.	
	Ceiling	Plasterboard painted with flat finish.	Decorative mould to perimeter. Single pendant light with cowl luminate.	
	Cornice	90mm scotia		
	Chimney Piece		Timber shelf with fluted grooves.	3492jpg

Figure 3492jpg

Room No.	Room Name	Type / Finish	Comments	photograph
9	**Bedroom** Orientation /Element name		Generally good condition. Curtains and carpet in good condition.	
	Floor	Timber. Carpet finish	Good condition	
	Wall North	Sheet lining. Painted	Picture rails. Plaster is weak at the back of fireplace.	3496jpg
	Wall South	As above	Picture rails. Corner cupboard in timber boarding. Former shelf fixing holes.	3497jpg
	Wall East	As above	Picture rails. Solid Core panelled door painted.	3496jpg
	Wall West	As above. Cover moulds under west windows	Picture rails.	
	Skirting	Timber skirting. Painted	200mm high generally.	
	Ceiling	Fibrous plaster. Painted with flat finish.	Surface mounted pendant light.	3495jpg
	Cornice	75mm scotia timber. Painted		
	Fixtures	Mirrored cupboard door	Bevelled edge. Minor surface damage at base.	

Figure 3496jpg

Room No.	Room Name	Type / Finish	Comments	photograph
10	**Lounge Room** Orientation /Element name		Generally good condition. Curtains and carpet in good condition. Has been refurbished recently.	
	Floor	Timber. Carpet finish	Good condition	
		Quarry tile hearth at fireplace.	Good condition	3499jpg
	Wall North	Sheet lining. Painted	Picture rail. Cover moulds to corners	3500jpg
	Wall South	As above. Fireplace plaster.	Picture rail. Decorative chimney piece. Shelves adjacent to fireplace.	3498jpg 3499jpg
	Wall East	As above	Picture rail. Wall damage at 800mm above door head. Exposed cable.	3499jpg 3501jpg
	Wall West	As above.	Picture rail. Repair evident over door head. Crack located centrally in wall. Some marking on wall in northern section.	3498jpg
	Skirting	Timber skirting. Painted	200mm high generally.	3499jpg
	Ceiling	Fibre plaster. Painted with flat finish.	Coffered pattern of mouldings. Pendant light 3 luminaires.	3499jpg
	Cornice	Fibre plaster cornice.	Fluted profile. Crack in western section.	
	Fixtures	Combustion heater AC Register	 Partly dislodged AC register.	3499jpg
		Picture wall light	North wall	

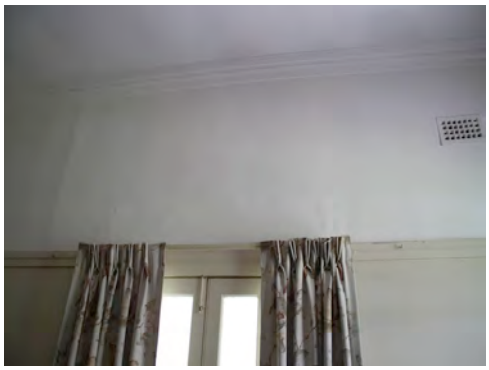


Figure 3501jpg

Room No.	Room Name	Type / Finish	Comments	photograph
11	**Bedroom** Orientation /Element name		Generally good condition. Curtains and carpet in good condition.	
	Floor	Timber. Carpet finish	Good condition	
	Wall North	Sheet lining. Painted	Picture rail. Cover beads under window sill.	3502jpg
	Wall South	As above. Fireplace plaster.	Picture rail. Fireplace covered in. Cupboard adjacent to fireplace. Crack on south-east door and damaged inner door face of cupboard.	3503jpg
	Wall East	As above	Picture rail.	3503jpg
	Wall West	As above.	Picture rail.	3502jpg
	Skirting	Timber skirting. Painted	200mm high generally.	
	Ceiling	Sheet Fibre plaster. Painted with flat finish.	Paint cracking in southern section.	
	Cornice	75mm Scotia. Painted		
	Fixtures	AC Register		
		Fan light	Functioning	3502jpg

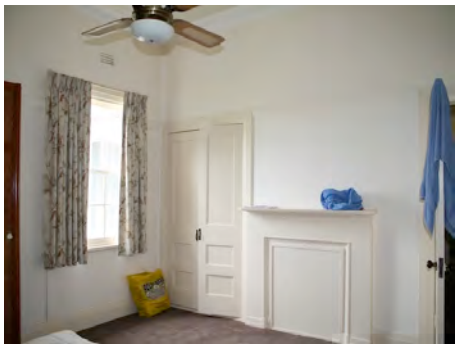


Figure 3503jpg

Room No.	Room Name	Type / Finish	Comments	photograph
12	**Bathroom** Orientation /Element name		Generally good condition. Curtains and tiles in good condition.	
	Floor	Likely to be timber or compressed sheet. Tile finish		
	Wall North	Plasterboard. Ceramic Tile	Corner crack to cover mould in north-east corner.	3508jpg
	Wall South	As above	Ceramic tile to shower and over bath. Tiles marked at high level in central location.	
	Wall East	As above		3507jpg
	Wall West	As above. Glazed highlight		3506jpg
	Ceiling	Plasterboard. Painted	Crack north/south in centre. Simple cowl light fitting.	
	Cornice	90mm Scotia. Painted	Crack in east section of cornice.	
	Fixtures	Vanity basin. Bench. Acrylic top and basin.	Good condition	
		Exhaust Fan		
		Bath. Shower	Cast Iron bath. Good condition	3507jpg
	Comment		Sound with exception of crack in north-east corner. Fixtures are serviceable.	

Figure 3507jpg

Room No.	Room Name	Type / Finish	Comments	photograph
13	**WC** Orientation /Element name		Generally good condition. Curtains and tiles in good condition.	
	Floor	Likely to be timber or compressed sheet. Tile finish		
	Wall North	Plasterboard. Ceramic tile skirting	Corner scotia moulds	
	Wall South	As above	As above	
	Wall East	As above	As above	3509jpg
	Wall West	As above	As above	
	Skirting	Ceramic Tile skirting		
	Ceiling	Plasterboard. Painted	Manhole in entrance area. Some cracking over door.	3512jpg
	Cornice	90mm Scotia. Painted	Crack in east section of cornice.	
	Fixtures	Vanity basin. Bench. Acrylic top and basin.	Good condition	3509jpg
		Exhaust Fan	Non- operational.	
		Bath. Shower	Cast Iron bath. Good condition	
		WC	New fixture.	
	Comment		Fixtures are serviceable with exception of exhaust fan. Good condition with exception of fan and crack in ceiling.	

Room No.	Room Name	Type / Finish	Comments	photograph
14	**Hall** Orientation /Element name		Generally good condition.	
	Floor	Timber. Carpet Finish.	Carpet in good condition	3510jpg
	Wall North	Plasterboard. Painted	Good condition	3510jpg
	Wall South	Open		3511jpg
	Wall East	Timber sheet v joint. Painted	Timber Sheet below picture rail height. Plasterboard above.	
	Wall West		AC thermostat.	
	Skirting	200mm Timber skirting. Painted		
	Ceiling	Plasterboard. Painted	Good condition	
	Cornice	90mm Scotia. Painted		
	Comment	Smoke detector	Batteries required to be changed.	

Room No.	Room Name	Type / Finish	Comments	photograph
15	**South Verandah** Orientation /Element name		Generally good condition. South verandah appears to be an addition.	
	Floor	Timber. 65mm wide T&G board. Clear finish.	Good condition.	3515jpg
	Wall North	Splayed and chamfered weatherboards. Painted.	Wall vents partially covered by ceiling.	3516jpg
	Wall South	Splayed and chamfered weatherboards. Painted. Aluminium sliding windows over.	Good condition	3516jpg
	Wall East	Splayed and chamfered weatherboards. Painted.	Good condition	3513pg 3514jpg 3515jpg
	Wall West	Splayed and chamfered weatherboards. Painted.	Good condition	3516jpg
	Ceiling	Plywood or masonite	Cover battens. Painted gloss.	3517jpg
	Fixtures	Chimney	Rendered masonry. Painted.	3517jpg
	Comment		Minimal artificial lighting. One light in south-east corner. Floors have good fall outwards.	

Figure 3516jpg

Figure 3517jpg

Room No.	Room Name	Type / Finish	Comments	photograph
16	**West Verandah** Orientation /Element name		Generally good condition.	
	Floor	Timber. 65mm wide T&G board. Unfinished.	Previous vinyl finish removed.	3518jpg
	Wall North	Splayed and chamfered weatherboards to lower level. Windows with patterned glass to upper level.	Wall vents partially covered by ceiling.	3518jpg
	Wall South	As above	Good condition	3519jpg
	Wall East	Splayed and chamfered weatherboards. Painted.	Good condition	3519jpg
	Wall West	Splayed and chamfered weatherboards. Painted. Timber sliding windows over.	Good condition	3518jpg
	Ceiling	Plywood or masonite	Cover battens. Painted gloss.	3519jpg
	Fixtures	Wood box	Located in north-west corner.	3518jpg
			2 wall lights in east wall. One missing diffuser cowl.	3519jpg
	Comment		Good condition. Floor has good fall outwards.	

Figure 3519jpg

Room No.	Room Name	Type / Finish	Comments	photograph
17	**Entry Porch** Orientation /Element name		Satisfactory condition.	
	Floor	Timber. T&G board. Unfinished.	Require sanding and oil finish. Some dropping in level in north-west corner. Floor fascias need repair in on north-west face.	3524jpg
	Wall North	Splayed and chamfered weatherboards to lower balustrade level.	Base moulding missing on outer face. Outer floor needs repair. Step requires levelling and new repointing with lime rich mortar.	3521jpg
	Wall South	Splayed and chamfered weatherboards. Painted.	Good condition	3523jpg
	Wall East	Splayed and chamfered weatherboards. Painted.	Good condition	3521jpg
	Wall West	Open with posts and lattice.	Column base moulding missing on south and north. Brick step needs repointing and repair.	3530jpg 3524jpg
	Ceiling	Plywood or Masonite sheet.	Cover battens in grid pattern. Painted gloss. Wasp activity and mud nests. Single incandescent light.	3522jpg
	Cornice	Timber. Painted.	Built up timber cornice.	3522jpg
	Fixtures	Hot Water Service	Located in south-east corner	3521jpg
			2 wall lights in east wall. One missing diffuser cowl.	
	Comment		Requires cleaning, painting, floor sanding and oiling. Repair steps. Timber rotting in north-east corner.	

Figure 3530jpg

Figure 3524jpg

Room No.	Room Name	Type / Finish	Comments	photograph
16	**External Laundry** Orientation /Element name		Satisfactory condition.	
	Floor	Timber T&G. Unfinished.		
	Wall North internal	Compressed fibre sheet. Unpainted	Paint compressed fibre and remove and replace with fibre cement panel if damaged or fibres exposed.	3447jpg
	Wall North external	Compressed fibre sheet. Painted	As above	3437jpg external
	Wall South internal	Compressed fibre sheet. Unpainted	As above	3440jpg
	Wall South external	Compressed fibre sheet. Painted	As above	3438jpg external
	Wall East internal	Compressed fibre sheet. Unpainted	As above	
	Wall East external	Compressed fibre sheet. Painted	As above	3437jpg external
	Wall West internal	Compressed fibre sheet. Unpainted	As above	
	Wall West external	Compressed fibre sheet. Unpainted	As above	3439jpg external
	Ceiling	Compressed fibre sheet. Unpainted	As above	3441jpg
	Roof	Galvanised Iron. Painted	Check all fixing regularly and repaint.	3438jpg
	Gutters	Galvanised Iron. Quad. Painted	Check watertightness and replace if required. Repaint.	3438jpg
	Fixtures	Laundry sinks (number 2)	Cast iron on pedestals. Conserve.	3440jpg
		Cool room		3440jpg
		HWS		3441jpg
		Pump		3443jpg
		Copper	Set in partially rendered brick structure. Conserve copper in situ.	3442jpg 3440jpg

Figure 3438jpg

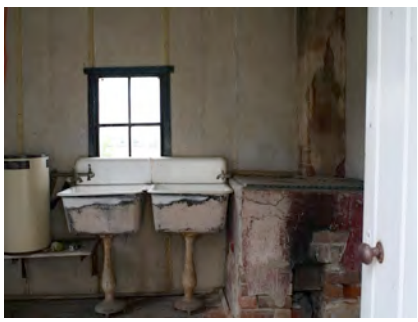


Figure 3440jpg

Room No.	Room Name	Type / Finish	Comments	photograph
	Window Schedule **Element name**		Windows in generally good condition. Some sash cord and counter weights missing.	
	W1	Aluminium/ Powder coated	DH. 8 panes per sash. Vertical Blind.	3455jpg
	W2	Aluminium/ Powder Coated	DH. 8 panes per sash. Vertical blind. Vertical Blind	3460jpg
	W3	Aluminium/ Powder Coated	Sliding window. Obscure glass.	3455jpg
	W4	Aluminium/ Powder Coated	DH. 6 panes per sash.	3455jpg
	W5	Timber/ Painted	W5 Counter weight missing on sash. DH with clear glass and 6 panes to each sash. Curtains	3470jpg 3480jpg
	W6	Timber/ Painted	W6 Counter weight missing on sash. DH with clear glass and 6 panes to each sash. Curtains	3469jpg
	W7	Timber/ Painted	DH timber. 6 panes to upper sash and 1 pane to lower sash. Curtains	3476jpg
	W8	Timber/ Painted	DH. 4 panes per sash. Operable and sound. Curtains Evidence of location of earlier door opening.	3479jpg
	W9	Timber/ Painted	DH. 4 panes per sash. Window in good condition. Curtains in good condition.	3509jpg 3479jpg
	W10	Timber/ Painted	DH. 6 panes per sash. Textured Glass. Window missing one sash cord. Curtains in good condition.	3507jpg 3479jpg
	W11	Timber/ Painted	DH. 6 panes per sash. Curtains	3496jpg
	W12	Timber/ Painted	DH. 6 panes per sash. Broken sash cords. Curtains	3496jpg
	W13	Timber/ Painted	DH. 6 panes per sash. Cover moulds to window	3498jpg
	W14	Timber/ Painted	DH. 1 pane per sash. Faux beading to appear as 2 panes.	3500jpg 3523jpg
	W15	Timber/ Painted	DH. 6 panes per sash. Fly screen. Curtains in good condition.	3502jpg
	W16	Timber/ Painted	DH. 6 panes per sash. Cover beads under window sill. Window missing one sash cord. Curtains in good condition.	3503jpg
	W17	Timber/ Painted	Fixed. Glazed highlight. Textured Glass. 10 panes.	3506jpg
	W19	Aluminium/ Powder Coated	Aluminium sliding windows. Enamelled finish. Vertical louvre drapes.	3516jpg
	W20	Timber/ Painted	4 Sets of three sliding windows. Now fixed windows. Textured glass. Fixings for previous shutters evident.	3518jpg
	W21	Timber/ Painted	DH. 6 panes per sash. No sash cords.	3521jpg
	W22	Aluminium/ Powder	Fixed Window.	3451jpg

		Coated		
	W23	Aluminium/ Powder Coated	Fixed Window.	3454jpg
	W24	Aluminium/ Powder Coated	Fixed Window.	3454jpg
	W25	Timber/ Painted	Fixed. 2 panes. Textured Glass.	3519jpg
	W26	Timber/ Painted	Fixed. 2 panes. Textured Glass.	3519jpg
	W27	Timber/ Painted	Fixed. 2 panes. Textured Glass.	3518jpg
	W28	Timber/ Painted	Fixed. 2 panes. Textured Glass.	3518jpg
	W29	Timber/ Painted	4 panes. Clear glass	3444jpg
	W30	Timber/ Painted	4 panes. Clear glass.	3438jpg

Room No.	Room Name	Type / Finish	Comments	photograph
	Door Schedule Element name			
	D1	Sliding door to garage	Hollow core painted. Sound condition and functioning.	3480jpg
	D2	Hollow Core external door.	Door jammed. Replace with new solid core door.	3460jpg
	D3	Hollow Core external door.	Door operable. Replace with solid core door when required.	
	D4	Hollow Core external door.	Replace with solid core door when required.	3448jpg
	D5	Sliding door	Operable	
	D6	Sliding door	Operable	
	D7	Timber door	Door half glazed. 3 lower timber panels. 9 upper panels of textured glass. Damage to outer face under lock. Crack over doorhead	3474jpg 3475jpg
	D8	Timber door	Half glass. 9 upper panels of textured glass.	
	D9	Timber door	Timber – 3 panels. Timber knob.	3477jpg
	D10	Timber door	Timber – 3 panels. Timber knobs and escutcheons.	3491jpg
	D11	Timber door	Door half glass to upper panel (curtain) and timber panel to lower half. Timber knobs and bronze escutcheons.	3490jpg 3492jpg
	D11a	Timber door	Timber – 3 panels. Timber knobs and escutcheons.	
	D12	Timber door	Timber – 3 panels. Timber knobs and escutcheons.	3499jpg
	D13	Screen doors to French doors.	Damaged gauze. Curtain	3501jpg
	D14	Screen doors to French doors.	Damaged gauze. Curtain	3523jpg
	D15	Timber door with textured glass panes. Screen door	Door to verandah. Glazed. Curtains in good condition.	3502jpg 3523jpg
	D16	Timber door	Timber – 3 panels. Timber knobs and escutcheons.	
	D17	Timber door	Timber – 3 panels. Timber knobs and escutcheons.	3506jpg
	D18	Timber door	Timber- 3 panels. Timber Painted. Escutcheon missing.	3509jpg
	D19	Timber door	Upper panel acrylic.	3515jpg
	D20	Timber door	Glazing to upper panel. Obscure glass.	3516jpg
	D21	Timber door	Glazing to upper panel. Obscure glass.	3519jpg
	D22	Timber door	Timber – 3 panels. Timber knobs and escutcheons.	3518jpg
	D23	**Timber door**	**Ledged timber door. Painted**	**3447jpg**

Room No.	Room Name	Type / Finish	Comments	photograph
	External **Orientation /Element name**			
	North Elevation	Splayed and chamfered weatherboards. Painted	Base moulding missing on outer face. Outer floor needs repair. Step requires levelling and new repointing with lime rich mortar.	
	Porch	Splayed and chamfered weatherboards. Painted	Repair all joints in timber to protect from water penetration and paint. Oil timber floor annually. Clean walls and paint when required .	3425jpg 3424jpg 3423jpg 3422jpg 3421jpg
	Garage	Splayed and chamfered weatherboards. Painted	Retain. Check that slab is not a pathway for termites.	3429jpg 3430jpg 3433jpg
	South Elevation	Splayed and chamfered weatherboards. Painted.	Paint weatherboards when required.	3448jpg 3449jpg 3450jpg 3451jpg 3452jpg 3455jpg
	Enclosed Verandah	Splayed and chamfered weatherboards. Painted	Aluminium sliding windows. Maintain this area. The south verandah could be demolished if there are structural problems or if it is assessed as a pathway for termites.	
	East Elevation	Splayed and chamfered weatherboards. Painted.	Paint weatherboards when required. Repair boards at ends where end-grains are deterioration and replace if required	3431jpg 3430jpg 3434jpg
	West Elevation	Splayed and chamfered weatherboards. Painted.	Paint weatherboards when required. Repair boards at ends where end-grains are deterioration and replace if required.	3528jpg 3453jpg 3456jpg 3458jpg
	Enclosed Verandah	Splayed and chamfered weatherboards. Painted	Sliding timber windows. Maintain and protect this area.	
	Roof	Corrugated Iron	Signs of some oxidation and deterioration. Replace only those sheets that allow water penetration and only if required. Replace with matching galvanised iron profile.	3426jpg 3531jpg
	Gutters	Quad. Colorbond	Replace gutters and downpipes if required. Replace with half round gutters and circular diameter downpipes in galvanised steel or colorbond.	3531jpg

Figure 3528jpg

Figure 3526jpg

Figure 3531jpg

5.0 Summary – Homestead (Building 1)

The building displays layering of the various eras of work done to the fabric and adaptations and additions carried out. Parts of the house may be original fabric such as the chimney on the south and some internal walls. The house has been altered in the Inter-War period with the addition of a Classical Revival entrance porch which appears to be architecturally designed.

The earlier house is the central section around the hallway, which has been altered with the addition of new bathroom areas and alterations to the front entrance and floor plan. The area of Bedroom (Room 8) and the Meal Area (Room 5) appears to be earlier and includes and early chimney now enclosed in the southern verandah.

The building has been altered at different stages during its use and these main stages appear to be the addition of the front entrance and porch.

The eastern side of the building is a later addition with a three car garage and laundry and second bathroom and screened outdoor area. The earlier laundry remains as a separate building to the east of the homestead. The southern verandah appears to be an addition and the western verandah is likely to be an earlier addition.

The condition of the building appears to be sound. The Kitchen and utilitarian areas are in good condition and the house has been used for habitation recently.

Access to the sub-floor is restricted, and termite activity is hard to detect in such circumstances.

There is evidence of pest ingress in the house such as possums. The house should be treated annually for pests and the ingress of pests prevented.

The schedules here in before, should provide a reasonable basis for a work / repair and maintenance schedule to be assembled.

External

The roof requires some repair and cyclical maintenance to prevent water and pest ingress. This repair should include regular checking of roof fixings and replacement of galvanised iron roof with regalvanised steel to match. Paint exposed eaves with penetrol to prevent further deterioration. The roof should be painted when paint starts to deteriorate. Gutters and downpipes should be replaced if leaking. Replace with galvanised steel half round gutters and circular diameter downpipes or colorbond to match existing colour.

Deterioration evident on end-grain of weatherboards at corners. Check damp and termites and that gutters and downpipes are functioning. Replace sections of weatherboard if required and paint end-grain.

Maintain paintwork on all external timber. Prevent water penetration to detailed joinery at entrance porch. Fix all joints and paint.

Slashing around the building for fire protection and as a safety measure for reptile detection is required on a regular basis.

Summary Recommendations

The external Laundry (Room 16) should be protected and preserved as a layer of the history of the homestead. The fixtures should be maintained in situ.

The heritage values in the homestead building, particularly the entrance porch and earlier section of the house need to be protected and conserved. The house is currently habitable and this condition should be maintained.

Built Item	**Water Tanks**		Inspection date: 08/03/2012

Item No.	Name	Type / Finish	Comments	photographs
2 and 3	**Water Tank**			
	Orientation /Element name			
	Support Structure	Timber Logs	Timber logs in ground as supports posts. Machined timber cross bracing bolt fixed to posts. Check and repair joints if required with galvanised wire and new galvanised bolts where required. Retain existing timber members and install new secondary timber structure where required.	3405jpg 3410jpg 3549jpg 3547jpg
	Platform for Water Tanks	Timber	Machined timber bearers and joists. Spaced timber boards showing signs of rot. Remove tanks and repair platform. Replace boards where required.	3409jpg 3407jpg
	Water Tank	Galvanised Iron	Galvanised iron oxidised and deteriorated. Remove loose sections of galvanised iron. Tanks may need to be removed as platform unstable and loose sections of iron. Replace with new Galvanised Steel tanks.	3408jpg 3409jpg
	Plumbing	Galvanised steel pipes	Remove plants from base of tanks. Repair plumbing and do not water around posts.	

Figure 3409jpg

Figure 3549jpg

6.0 Summary – Water Tanks

The Water Tanks are a significance part of the rural complex and should be protected and preserved. The galvanised tanks have deteriorated to such an extent that it may be hard to secure these and they could present a danger in high winds and hence it would be practical to remove the tanks. New galvanized water tanks should be installed if the existing cannot be secured. The tank stands should be protected and preserved. This will require repair work to fix the platforms and fixing of all structural members. New galvanised steel bolt fixings should be used and the original fixings retained. Galvanised wire can also be used to reinforce joints.

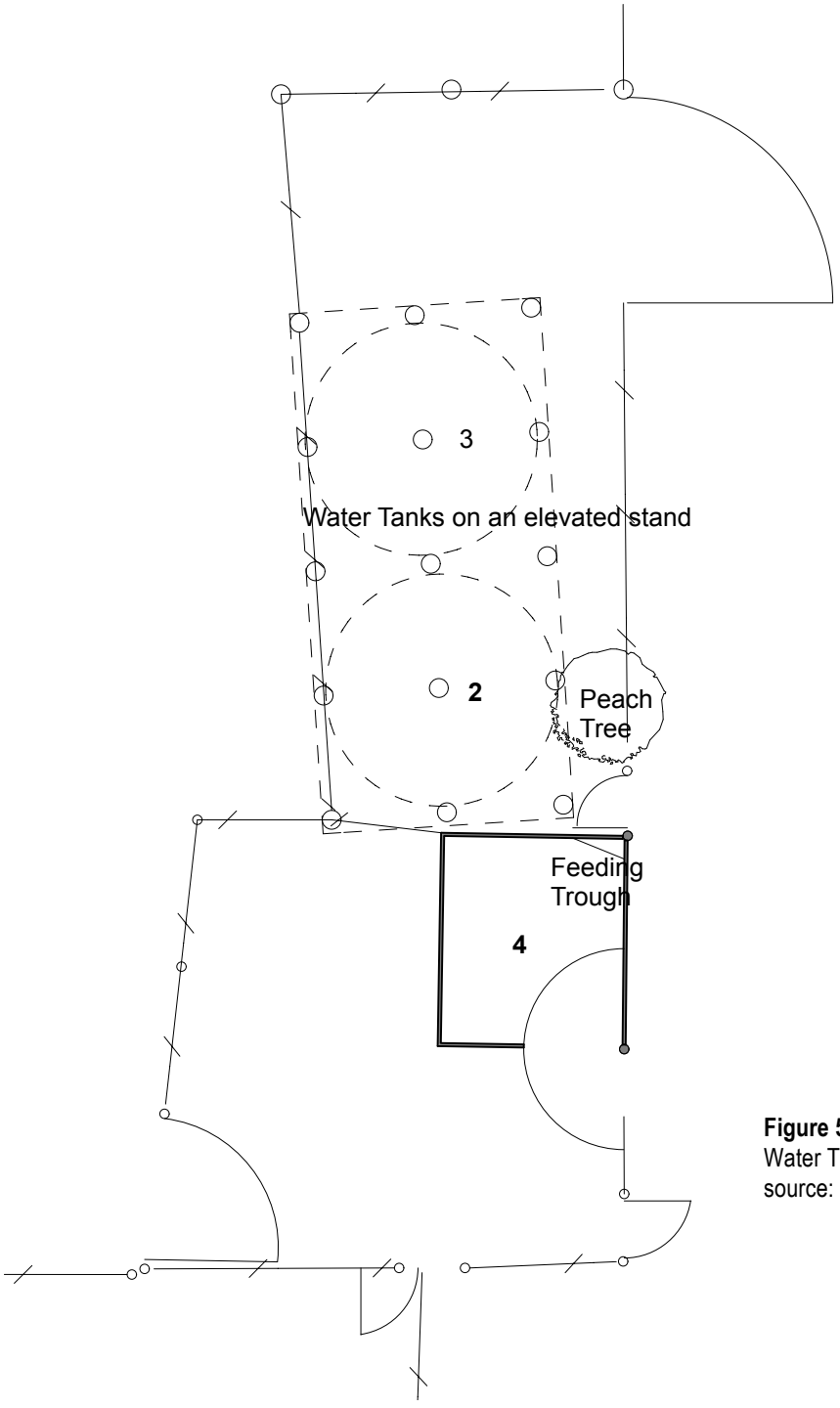


Figure 5
Water Tanks and Stable 4 Plan
source: carste STUDIO

7.0 Fabric Assessment: Stable (Building 4)

Refer to Figure 5 Plan above.

Built Item	**Stable**		Inspection date: 08/03/2012

Room No.	Room Name	Type / Finish	Comments	photographs
4	**Stable**		Stable that appears to have been built from recycled materials surrounded by post and rail fenced yard. Slabs are machined with circular saw markings and no evidence of adze working. Generally good condition.	3545jpg
	Orientation /Element name			
	Wall North	Open	Timber slab fence to lower half of wall.	3532jpg 3533jpg
	Wall East	Open	Log supports. Partially open. Timber slabs in part with circular saw markings.	3533jpg
	Wall South	Timber	Log supports. Timber slabs.	3535jpg
	Wall West	Timber	Timber slabs	
	Ceiling	Underside of Galvanised Steel roof.	Galvanised steel shows signs of oxidation and pitting.	
	Floor	Dirt . Brick and sandstone falgging	Likely to reused material from older outbuilding.	3546jpg
	Fixtures	Feeding Trough	Timber slabs	3542jpg

Figure 3533jpg

8.0 Summary – Stable (Building 4)

The stable has been built from recycled materials and is surrounded by a post and rail fenced yard. Slabs are machined with circular saw markings and no evidence of adze working.

The stable is a later building built with recycled materials. The slabs on walls and fences are machined with circular saw markings.

This building is assessed as significant and could be removed. The materials including all hardwood, stone flaggings and brick paving should be retained for use in conservation work to the more significant outbuilding (Building 7).

9.0 Fabric Assessment: Stable (Building 5)

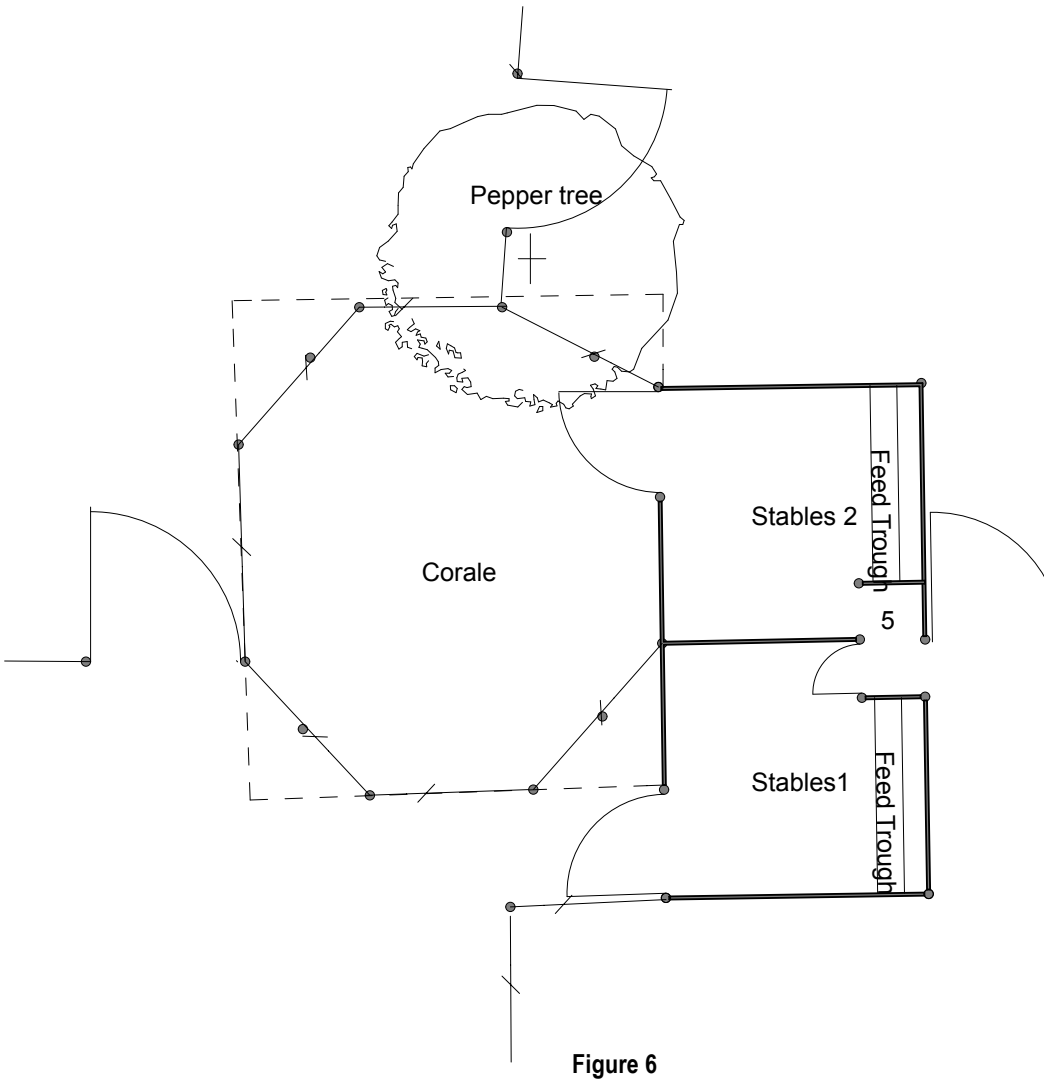


Figure 6
Stable 5 Plan
source: carste STUDIO

Built Item	**Stables**		Inspection date: 08/03/2012

Room No.	Room Name	Type / Finish	Comments	Photographs
5	**Stables**		Stable has been built from recycled materials surrounded by post and rail fenced yard. Slabs are machined with circular saw markings and no evidence of adze working. Slabs are fixed with galvanised wire and nails.	3558jpg
	Orientation /Element name			
	Wall North	Timber slab	Machined timber slabs with circular saw markings. Stamped sheet iron to gable end.	3413jpg 3414jpg
	Wall East		Log supports. Machined timber slabs.	3412jpg
	Wall South	Timber	Log supports and machined timber slabs. Open to yard fenced with timber post and rail.	3418jpg 3419jpg
	Wall West	Timber	Log supports and machined Timber slabs.	3567jpg 3415jpg 3416jpg
	Ceiling/ Roof	Galvanised Steel	Galvanised steel shows signs of oxidation and pitting. Machined timber purlins and rafters.	3557jpg
	Floor	Dirt . brick and sandstone flagging	Likely to be reused material from older outbuilding.	
	Fixtures	Feeding Trough	Machined timber slabs.	3555jpg 3560jpg
		Stable enclosures	Stables (number 2) divided by machined timber slabs and galvanised steel gates.	3553jpg

Figure 3413jpg

Figure 3557jpg

10.0 Summary – Stable (Building 5)

This stable has been built from recycled materials and is surrounded by post and rail fenced yard. Slabs are machined with circular saw markings and no evidence of adze working. Slabs are fixed with galvanised wire and nails.

This building should be preserved as a layer of the history of use of the site. The preservation should include stabilisation of the structure if required for preservation only and not for proposed future use.

11.0 Fabric Assessment: Stable (Building 6)

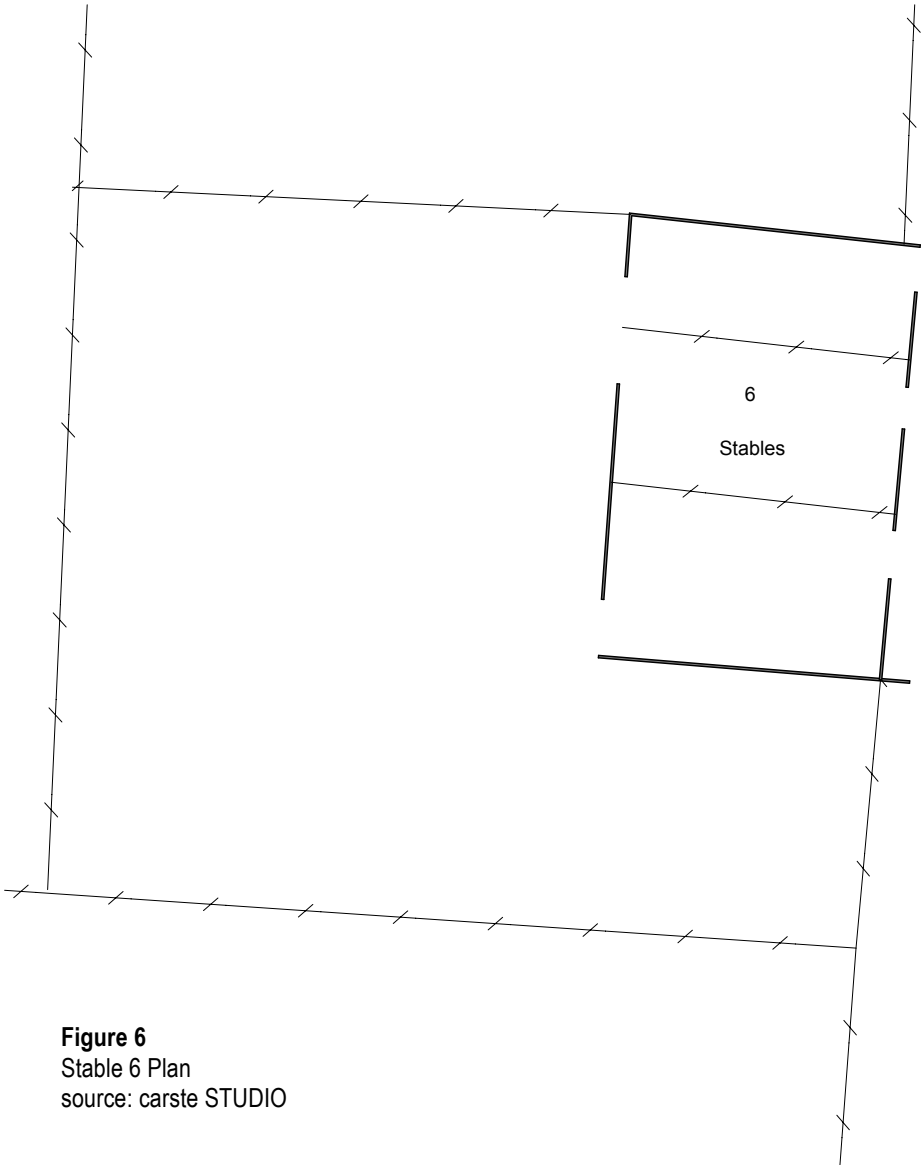


Figure 6
Stable 6 Plan
source: carste STUDIO

Built Item	**Stables**		Inspection date: 08/03/2012

Room No.	Room Name	Type / Finish	Comments	Photographs
6	**Stables**		Stable has been built from recycled materials surrounded by post and rail fenced yard.	
	Orientation /Element name			
	Wall North	Timber slab	Machined timber slabs with circular saw markings. Galvanised steel gates to each stable enclosure.	3570jpg
	Wall East		Log supports and machined timber girts. Galvanised iron cladding.	
	Wall South	Timber	Log supports and galvanised iron cladding. Open to yard fenced with timber post and rail.	3576jpg 3575jpg
	Wall West	Timber	Log supports and galvanised iron cladding	3577jpg
	Ceiling/ Roof	Galvanised Steel	Galvanised steel. Machined timber purlins and rafters.	
	Floor	Dirt . brick and sandstone flagging	Likely to be reused material from older outbuilding.	
	Fixtures	Stable enclosures	Stables (number 3) divided by machine rails and membrane.	

Figure 3576jpg

12.0 Summary – Stable (Building 6)

This is a later building built from recycled materials and machined timber. It has little aesthetic or historical significance.

This building is not assessed as significant and could be removed. The materials including all hardwood, stone flaggings and brick paving should be retained for use in conservation work to the more significant outbuilding (Building 7).

13.0 Fabric Assessment: Stable/ Shearing Shed (Building 7)

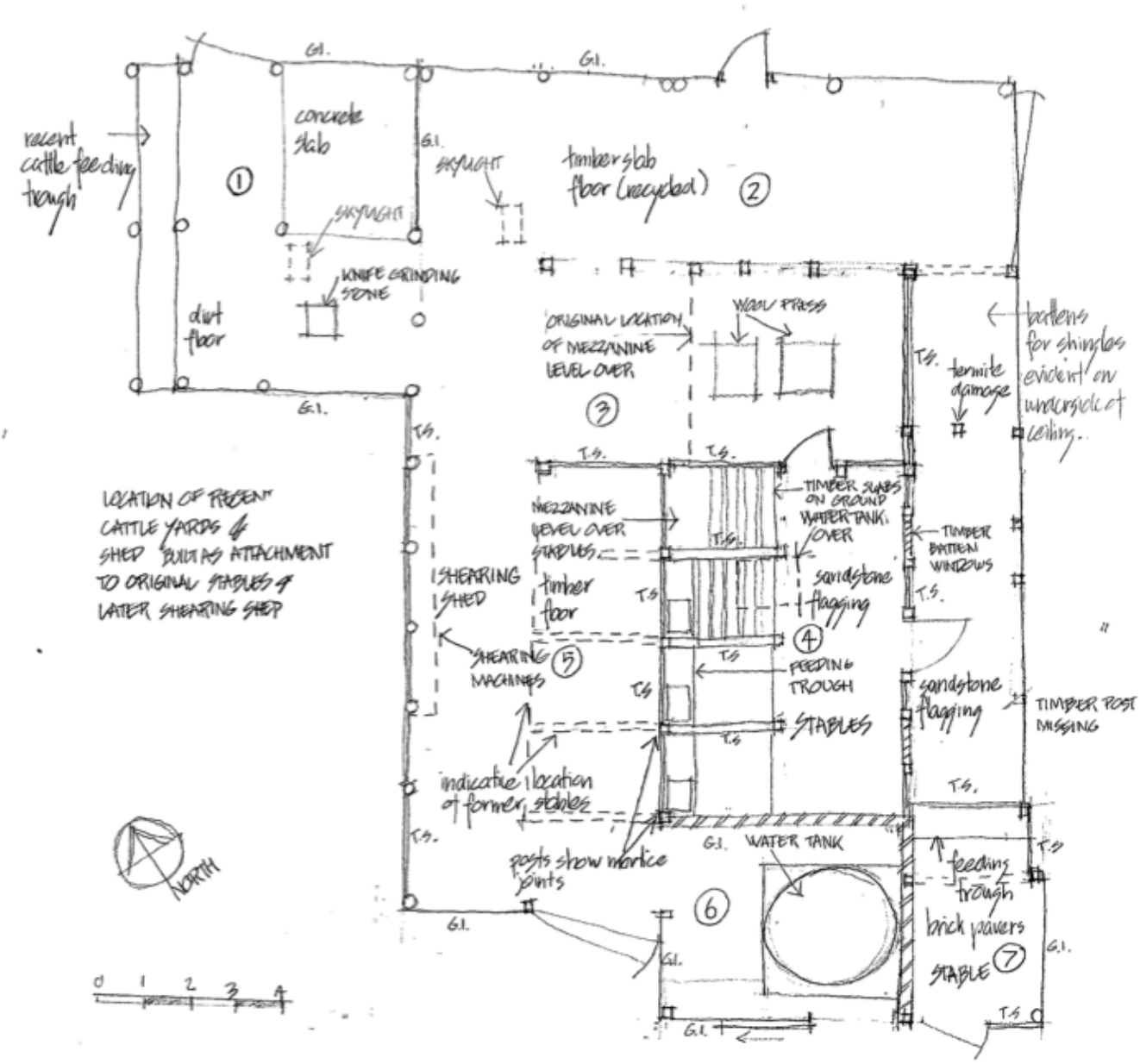


Figure 7
Stable and Shearing Shed
source: carste STUDIO

Building 7	**Shearing Shed Stables**		Inspection date: 21/03/2012

Room No.	Room Name	Type / Finish	Comments	Photographs
1	**Machinery area**		An area that has been added to the main shearing shed. Indicated by remnant gutter on east wall and change in roof form.	
	Orientation /Element name			
	Wall North	Galvanised steel	A galvanised steel gate located across the opening in the wall. Log supports and machined timber girts.	3583jpg
	Wall East	As Above	Log supports. Partially open to shearing shed. Remnant gutter evident on east wall indicating this wall was originally external.	3589jpg
	Wall South	As above	Log supports and machined timber girts.	3580jpg 3581jpg
	Wall West		Open to new section of Cattle Shed and recent feeding trough for cattle.	3587jpg
	Ceiling	Underside of Galvanised Steel roof.	Machined timber rafters and purlins.	3585jpg 3586jpg
	Floor	Dirt . Concrete slab in north-east corner.		
	Fixtures	Shearing blade and knife sharpening grindstone.	Stamped with *Lister.* Remove rust and paint with penetrol.	3590jpg-3593jpg
		Skylight	Located above knife sharpener.	3584jpg

Figure 3580jpg

Room No.	Room Name	Type / Finish	Comments	Photographs
2	**Skillion Roof addition use unknown**		An area that has been added to the main shearing shed. Indicated by the change in roof form and construction of the north wall.	
	Orientation /Element name			
	Wall North	Galvanised steel and timber posts.	Log supports and machined timber girts. Timber ledged door.	3608pg
	Wall East	Open	Open to external Lean-to on east.	3602jpg
	Wall South	Open	Cladding removed. Support structure extant and includes hewn squared timber posts and intermediate supports. Remnant upper windows built as timber battened grilles similar to stable windows in Room 4. Structure fixed with mortice and tenon joints and timber pegs. Wall of high significance stabilise and do not alter.	3596jpg 3604jpg
	Wall West	Galvanised steel and timber posts.	Log supports and machined timber girts.	3598jpg
	Ceiling	Underside of Galvanised Steel roof.	Machined timber rafters and purlins.	3601jpg
	Floor	Timber slabs. Timber T&G.	Recycled adze worked slabs used as flooring in eastern section. Timber butt edged floor in western section.	3602jpg
	Fixtures	Skylights (number 2)		

Figure 3608pg

Room No.	Room Name	Type / Finish	Comments	Photographs
3	**Baling area**		The area of the shearing shed including the wool presses. This area appears to be part of the original stables before adaptation for shearing shed use.	
	Orientation /Element name			
	Wall North	Open	Cladding removed. Support structure extant and includes hewn squared timber posts and intermediate supports. Remnant upper windows built as timber battened grilles similar to stable windows in Room 4. Structure fixed with mortice and tenon joints and timber pegs. The remnant structure indicates the original roof form of the stables before additions for use as a Shearing Shed.	3594jpg
	Wall East	As above.	Split Timber slab wall with adze work. Additional horizontal slabs placed externally to lower section of wall.	3611jpg
	Wall South	Timber slab. Squared hewn posts.	Split Timber slab wall with adze work. Ledged and braced timber door with strap iron hinges	3614jpg 3617jpg 3618jpg
	Wall West	Open		3628jpg
	Ceiling	Underside of Galvanised steel roof.	Underside of mezzanine level showing structure with floor to mezzanine removed. Underside of galvanised steel roof above mezzanine and battens for shingle roof evident.	3619jpg 3627jpg
	Columns/posts	Hewn squared posts.		3628jpg
	Floor	Slabs	Recycled timber slabs. T&G boards in area of wool presses. T&G floor failing and deterioration of timber.	
	Fixtures	Wool presses	Wool Presses (number 2). Timber barrels with winches intact on one press. Paint machinery with penetrol.	3622jpg-3625jpg

Figure 3594jpg

Room No.	Room Name	Type / Finish	Comments	Photographs
4	**Stables**			
	Orientation /Element name			
	Wall North	Timber slab. Squared hewn posts	Split Timber slab wall with adze work. Ledged and braced timber door with strap iron hinges.	
	Wall East	As above.	Split Timber slab wall with adze work. Additional horizontal slabs placed externally to lower section of wall. Window openings with timber battens. Timber braced and ledged door. Evidence of slip rail joint in timber post.	3673jpg 3677jpg
	Wall South	Brick wall with intermediate horizontal timber members.	Brick with lime mortar.	3663jpg
	Wall West	Timber slab. Squared hewn posts	Split Timber slab wall with adze work. Fix all loose slabs with galvanised wire.	3666jpg
	Ceiling	Underside of mezzanine timber floor.	Underside of mezzanine level showing timber floor. Squared timber fixed with timber dowels.	3679jpg 3758jpg
	Columns/posts	Hewn squared posts.	Structure fixed with mortice and tenon joints and timber pegs. Chamfered edges. Do not use nails or new fixings in this area (Room 4).	3763jpg
	Floor	Sandstone flagging Timber Slabs	Sandstone flagging in area outside stable enclosures. Timber slabs in stable enclosure area.	3682jpg 3683jpg
	Stable enclosures		Split timber slabs with adze work to all side walls of stable enclosures. Split timber slab floor. Squared and hewn timber members fixed with mortice and tenon joints and timber pegs and chamfered on all edges. Do not use nails or new fixings in this area.	3668jpg 3678jpg
		Feeding Troughs	Split timber slabs. Hewn stone feeding trough.	
	Fixtures	Water Tank	Iron water tank with pop rivet fixings. The tank has oxidised and perforated. Paint with penetrol.	3621jpg

Figure 3594jpg

Figure 3758jpg

Room No.	Room Name	Type / Finish	Comments	Photographs
5	**Shearing Area**		The work area of the shearing shed including the shearing machine remnants. The eastern portion of this room is likely to have also contained stables originally as evident by the timber joint markings on the wall and the intermediate height of the end slab wall on the north.	
	Orientation /Element name			
	Wall North	Open. Timber slab to intermediate height.	Split timber slabs with adze markings	3631jpg
	Wall East	Timber slab	Slabs require fixing with galvanised metal wire. Mezzanine wall above clad with timber boards. Split timber slabs with adze markings. Slabs require fixing with metal wire.	3641jpg 3642jpg 3643jpg
	Wall South	Galvanised Iron	Galvanised steel gate. Galvanised steel wall cladding with machined timber girts and machined timber post.	3630jpg
	Wall West	Timber slab	Split timber slabs with adze markings and supported with timber logs. Slabs require fixing with metal wire. Shearing machines fixed to wall.	3639jpg
	Ceiling	Underside of Galvanised Iron roof	Machined timber rafters and purlins.	3643jpg
	Columns/posts	Timber logs. Hewn squared timber posts.		
	Floor	Close spaced timber boards	Timber T&G boards to east section. Deterioration and some structural collapse in floor. Timber boards butt jointed in western section of room. Check fro termites and place new secondary floor members if required.	
	Fixtures	Shearing Machines	Remnants of shearing machines stamped *Lister*. Paint shearing machines with penetrol.	3633jpg 3635jpg 3647jpg 3650jpg

Figure 3643jpg

Room No.	Room Name	Type / Finish	Comments	Photographs
6	**Water Tank and Storage area**			
	Orientation /Element name			
	Wall North	Brick	Brick and lime mortar with intermediate horizontal timber members.	3654jpg
	Wall East	Timber slab	Brick and lime mortar with intermediate horizontal timber members. Timber dowel pegs fixed to intermediate timber members.	3658jpg
	Wall South	Galvanised Iron	Galvanised steel sliding door. Galvanised steel wall cladding with machined timber girts and machined timber posts.	3652jpg 3654jpg
	Wall West	Timber slab	Galvanised iron. Large opening in this wall to Room 5.	
	Ceiling	Underside of mezzanine level	Squared timber bearers and butt jointed timber floor.	3659jpg
	Columns/posts	Timber logs. Hewn squared timber posts.		
	Floor	Close spaced timber boards	Timber T&G boards to east section. Deterioration and some structural collapse in floor. Tiber boards butt jointed in western section of room.	
	Fixtures	Water Tank	Galvanised steel on a timber base	3651jpg
		Timber chest	Timber clad box along length of southern wall appears to be for storage.	

Figure 3652jpg

Room No.	Room Name	Type / Finish	Comments	Photographs
7	**Stable**		Stable (Room 7) may be an addition. It appears as a later enclosure of the east skillion roof which serves as a sheltered area or verandah to the original Stables (Room 4)	
	Orientation /Element name			
	Wall North	Split timber	Split timber slabs nail fixed to wall plate.	3699jpg
	Wall East	Timber slab	Timber slab to lower section and Galvanised iron cladding to upper section.	3698jpg
	Wall South	Galvanised Iron	Galvanised steel gate. Machined timber slabs. Galvanised steel cladding to gable end.	
	Wall West	Timber slab	Bricks and lime mortar with intermediate horizontal timber members. Repoint mortar joints with lime mortar to match existing mortar.	3704jpg
	Ceiling	Underside of galvanised iron roof.	Battens for original shingle roof evident.	
	Columns/posts	Hewn squared timber posts.	Repeats the spacing and type of verandah post located on the remainder of the verandah to the north of Room 7.	
	Floor	Bricks	May be recycled bricks. Timber members laid on ground at intervals.	3700jpg
	Fixtures	Feeding Trough	Timber planks.	
	Comments		Retain this area as evidence of the layer of use of this building.	

Figure 3704jpg

Room No.	Room Name	Type / Finish	Comments	Photographs
	North Elevation		The skillion roof is an addition as evident by the original external wall (now the internal north wall to Room 3) and the door on the gable end of this same wall projecting above the skillion.	
	Orientation /Element name			
	Wall North	Galvanised Iron	Galvanised Iron painted. Braced and ledged door. Iron strap hinges. Door requires to be squared and rehung.	3730jpg 3731jpg
	Roof		Galvanised iron. Refix all loose iron with galvanised nails. Replace galvanised iron with iron to match if water penetrating. Paint roof with penetrol.	
	Gable end	Lapped timber boards	Timber ledged door. Lapped boards Required to refixed and oiled.	3735jpg
	Gutters	Galvanised Iron	Replace deteriorated gutters if required with galvanised steel half round gutters and check drainage lines and damp to avoid deterioration of timber post and slabs in ground.	3732jpg

Figure 3730jpg

Room No.	Room Name	Type / Finish	Comments	Photographs
	East Elevation		The extent of the later skillion roof is evident in the structure. The skillion roof along the north elevation is supported with timber logs and machined timber rafters and battens. The original skillion roof on the east elevation is supported by hewn squared and stop chamfered posts and the roof in this section retains the shingle battens. The verandah also has end boards on north of the original skillion.	
	Orientation /Element name			
	Wall East	Timber slab	Split timber slabs with adze working. Hewn square posts. Horizontal timber slabs nail fixed to vertical slabs in section of wall appear to be later material. Galvanised steel cladding to later stables (Room 7) addition on southern section of skillion.	3750jpg 3707jpg 3709jpg 3710jpg 3744jpg 3745jpg 3736jpg
	Floor	Sandstone Flaggings	Protect and preserve.	3744jpg
	Ceiling	Underside of Galvanised Iron	Squared rafters. Shingle battens	3778jpg
	Roof		Galvanised iron. Refix all loose iron with galvanised nails. Replace galvanised iron with iron to match if water penetrating. Paint roof with penetrol.	3747jpg 3749jpg
	Gutters	Galvanised Iron	Replace all gutters with galvanised steel half round gutters if required and check drainage lines and damp to avoid deterioration of timber.	
	Posts		Post missing from southern section of verandah. Replace to avoid structural failure. (Post may be stored in Room 4). Termite damage evident to timber frame. Treat timber for termites. Remove later timber frame addition that shows signs of termite activity.	3742jpg 3777jpg 3776jpg
	Openings		Timber ledged door to stable Window openings to stable with timber battens. Hardware includes strap iron hinges.	3739jpg 3738jpg
	Fence	Post and rail	Remnant post and rail fence. Slash and clear grass and weeds. Retain and stabilise post and rail fence.	3746jpg
	Trees and vegetation	Pepper trees	Prune back away from gutters and roof.	

Figure 3777jpg

Figure 3742jpg

Room No.	Room Name	Type / Finish	Comments	Photographs
	South Elevation		The elevation has been altered with the addition of the machinery shed that adjoins the subject shed on the south elevation.	
	Orientation /Element name			
	Wall South	Galvanised Steel	Machined slabs to east wall addition to skillion.	3687jpg 3688jpg 3713jpg 3719jpg
	Roof		Galvanised iron. Refix all loose iron with galvanised nails. Replace galvanised iron with iron to match if water penetrating. Paint roof with penetrol.	3713jpg 3719jpg
	Gable end	Galvanised Steel		

Figure 3719jpg

Room No.	Room Name	Type / Finish	Comments	Photographs
	West Elevation		The elevation has been altered with the addition of the machinery shed and cattle sheds that adjoins the subject shed on the west elevation.	
	Orientation /Element name			
	Wall	Galvanised Steel	Split slabs with adze markings. Fix all slabs with galvanised wire and nails.	3724jpg 3725jpg 3727jpg
	Roof	Galvanised Iron	Galvanised iron. Gaps in roof where iron has been dislodged. Refix all loose iron with galvanised nails. Replace galvanised iron with iron to match if water penetrating. Paint roof with penetrol.	
	Gutters and Downpipes	Galvanised Iron	Replace all gutters and downpipes if required with galvanised steel half round gutters and check drainage lines and damp to avoid deterioration of timber.	

Figure 3725jpg

14.0 Summary – Stable/ Shearing Shed (Building 7)

This outbuilding is a combination of a number of sheds including an early building and recent additions for use as a machinery shed and cattle yards. This report looked at the earlier section of the shed only as shown on the Site Plan. The subject section of Building 7 displays layers of use. The earliest use is as a Stable and later adaptation of parts of the Stable as a Shearing Shed. It is an unusual shearing shed as there is no evident functional planning typical of most shearing sheds and atypically the shed is built on the ground. There are no obvious areas for holding pens or wool classing area, nor a chute from the shearing area or sheep yards.

The building is a post and beam construction of a bush vernacular type. It displays the refinement and skill of the early carpenters in the mortice and tenon joints held with timber dowels and finely hewn and adzed timber work with chamfered edges to timber in stable enclosures. The adaptation of the building for use as a shearing shed is an historical record of the changes in farming stock. It is also a significant early record of both refined carpentry skills and the use of typical bush carpentry skills of the time, such as split and adzed slab wall construction.

Threats to the structure in the future include:

Disuse and hence neglect and lack of ongoing maintenance, fire, vandalism, high winds, failing of fixings due to corrosion, exposure of interior elements through dislodgement of roof sheets by wind or water ingress, corroded roof sheets and fixings. Termites are also a major cause of deterioration in this area.

The schedules contained herein include detailed recommendations on the maintenance and conservation of this building.

Generally the building should be checked for termites and monitored regularly. Water ingress and damp should be controlled with the maintenance of the roof cladding and roof plumbing.

The roof sheeting should be checked and fixed regularly to prevent dislodgement. If required due to deterioration second hand galvanised iron sheets should be used or new galvanised steel rolled to match the existing corrugated profile. Guttering should be replaced if leaking, with galvanised steel gutters.

All timber posts and hardwood structural members should be checked and repaired if unstable. No existing hardwood timber, joints or fixings should be removed. New work should include splicing existing timber or placement of secondary timbers. Original fixings should be retained and new galvanised steel bolts used in new timber members only. Galvanised wire can be tied around joints where reinforcement is required and no new fixing holes should be made in original timber. Exposed external hardwood should be oiled with linseed oil.

The potential for damage due to blasting operations is high and it is recommended that precautions be taken to prop or brace the structure against upheaval and percussion. This work should be reversible and no new fixings should be made in original timber.

This building is a significant early building of high to exceptional significance in the Hunter Valley and hence it should be protected and preserved.

Built Item	Fences			
	Name **Refer to Figure 3 Site Plan for fence location**	**Type / Finish**	**Comments**	**Photographs**
	Orientation /Element name			
	House / Garden F1		Surrounding the House and Garden: Timber post and rail painted. Fence built with timber logs in ground and machined timber rails. Fixed with nails and notch in posts. Galvanised steel garden gate and steel grid -Maintain and paint fences and gate when required.	3426jpg 3427jpg 3455jpg
	Stable F2 F3		Adjacent to Building 4: Timber slab fence and timber post and rail. Slab fence is a later construction built with machined slabs- Remove if required. Post and rail fence is built with recycled materials including early split slabs- Retain this fence as evidence of the use of this building.	3532jpg 3537jpg 3536jpg
	Stable F4 F5		Adjacent to Building 5: Post and rail enclosing horse training yard. Fence is a later construction built with second hand timbers and joined with galvanised wire- Remove this fence if required. Post and rail fence to the west shows signs of earlier use of wire in posts indicating use for sheep farming before cattle and horses- Preserve the post and rail fences to the west.	3418jpg 3419jpg 3568jpg 3569jpg
	Stable F6		Adjacent to Building 6: Timber post and rail fence built with recycled materials- Remove this fence if required.	3577jpg
	Stables/ Shearing Shed F7		Adjacent to Building 7: Remnant of post and rail fence on east. Split slabs and slip rail joints. Likely to be part of original horse yard fence- Preserve this remnant fence.	3746jpg 3711jpg 3713jpg 3742jpg
	Cattle Yards F8		Adjacent to Building 7: Post and rail fences built with machined timber- Maintain these fences for future use of the cattle yards.	3727jpg 3720jpg

Figure 3426jpg

Figure 3569jpg

15.0 Summary – Fences

The fences include circular sawn slabs, timber post and rail and timber post and wire fences and a remnant of an earlier fence. Some fences appear to have been altered with evidence of former wire fences now replaced with timber. The fences in the immediate area of the house are constructed of logs and machined rails and have been painted white. There is some remnant fence adjacent to the Stable (Building 7), located to the east of this building that is likely to date from the original use of this building as a stable. There is a cattle stockyard of a later date built with machined timbers and attached to the large shed adjacent to Building 7.

This report assessed the fences in the immediate area of the subject building only. There is likely to be earlier fences in other locations outside the subject area and these should be preserved.

16.0 Conclusion and Recommendations

The subject area of Oaklands forms a rural complex that includes a Homestead, outbuildings, water tanks, fences and mature trees. As a whole this complex is assessed as historically significant in its association with the Bowman family. It has aesthetic significance as a representative example of this type of rural complex. The Homestead, its setting and the Stable/Shearing Shed (Building 7) have aesthetic significance. The Stable/Shearing Shed (Building 7) is assessed as a building of high to exceptional significance in the Hunter Valley. It is also likely to be of rare value as a surviving example of this building construction type.

In corollary the loss of any significant part of this rural complex will have a negative impact on the whole rural complex. Building 7 should be protected and preserved and the detailed recommendations in the schedule herein should be implemented.

Some items have been assessed as having little significance based on the assessment of the fabric. These include two of the outbuildings that were used as stables and were built at a later date from recycled materials. The removal of those buildings as identified in the assessment schedules could be allowed if this is the most feasible option. It is important to conserve layers of development of the property up to recent use and this has been considered in the detailed schedule and recommendations for conservation.

Consideration should be given to the ongoing habitation of the site to ensure its maintenance and future preservation.

The possible incorporation of roadside interpretation signs could be considered to identify the place and explain the history and conservation processes being undertaken concurrent with mining operations.

A written and a photographic record of the works undertaken should be maintained in order to track the interventions made.

Essential to the continued conservation is the maintenance of firebreaks around the property, and either water storage facilities for the fire fighting purposes or fire extinguishers as a back up measure. The grass and unwanted plants, weeds and tree growth should be should be kept in check and cut back and slashed in proximity to significant buildings. A formalised system of rainwater collection should be implemented using the existing water tanks.

Mining operations, particularly blasting, may cause damage to these fragile buildings and items and measures should be taken to secure loose building elements, undertake temporary propping of posts and beams to ensure ground movement and percussion waves do not adversely affect the existing

structure. This work should be reversible, meaning able to be removed at the cessation of blasting with no alteration to existing fabric.

The buildings should be systematically secured particularly if they are not habituated, locks been fitted and areas of ingress secured.

The future of the place should be considered and the ongoing or future use for grazing or farming at the cessation of mining. Building 7 is a building of technical interest and should be preserved for future interpretation and research. The preservation of this rural complex as a whole as outlined in detail herein needs to be implemented during mining activity to enable both the conservation of a significant historical place in the Hunter Valley and a future use of the property and its buildings.

Appendix E - Hillcrest Offset Area, Ravensworth – Heritage Assessment.

Hillcrest Offset Area – Hebden, NSW

Heritage Assessment

Prepared for
Glencore Ravensworth Open Cut

May 2018

DOCUMENT TRACKING

Item	Detail
Project Name	Hillcrest Offset Area, Hebden – Heritage Assessment
Project Number	SYD18 10129
Project Manager	Karyn McLeod (02) 8536 8673 Level 1 101 Sussex Street Sydney
Prepared by	Karyn McLeod
Reviewed by	Alistair Grinbergs
Approved by	Karyn McLeod
Status	FINAL
Version Number	2
Last saved on	21 May 2018
Cover photo	View of Lake Liddell and the offset area by Karyn McLeod May 2018

This report should be cited as 'Eco Logical Australia May 2018*. Hillcrest Offset Area, Ravensworth – Heritage Assessment.* Prepared for Ravensworth Open Cut.'

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Executive summary

The Hillcrest Offset Area (study area) is situated in Hebden, between Muswellbrook and Singleton, in the Hunter Region, New South Wales. The property is owned by AZSA Pastoral Holdings and forms part of Glencore's Ravensworth Operations Biodiversity Offset Areas. The property contains a former homestead known as 'Hillcrest' and a cottage known as 'Fairview', both of which are identified as local heritage items on Schedule 5 of the Muswellbrook Local Environment Plan (LEP) 2009. The other buildings on the property are not listed heritage items. This Heritage Assessment was prepared to assess the condition and significance of all the buildings in the offset area and provide guidance for potential future asbestos removal.

The property was originally used for pastoral activities. It was reserved for mining activities and purchased by the Electricity Commission in 1972 and the houses were likely to have been tenanted. None of the structures in the study area have functioned as farm buildings for many decades. The buildings were already dilapidated and unoccupied at the time of the heritage study in 1996 which lead to the listing of both Hillcrest and Fairview.

A site inspection was undertaken of all buildings within the offset area in May 2018. The extremely poor condition of the buildings has resulted in diminution of the listed items' heritage values. No additional heritage values were identified in any of the other structures in the offset area.

Both Hillcrest and Fairview are assessed as so dilapidated that they fail to meet the relevant assessment criteria for listing at the local level.

Recommendations

- Fencing off and restricting access to all buildings and surrounds containing asbestos should be a first priority. The fences should be high enough and strong enough to prevent animal and human interference in the contaminated areas. Asbestos warning signs should be clearly displayed on all fencing.

- Muswellbrook Council's Heritage Advisor, recommends the "fencing off" and retention of the heritage items as the preferable outcome. Fairview and Hillcrest should be fenced and left to decay naturally. Reconstruction of Fairview and Hillcrest is not a viable option considering their condition. In addition, the land is being rehabilitated and public access is not available.

- Buildings within the offset area that are not identified as heritage items can be fenced or asbestos can be removed from interior and exterior areas without Council consent. Demolition of buildings and building material not identified as heritage items can also be undertaken without Council consent. The shearing shed is in relatively good condition and should be retained.

- The asbestos contamination risk assessment prepared for the site by Hazmat in 2013 was calculated as 'low' mainly due to the remote location and minimal accessibility. Restriction of access to the site was recommended until asbestos containing debris can be remediated. If asbestos removal is to occur, it should be undertaken in accordance with the Hazmat recommendations and relevant guidelines.

- Asbestos removal should not result in additional damage to the heritage items. Both Fairview and Hillcrest are structurally unsound and pose risks to those working in the area. Removal of asbestos on the ground surrounding the buildings is unlikely to result in further damage to the heritage items and can be undertaken without Council consent. Removal of asbestos from internal areas will result in damage to the heritage items and cannot be undertaken without consent from Council.

- If in the future any of the heritage items within the offset area are considered a safety risk and demolition is considered an option, an archival photographic record of the remaining structures should be prepared in accordance with the NSW Heritage division of the Department of Environment and Heritage guidelines, *Photographic Recording of Heritage Items using Film or Digital Capture.*

- Total or partial demolition or removal of a listed heritage item will only be considered under exceptional circumstances such as health or safety risk.

1 Introduction

1.1 Background

Eco logical Australia (ELA) have been commissioned by Ravensworth Operations to prepare a historical Heritage Assessment for four groups of buildings located in the Hillcrest Offset Area, Hebden NSW (the study area). The property is owned by Glencore Ravensworth Open Cut and contains a former homestead known as 'Hillcrest' and a cottage known as 'Fairview', both of which are identified as local heritage items on Schedule 5 of the Muswellbrook Local Environment Plan (LEP) 2009. The other buildings on the property are not listed heritage items.

All buildings on the property are unoccupied, dilapidated and many contain asbestos. A Heritage Assessment is required to inform the significance of the buildings and provide guidance for future asbestos removal or cordoning off the buildings/areas as required.

1.2 Study area

The Hillcrest Offset Area (study area) is situated in Hebden, between Muswellbrook and Singleton, in the Hunter Region, New South Wales. The study area is located north of Lake Liddell, to the west of Bowmans Creek and to the east of New England Highway. The offset area is comprised of 1,405 ha of pastoral land with multiple dams and steep wooded terrain to the north (Figure 1).

Figure 1 Location of the study area

1.3 Methodology

This SoHI has been prepared in accordance with the NSW Heritage Manual 'Statements of Heritage Impact' (2002) and 'Assessing Heritage Significance' (2001) guidelines. The philosophy and process adopted is that guided by the *Australia ICOMOS Burra Charter* 1999.

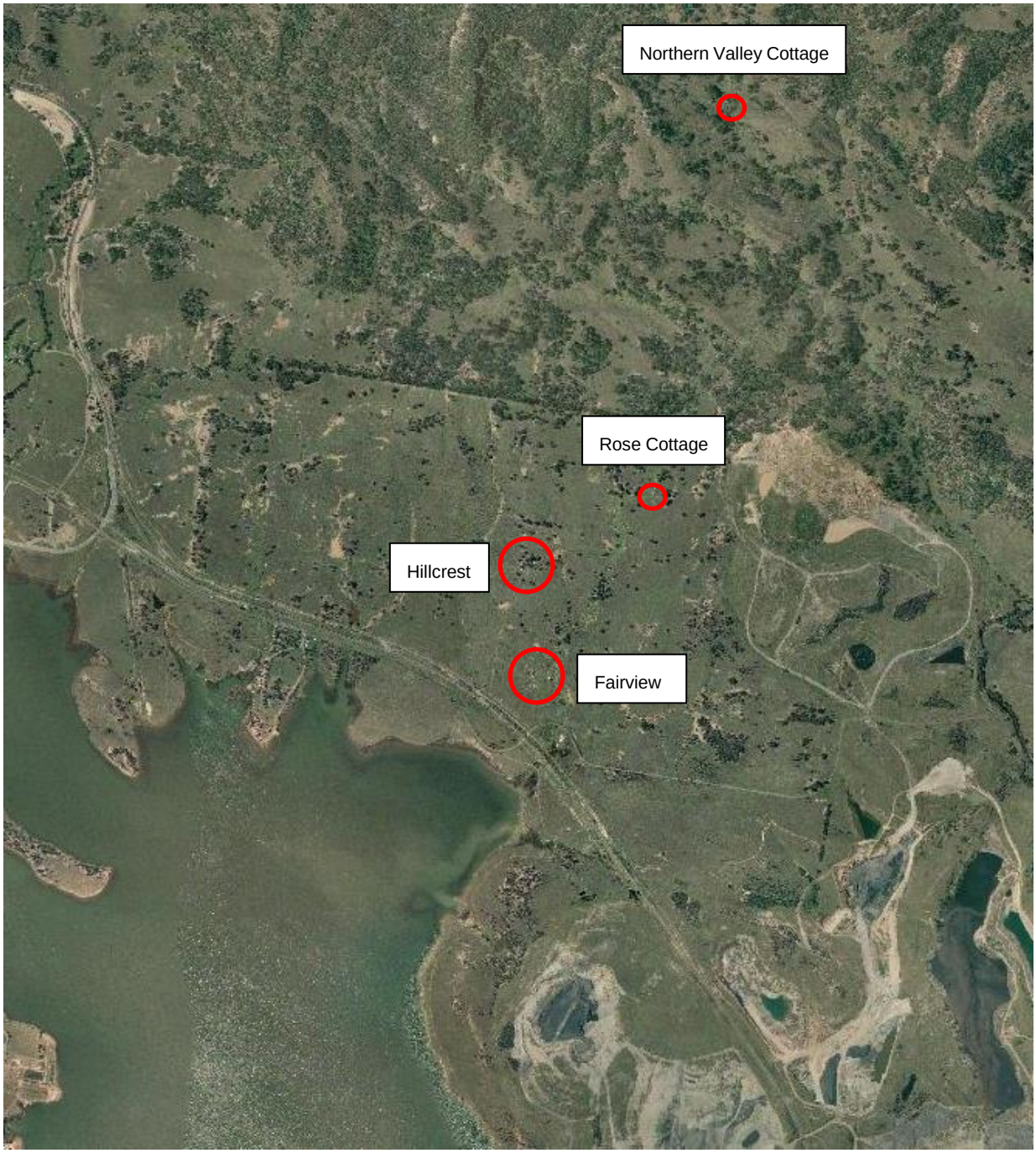

Figure 2 Location of buildings on the property

1.4 Author Identification

This report has been prepared by Karyn McLeod, Principal Heritage Consultant ELA (BA Hons [Archaeology] University of Sydney, MA [Cultural Heritage] Deakin University) and reviewed by Alistair Grinbergs, Senior Archaeologist, ELA (BA Hons [Archaeology], Australian National University, Grad Dip Environmental Law, Australian National University.

2 Site context

2.1 Site history

In 1801, the Hunter Valley was reserved, in the interests of the public, chiefly for its coal and timber resources. This action effectively closed the district to rural settlement until the 1820s. In 1823 John Howe, Benjamin Singleton and others discovered an overland route to the Hunter region from Windsor, resulting in stock being relocated into the area from the Cumberland Plain. Settlement expanded quickly in the mid nineteenth century with the establishment of large scale pastoral holdings, agriculture and dairying located along rivers and creek lines (Ravensworth Open Cut 2016).

Benjamin Singleton occupied land as early as 1821 on the banks of the Hunter River at what became known as Singleton's Ford. He was appointed district constable in 1823, established the Barley Mow Inn in 1827 and a flour mill on the riverbank in 1829. Singleton's grant was subdivided in 1836 and formed the basis of the town. The railway arrived in 1863 encouraging building and business opportunities (Singleton history).

Dr. James Bowman (surgeon and pastoralist) established a 12,160 property at Ravensworth in 1824 which was the northernmost settlement of the Hunter Valley at that time. In August, 1833, surveyor R. Dixon was instructed to prepare a field plan for a village to be established on a vacant reserve at the junction of Muscle Creek and the Hunter River, north of the Ravensworth property. The first residential blocks in Muswellbrook were sold in 1834 (Muswellbrook history).

The district was primarily dairy country, with some properties running sheep. The study area is located in the Parish of Liddell, County of Durham and parish maps from 1886 show that the land was located on properties owned by Duncan F Mackay and J H Zerk. Coal mining and power generation became increasingly important after the Muswellbrook Coal mine was established in 1907. Viticulture and wine making have become more prominent industries in recent years.

Construction of the Liddell coal-powered thermal power station began in 1970 and the Hebden mine was opened the same year. Lake Liddell is a man-made lake that supplies cooling water for Liddell Power Station. A number of landowners had their properties purchased by the Electricity Commission around 1972, including the study area, and while the mine and the Electricity Commission created a number of jobs for the community, the expansion of land reserved for mining resulted in the movement of many local businesses out of the district.

The buildings located in the Hillcrest offset area were already dilapidated and unoccupied at the time of the heritage study in 1996. At that time the land was owned by the Electricity Commission. AZSA Pastoral Holdings purchased Hillcrest from Liddell Tenements on 28/10/2011. The property continued to be used for cattle grazing until 2014 when all cattle were removed as the result of the Biodiversity Offset Area requirements.

The late 19th and early 20th century subdivision of large land grants and development in the area is represented by a number of small houses in the Lake Liddell area. Individually they are not all of heritage significance, however, considered as a group, they provide evidence of the later subdivision development and use of the area (Hillcrest SHI listing).

2.2 Site description

Ravensworth Operations purchased the Hillcrest property as a means of mitigating mining impacts through the establishment of biodiversity offsets. The Hillcrest biodiversity offset area supports regionally

significant vegetation communities, particularly the Central Hunter Ironbark-Spotted Gum-Grey Box Forest and the Barrington Footslopes Dry Spotted Gum Forest. The area also provides known habitat for 12 threatened species including the spotted tailed quoll. The property is being improved through the removal of weeds and re-establishment of previously heavily-cleared areas to provide additional fauna habitat and connectivity with adjacent forested and rehabilitated areas. Since the removal of grazing from the site, widespread natural regeneration has occurred in many areas of the study area (Glencore Conservation Fact Sheet).

Four abandoned and dilapidated residences / groups of buildings are located in the offset area. These buildings were related to the pastoral activities on the site and were later probably tenanted by local workers. Apart from the sheering shed, all structures are in very poor condition or have completely collapsed. Many of the buildings have been subject to damage from squatters and vandalism which is likely to have hastened the deterioration of the structures. The abandoned buildings are accessed by the original dirt road that winds through the site from Hebden Road.

In 2013 Hazmat Pty Ltd conducted an inspection of the structures situated in the Hillcrest Offset Area. All of the houses and some of the surrounding structures were noted to contain either asbestos cement or asbestos containing materials, either in the standing buildings, or on the ground around the buildings. The asbestos continuing material is defined as friable and severely deteriorated. The risk assessment prepared for the site was, however, calculated as low mainly due to the remote location and minimal accessibility.

2.2.1 Fairview

Located in the southern part of the study area near the rail line, Fairview is a late 19th/early 20th century weatherboard cottage with hipped iron roof, slab kitchen extension, various animal pens and out-buildings, water tanks fencing and exotic plantings. The Fairview group is listed in Muswellbrook LEP 2009 as a local heritage item (I47) and has been previously referred to as the ‘bottom house’.

Figure 3 Configuration of the Fairview buildings

When listed as a heritage item, the building was still standing, however it has now entirely collapsed. The cottage had pressed metal ceilings, verandah on three sides and additional buildings to the north and east. There is no evidence of a chimney. A large collapsed corrugated iron shed is located to the south east of the cottage and another concrete and iron structure with a below ground cistern is located to the south. These buildings are located on what was formerly J H Zerk's land and were associated with dairying activities on the property.

Figure 4 The remains of Fairview and associated outbuildings

Figure 5 Latter additions to the rear and north of Fairview showing asbestos lining

Figure 6 View of the shed to the south east

Figure 7 Cistern located to the south of Fairview

2.2.2 Hillcrest

Hillcrest is the largest building within the offset area. It is located 720m to the north east of Fairview. The Hillcrest group is listed in Muswellbrook LEP 2009 as a local heritage item (I48) and has been previously referred to as the 'main house'. It is a single storey weatherboard Federation Bungalow constructed in the early 20th century. It has a hipped iron roof, two plain brick chimneys, a south facing verandah which has been partially enclosed, glass louvres, numerous outbuildings and a tall tank stand. The eastern part of the building has collapsed. The bricks used in the fireplace and chimney and the style of the concrete front stairs certainly date the building to the early 20th century. The overall style of the building is simple and there do not appear to be any decorative elements.

Figure 8 Hillcrest main house and sheering shed to the north

Figure 9 View of collapsing eastern side of Hillcrest

Figure 10 Hillcrest rear laundry and tank stand

Figure 11 Front (southern) facade Hillcrest

Figure 12 Garage to the north west of the main house

Figure 13 Interior shearing shed

Figure 14 Exterior shearing shed

There is a corrugated iron garage and sheds to the northwest of the main building and a laundry to the rear. Pines have been planted along fence lines and some exotic planting survives around the laundry. A shearing shed is located 100m to the north of the house and is in relatively good condition with original roof, walls, timber frames and foundations intact, while the floor and sheep pens are partially intact. The shearing shed comprised of a number of iron sheets that were branded 'Lysaght ORB Australia'. John Lysaght began importing corrugated iron into Australia in the 1850s. The first Australian Lysaght manufacturing plant opened in Newcastle in 1921, producing rolled and galvanised sheets. The shearing shed therefore post-dates 1921. Hillcrest has been assessed as significant in its demonstration of architectural development during the early part of the 20th century. Hillcrest is an example of one of the less wealthy subdivisions of this period.

2.2.3 Rose cottage

A small cottage is located approximately 700m to the east of the main house. It has almost completely collapsed, but appears to have comprised of weatherboard cladding, iron roof, three rooms, a large brick fireplace and verandah facing west. The style of the building, machine made bricks and use of 'rose head' nails indicate a date of late 19th century early 20th century. There are two large corrugated iron water tanks to the north of the house and fence lines and exotic plantings, including roses, are still evident. A wrecked car dating to the 1940s is located in the paddock to the north.

Figure 15 Rose cottage

Figure 16 Rear and western facade of the cottage

Figure 17 car wreck adjacent to the cottage

Figure 18 Weatherboards on the western side of Rose Cottage

Figure 19 View south to Lake Liddell from the high ground north of the main house

Figure 20 Pines planted along fence line near the main house

Figure 21 Rose Cottage location

2.2.4 Northern Valley Cottage

This simple cottage has a timber frame, corrugated iron clad walls and roof and a verandah on three sides. The interior was never clad and the large brick chimney is partially rendered in cement. The building has exposed wiring and a tank at the rear for water supply. The western side of the building has collapsed and a bathroom has been added to the rear. The interior contains several beds and it appears to have been in use by squatters. This simple building was likely to have been constructed in the middle of the 20th century as a temporary residence for farm workers.

Figure 22 Fire place chimney and interior roof structure at the Northern Valley Cottage

Figure 23 Northern Valley Cottage, the northern verandah has collapsed

Figure 24 Out house at the Northern Valley Cottage

Figure 25 Bathroom of the Northern Valley Cottage

Figure 26 Northern Valley Cottage location adjacent to the access road through the property

3 Heritage assessment

3.1 Significance

3.1.1 Hillcrest (I48)

The Muswellbrook heritage inventory 1996 statement of significance states;

Hillcrest has local historic significance for its association with later 19th century and early 20th century land subdivision in the Lake Liddell area. Its strongest heritage value is its aesthetic significance which derives from its being a rare regional example of Federation Bungalow executed in timber. It has local scientific (archaeological) significance for its potential to reveal information which could contribute to an understanding of the economic means and lifestyles of the earliest farmers of the land in this area.

3.1.2 Fairview (I47)

The Muswellbrook heritage inventory 1996 statement of significance states;

Fairview has local historic significance for its association with later 19th century land subdivision in the Lake Liddell area. It is one of few remaining groupings of its age and type in that area. It has local scientific significance for its potential to reveal information which could contribute to an understanding of the economic means and lifestyle of the earliest farmers in this area.

3.2 Significance assessment

Before making decisions to change a heritage item, it is important to understand its values. This leads to decisions that will retain these values in the future. Statements of heritage significance summarise a place's heritage values, why it is important and why a statutory listing was made to protect these values.

The Heritage Council of NSW has developed a set of seven criteria for assessing heritage significance, which can be used to make decisions about the heritage value of a place or item. There are two levels of heritage significance used in NSW: state and local.

The following assessment of heritage significance has been prepared for all the buildings in the study area in accordance with the 'Assessing Heritage Significance' (2001) guide.

Criteria	Significance Assessment
A – Historical Significance *An item is important in the course or pattern of the local area's cultural or natural history.*	Individually the farm buildings and houses within the offset area are not of heritage significance, however, considered as a group, they provide evidence of the later development and use of the area. This is not considered to be a significant activity or historical phase. All buildings in the study area are simple utilitarian farm structures. The buildings have not been used for the purposes of farming for many decades and some are now in such poor condition they provide little evidence of their previous function.
B – Associative Significance *An item has strong or special associations with the life or works of a person, or group of persons, of importance in the local area's cultural or natural history.*	The buildings within the offset area are not associated with historically important people or events.

Criteria	Significance Assessment
C – Aesthetic Significance *An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in the local area.*	Hillcrest is an example of a Federation Bungalow executed in timber, however in such poor condition that its positive visual appeal has been more than temporarily degraded. All the other buildings in the study area are simple unitarian structures. None of the buildings within the study area display technical innovation or achievement, none are aesthetically distinctive and none exemplify a particular taste, style or technology.
D – Social Significance *An item has strong or special association with a particular community or cultural group in the local area for social, cultural or spiritual reasons.*	None of the buildings within the study area have associations with an identifiable group nor are they important to the community's sense of place. The buildings have been retained in preference to an alternative such as demolition.
E – Research Potential *An item has potential to yield information that will contribute to an understanding of the local area's cultural or natural history.*	None of the structures in the study area have archaeological or research potential. All the buildings were constructed with tongue-in-groove floorboards which impede the accumulation of an underfloor deposit. Rubbish may be buried in the yard associated with houses, however its late date means it is likely to contain information that is readily available from other resources or archaeological sites and would not provide evidence of past human activity that is unavailable elsewhere.
F – Rarity *An item possesses uncommon, rare or endangered aspects of the local area's cultural or natural history.*	None of the buildings in the study area are rare. None of the buildings demonstrate designs or techniques of exceptional interest or evidence of a significant human activity important to a community, nor do they provide evidence of a defunct custom, way of life or process.
G – Representative *An item is important in demonstrating the principal characteristics of a class of NSWs (or the local area's):* ▪ *cultural or natural places; or* ▪ *cultural or natural environments.*	Hillcrest is an example of a Federation Bungalow, however in its poor condition it has lost the range of characteristics typical of that type. The study area buildings are part of a group which could collectively illustrate farming and land subdivision, however many of the buildings are not intact and are not fine examples of their type.

3.3 Summary

The later 19th and early 20th century subdivision and development is represented by a number of farms and small houses in the Lake Liddell area. Most of the structures within the study area are no longer intact and although they can be considered as representative of pastoral and dairying activities, this evidence is found widely across New South Wales and Australia.

The extremely poor condition of most of the buildings at the time of site inspection (May 2018) has resulted in diminution of the listed items heritage values. No additional heritage values were identified in any of the other structures in the offset area. None of the structures in the study area have functioned as farm buildings for many decades. Both Hillcrest and Fairview are considered to have lost their ability to demonstrate their heritage values and are so dilapidated that they fail to meet the relevant assessment criteria for listing at the local level.

4 Heritage Management

Despite the offset area's reasonably remote location, it is clear that members of the public have accessed the property and have either squatted in the buildings or removed timber and other building materials over time. Asbestos signs and temporary fencing was installed and appears to have reduced the incidence of vandalism to the buildings, however Kangaroos and cattle have breached and in places broken the fencing.

In 2013 Hazmat Pty Ltd conducted an inspection of the structures situated in the Hillcrest Offset Area. All of the houses and some of the surrounding structures were noted to contain either asbestos cement or asbestos containing materials, either in the standing buildings, or on the ground around the buildings.

The asbestos containing material is defined as friable and severely deteriorated. While the buildings are not easily accessible, the asbestos debris is exposed to natural ventilation and people visiting or working at the site could inhale airborne fibre due to wind or disturbance.

4.1 Muswellbrook LEP 2009

According to the Muswellbrook LEP 2009 the following is applicable in regard to heritage items;

5.10 Heritage Conservation

1. The objectives of this clause are as follows:

    (a) to conserve the environmental heritage of Muswellbrook,
    (b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,
    (c) to conserve archaeological sites,
    (d) to conserve Aboriginal objects and Aboriginal places of heritage significance.

2. Development consent is required for any of the following:

    a) demolishing or moving a heritage item or altering the exterior of a heritage item (including, making changes to its detail, fabric, finish or appearance),

    b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item.

3. Development consent is not required if:

    (i) is of a minor nature or is for the maintenance of the heritage item,

    (ii) would not adversely affect the heritage significance of the heritage item.

The Muswellbrook DCP 2009 does not contain any additional controls for works to heritage items

4.2 Recommendations

- Fencing off and restricting access to all buildings and surrounds containing asbestos should be a first priority. The fences should be high enough and strong enough to prevent animal and human interference in the contaminated areas. Asbestos warning signs should be clearly displayed on all fencing.

- Muswellbrook Council's Heritage Advisor, recommends the "fencing off" and retention of the heritage items as the preferable outcome. Fairview and Hillcrest should be fenced and left to decay naturally. Reconstruction of Fairview and Hillcrest is not a viable option considering their condition. In addition, the land is being rehabilitated and public access is not available.

- Buildings within the offset area that are not identified as heritage items can be fenced or asbestos can be removed from interior and exterior areas without Council consent. Demolition of buildings and building material not identified as heritage items can also be undertaken without Council consent. The shearing shed is in relatively good condition and should be retained.

- The asbestos contamination risk assessment prepared for the site by Hazmat in 2013 was calculated as 'low' mainly due to the remote location and minimal accessibility. Restriction of access to the site was recommended until asbestos containing debris can be remediated. If asbestos removal is to occur, it should be undertaken in accordance with the Hazmat recommendations and relevant guidelines.

- Asbestos removal should not result in additional damage to the heritage items. Both Fairview and Hillcrest are structurally unsound and pose risks to those working in the area. Removal of asbestos on the ground surrounding the buildings is unlikely to result in further damage to the heritage items and can be undertaken without Council consent. Removal of asbestos from internal areas will result in damage to the heritage items and cannot be undertaken without consent from Council.

- If in the future any of the heritage items within the offset area are considered a safety risk and demolition is considered an option, an archival photographic record of the remaining structures should be prepared in accordance with the NSW Heritage division of the Department of Environment and Heritage guidelines, *Photographic Recording of Heritage Items using Film or Digital Capture.*

- Total or partial demolition or removal of a listed heritage item will only be considered under exceptional circumstances such as health or safety risk.

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http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2120046

State Heritage Inventory - Hillcrest
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ecological AUSTRALIA

ISO 14001 Environmental Management

AS/NZS 4801:2001 Occupational Health and Safety Management

ISO 9001 Quality Management

HEAD OFFICE
Suite 2, Level 3
668-672 Old Princes Highway
Sutherland NSW 2232
T 02 8536 8600
F 02 9542 5622

CANBERRA
Level 2
11 London Circuit
Canberra ACT 2601
T 02 6103 0145
F 02 9542 5622

COFFS HARBOUR
35 Orlando Street
Coffs Harbour Jetty NSW 2450
T 02 6651 5484
F 02 6651 6890

PERTH
Suite 1 & 2
49 Ord Street
West Perth WA 6005
T 08 9227 1070
F 02 9542 5622

MELBOURNE
Level 1, 436 Johnston St
Abbotsford, VIC 3076
T 1300 646 131

SYDNEY
Suite 1, Level 1
101 Sussex Street
Sydney NSW 2000
T 02 8536 8650
F 02 9542 5622

NEWCASTLE
Suites 28 & 29, Level 7
19 Bolton Street
Newcastle NSW 2300
T 02 4910 0125
F 02 9542 5622

ARMIDALE
92 Taylor Street
Armidale NSW 2350
T 02 8081 2685
F 02 9542 5622

WOLLONGONG
Suite 204, Level 2
62 Moore Street
Austinmer NSW 2515
T 02 4201 2200
F 02 9542 5622

BRISBANE
Suite 1, Level 3
471 Adelaide Street
Brisbane QLD 4000
T 07 3503 7192

HUSKISSON
Unit 1, 51 Owen Street
Huskisson NSW 2540
T 02 4201 2264
F 02 9542 5622

NAROOMA
5/20 Canty Street
Narooma NSW 2546
T 02 4302 1266
F 02 9542 5622

MUDGEE
Unit 1, Level 1
79 Market Street
Mudgee NSW 2850
T 02 4302 1234
F 02 6372 9230

GOSFORD
Suite 5, Baker One
1-5 Baker Street
Gosford NSW 2250
T 02 4302 1221
F 02 9542 5622

ADELAIDE
2, 70 Pirie Street
Adelaide SA 5000
T 08 8470 6650
F 02 9542 5622

1300 646 131
www.ecoaus.com.au