



Appendix 14

Aboriginal Cultural
Heritage Assessment



ACHM
AUSTRALIAN CULTURAL
HERITAGE MANAGEMENT

ACHAR

United Wambo Open Cut Coal Project

Aboriginal Cultural Values Assessment Report

By: Dr Shaun Canning

Date: July 2016

Client Name: Glencore Coal Assets Australia Pty Ltd

Client Contact: Aislinn Farnon

Phone: 02 6578 9506

Email: Aislinn.Farnon@glencore.com.au

BRISBANE

LEVEL 19, 10 EAGLE STREET
BRISBANE, QLD, 4000

MELBOURNE

40 MELBOURNE STREET
KILMORE, VIC, 3764

SYDNEY

LEVEL 36
1 MACQUARIE PLACE
CIRCULAR QUAY, NSW, 2000

1300 724 913

email@achm.com.au

www.achm.com.au

United Wambo Open Cut Coal Project

Aboriginal Cultural Values Assessment Report

By: Dr Shaun Canning

Date: July 2016

Client Name: Glencore Coal Assets Australia Pty Ltd

Client Contact: Aislinn Farnon

Phone: 02 6578 9506

Email: Aislinn.Farnon@glencore.com.au

Document Control Information

Document information
Client: Glencore Coal Assets Australia Pty Ltd Client Contact: Aislinn Farnon Title: United Wambo Open Cut Coal Project Subtitle: Aboriginal Cultural Values Assessment Report Our Ref: GC01 Date: July 2016

Version	Date	Details
2.0	27 July 2016	

Recipient Name	Organisation	Hardcopy	Electronic	Transmission Method	Purpose	Date
Tim Walls	Glencore Coal Australia		X	Email	Final Report	27 July 2016

Ownership and Disclaimer

Ownership of the intellectual property rights of ethnographic information provided by Aboriginal people remains the property of those named persons.

Ownership of the primary materials created in the course of the research remains the property of Australian Cultural Heritage Management (Victoria) Pty Ltd.

This document remains the property of Glencore Coal Assets Australia Pty Ltd. This document may not be used, copied, sold, published, reproduced or distributed wholly or in part without the prior written consent of Glencore Coal Assets Australia Pty Ltd.

This document has been prepared in accordance with the brief provided by Glencore Coal Assets Australia Pty Ltd and has relied upon information provided by the client, or collected during the completion of the document and under the conditions specified in the document. All findings, conclusions and recommendations contained in the document are based on the aforementioned circumstances. The document is for the use of Glencore Coal Assets Australia Pty Ltd in addressing their brief and no responsibility is taken for the documents use by other parties.

The professional advice and opinions contained in this document are those of the consultants, Australian Cultural Heritage Management (Victoria) Pty Ltd, and do not represent the opinions and policies of any third party.

The professional advice and opinions contained in this document do not constitute legal advice.

Spatial Data

Spatial data captured by Australian Cultural Heritage Management (Victoria) Pty Ltd in this document for any newly recorded sites has been obtained by using hand held or differential GPS units using the GDA94 co-ordinate system.

Abbreviations

Term	Meaning
AHIP	Aboriginal Heritage Impact Permit
AMBS	Australian Museum Business Services
ATSIHP	Aboriginal and Torres Strait Islander Heritage Protection Act 1984
CATSI Act	Corporations (Aboriginal and Torres Strait Islander) Act 2006
CHPP	Coal Handling Preparation Plant
DA	Development Application
DEC	Department of Environment and Conservation (now OEH)
DECC	Department of Environment and Climate Change (now OEH)
DECCW	Department of Environment, Climate Change and Water (now OEH)
DGRs	Director General Requirements, being the specific environmental assessment requirements to be addressed by an EIS for a Project
DP&I	New South Wales Department of Planning and Infrastructure
DUAP	Department of Urban Affairs and Planning
EEC	Endangered Ecological Community
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
Glencore	Glencore Pty Ltd
HMA	Habitat Management Area
HRSTS	Hunter River Salinity Trading Scheme
ICOMOS	International Council on Monuments and Sites
IMT	Indurated Mudstone Tuff
JRAHS	Journal of the Royal Australian Historical Society
ML	Mining Lease
MNES	Matters of National Environmental Significance
Mt	Million(s) of Tonnes
Mtpa	Million(s) of Tonnes per annum
NP&W Act	National Parks and Wildlife Act 1974 (Amendment 2010)
NPWS	National Parks and Wildlife Service
NSW	New South Wales
OEH	Office of Environment and Heritage
OzArk	OzArk Environmental & Heritage Management
PCWP	Plains Clan of the Wonnarua People
PEA	Preliminary Environmental Assessment
POM	Plan of Management
Project Area	Defined area within which a proposed development would occur, although portions of the Project Area may not be within the Project's disturbance footprint. The Project Area normally is the subject of the Environmental Impact Statement, which considers both the development area and surrounding lands.
Project Disturbance Area	Defined area that would be disturbed if a proposed development was approved. The Project Disturbance Area occurs within the broader Project Area or assessment area.
RAP	Registered Aboriginal Party
RERR	Ravensworth East Resource Recovery
ROM	Run of Mine
SEPP	State Environmental Planning Policy
SoE Report	State of Environment Report
TP	Test Pit
TSC Act	Threatened Species Conservation Act 1995
TSR	Travelling Stock Route
VCA	Voluntary Conservation Area
WLALC	Wonnarua Local Aboriginal Land Council
WNAC	Wonnarua Nation Aboriginal Corporation
WTC	Wonnarua Traditional Custodians

Acknowledgements

The United and Wambo JV Project would like to acknowledge the Traditional Owners of the Project Area of assessment – the Wonnarua People – and pay respect to their cultural heritage, beliefs and continuing relationship with the land.

We would also like to acknowledge the post-contact experiences of Aboriginal peoples who have attachment to the Project Area and surrounds.

We pay respect to the Elders, both past and present, for they hold the memories, traditions, culture and hopes of Aboriginal people in the area.

We thank the Registered Aboriginal Parties, their families and elders for their engagement in this Project. Their willingness to participate in discussions during land visits and to contribute in a meaningful way during workshops is greatly appreciated.

Executive Summary

The United Wambo project is located within the Hunter Coalfields in the Upper Hunter Valley of New South Wales (NSW) approximately 16 kilometres west of Singleton.

Glencore and Peabody are seeking development consent for the United Wambo Project (the Project), to extract additional mineable resources through open cut mining methods.

The Project, if approved, will enable extraction of approximately 10 million tonnes ROM coal per annum of additional mineable coal beyond the current mining approvals. These additional mineable coal tonnes would extend the mine life to approximately 2039.

The Project is a State Significant Development under SEPP (State and Regional Development) 2011, and as such, the proponents are seeking development consent for the Project under Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act). An Environmental Impact Statement (EIS) is being prepared for the Project, to understand the likely impacts of the Project, as part of the development application process.

Aboriginal Cultural Heritage Values Report

An Aboriginal Cultural Heritage Assessment (ACHAR) has been undertaken by United Wambo (Glencore) and Australian Cultural Heritage Management (ACHM) in collaboration with the Project's Registered Aboriginal Parties (RAPs) and Knowledge Holder groups in order to assess the Aboriginal cultural heritage values associated with the proposed Project Area.

This ACHAR contains the relevant background information to the project, the consultation methodology and outcomes, the cultural values and significance assessments along with a suite of recommendations provided to mitigate the harm to be caused by impacts to the cultural heritage of the Project Area.

The Project is located in the traditional country of the Wonnarua people. The Project Area and its impacts (Project Disturbance Area) are also within the Wanaruah Local Aboriginal Land Council boundary. Through the involvement of RAPs who identify a range of connections to both country and community, and through a number of past cultural heritage investigations, the region surrounding the Project Area is known to contain a number of archaeological sites and to also hold certain cultural, historic and aesthetic values. The wider region has been identified as being of high cultural significance to many Wonnarua people, however the Project Area has been assessed during this ACHAR process as holding lower cultural significance than much of the surrounding region.

As well as consulting with the RAPs, United and ACHM consulted with three Knowledge Holder groups (namely the Plains Clans of the Wonnarua People (PCWP), the Wonnarua Traditional Custodians (WTC) and the Wonnarua Nation Aboriginal Corporations (WNAC). These groups were commissioned to produce their own Aboriginal Cultural Heritage Values Assessment Reports by United, which incorporate the cultural, historic and aesthetic values of their members (and specifically Elders) in the reports written by these groups.

Unfortunately, no report was forthcoming from the WTC so alternative consultations were undertaken by the Project which are documented in this report. The full PCWP and the publicly available recommendations from the WNAC report were available for this ACHAR. Cultural values assessment for the Community RAPs was undertaken by ACHM. The understanding of significance and the RAPs recommendations has also informed United in the development of a range of cultural heritage management recommendations. The publicly disclosed ACHAR documents from the Knowledge Holder groups are included in this report.

A stand-alone Aboriginal Archaeological Values Assessment report was prepared by OzArk Environmental and Heritage Management (OzArk) to assess the archaeological values of the Project and provide management recommendations for sites within the Project Disturbance Area.

Assessment Approach

The ACHAR has been prepared in accordance with:

- The Secretary's Environmental Assessment Requirements (SEARs) for the Project;
- The Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation' (DEC 2005);
- The principles of The Burra Charter (Australia ICOMOS 2013);
- The Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010); and
- The key elements of the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011).

Consultation Process

United have undertaken consultation consistent with the DEC (2005) and DECCW (2010a) guidelines and in accordance with the principles of The Burra Charter (Australia ICOMOS 1999). This has involved four consultation stages as detailed below.

Stage 1: United conducted formal notification of the proposed Project and the ACHAR process, and provided the opportunity for local Aboriginal people to formally register their interest in the Project.

Stage 2: United and ACHM conducted initial Project description consultation, which included presenting information on the proposed Project to all Aboriginal parties (including the Local Aboriginal Lands council – WLALC) who registered an interest in **Stage 1**. This consultation included details of the Project Area and proposed impacts, proposed avoidance of harm measures and a description of works proposed. Initial consultation also presented the draft Aboriginal Cultural Heritage Assessment and Consultation Methodology for review by the RAPs, as well as an overview of the Draft Aboriginal Heritage Survey Methodology. Copies of this information were shared with all RAPs. Consultation with the RAPs involved a combination of consultation forums, including one on one meetings, small and large group briefing sessions, including a Project Area Inspection and site induction. **Stage 2** also included the briefings of the PCWP, WTC and WNAC including scopes of work and contracts.

Stage 3: United, OzArk and ACHM conducted further consultation which refined the cultural heritage assessment approach with the Community RAPs. The approach actively involved the Community RAPs in the assessment of their cultural heritage values, the likely Project impacts, if approved, and the development of management measures.

As part of the assessment approach United also conducted regular consultation; and provided support and advice to the PCWP, WTC and WNAC in relation to the Project, and information requirements in relation to the preparation of their separate ACHARs. To assist the groups, United provided access to materials and land, to enable them to assess their cultural heritage values, the likely Project impacts, and their suggested management measures.

Stage 4: United, OzArk and ACHM conducted further consultation in relation to the RAPs review of the Projects draft cultural heritage assessment report, to seek feedback, modify reports as appropriate, receive and review submissions and to incorporate any additional input into the finalised ACHAR. The mandatory 28 day review period during Stage 4 was extended by United for approximately 2 months to allow for additional consultation between PCWP and the project team. Comments on the Draft ACHAR were received from the PCWP and WNAC, with the PCWP's comments the most extensive. United and ACHM conducted further consultation with PCWP in relation to their feedback in order to further understand any concerns and to amend the finalised ACHAR outcomes as appropriate.

Registered Aboriginal Parties

Throughout the course of the Project's consultation program, 83 Aboriginal people registered an interest in the Project.

The RAPs included individuals from:

- Three Knowledge Holder groups (PCWP, WNAC and WTC) representing many of the registered RAPs;
- The Wanaruah Local Aboriginal Land Council;
- Individual Aboriginal RAPs.

A full list of all RAPs is contained in **Appendix 11.2**.

All RAPs were invited to participate in the assessment process from the time of their registration, with extensive consultation undertaken to inform Project design, the ACHAR, the Archaeological Values Assessment undertaken by OzArk and the broader environmental assessment of the Project.

Participation opportunities have been provided to the RAPs through:

- workshops;
- individual meetings;
- development of 2 independent cultural heritage values assessments by PCWP and WNAC;
- archaeological investigations including survey and test excavation fieldwork onsite;
- 'Walks on Country'; and
- Extensive correspondence via phone and email.

Full records of all consultation are included in **Appendix 11.3**.

Throughout the Project, information was provided to RAPs in formal meetings and presentations and via email or phone contact. Full details of the consultation process undertaken in relation to the ACHAR are contained in **Section 3** and copies of correspondence are contained in Appendix 11 (Consultation Records).

The consultation approach also provided the RAPs with opportunities to decide in what manner they wanted their information shared and to identify any restricted access provisions. It allowed the RAPs to contribute their cultural knowledge through United and/or ACHM, or through the preparation of one of the independent reports (PCWP, WTC or WNAC). The process provided opportunities to identify a range of Aboriginal cultural values within the Project area. This included social, historic, scientific, aesthetic and spiritual values. Due to circumstances beyond the control of Glencore, an ACHAR was not produced by WTC for this project. Additional consultation was held via a workshop with WTC members to capture any cultural values relevant to the Project area.

Where values have been provided by the RAPs as an outcome of the consultation process, they have been recorded and presented in this ACHAR. These values are discussed further in **Section 6**.

Archaeological Values Assessment Results

An Aboriginal archaeological values assessment was undertaken by OzArk Environment and Heritage (OzArk) alongside this Aboriginal cultural values assessment.

The majority of sites identified have been assessed as having low scientific significance. The overall low scientific significance of the new sites is directly related to the extensive and long-running previous disturbances within the Proposed Project Disturbance Area.

The archaeological values assessment report is a separate stand-alone report.

Aboriginal Cultural Heritage Impact Assessment

RAPs consulted for the ACHAR identified concerns with current and future mining within the United Project area and the broader region, and that this mining poses a significant threat to Aboriginal cultural heritage values. It is believed that mining continues to cause fragmentation to the cultural, spiritual and historic values of the cultural landscape including degradation to important waterways.

Direct Impacts

The Project will directly impact a number of archaeological sites if approved, as outlined in the separate Archaeological Values Assessment Report.

Indirect Impacts

The Project may also result in indirect impacts on Aboriginal cultural heritage values. The indirect impacts identified by the RAPs included:

- Difficulty in remembering the landscape as it was prior to mining,
- Difficulty for Wonnarua people in accessing much of the land in the Hunter Valley due to private ownership and/or mining,
- Regardless of the current condition and/or status of the land in question, Wonnarua people still feel a direct connection to the country of their ancestors, which would be further disrupted by more mining,
- The predicted direct and indirect impact on the Aboriginal cultural heritage values of the Project Disturbance Area add to the cumulative impact of mining development on the cultural heritage resource of the upper Hunter Valley.

The Project team did receive positive feedback regarding the indirect intergenerational impacts of this ACHAR process where it has allowed stakeholders to involve themselves in detailed archaeological and cultural surveys, to have discussions with family members and particularly Elders who may not otherwise have been involved. This has allowed the RAPs to draw out knowledge from these Elders which may have not previously been known, and to present those cultural heritage values in reports largely written by themselves.

Cumulative Impacts

Though the Project has been designed to avoid harm wherever practicable and the archaeological significance of the majority of sites within the Project Disturbance Area is low, the Project's impacts will further contribute to the cumulative loss of Aboriginal cultural values and archaeological sites within the local area, and the region more generally.

Avoidance of Harm

In developing the footprint and the disturbance zone of the proposed Project United has considered numerous mining options, layouts, overburden emplacements and infrastructure arrangements to optimise the Project's final design.

Aboriginal Cultural Heritage Management Measures

The management measures proposed for the Project align to the Principles of the Burra Charter (ICOMOS, 1999) and to the Aboriginal Community Wellbeing toolkit and criterion from OEH (OEH 2012).

As a result of this assessment process, three of the eight wellbeing principles have been identified as priority areas most aligned to the context of the Project. The three principles most aligned are the following:

- Caring for Land and/or Cultural Awareness;
- Bringing People Together, and
- Education and learning.

These principles, in conjunction with the consultation outcomes with the RAPs, have informed the development and evaluation of management measures proposed for the Project.

Further, the following key considerations also guide the Project's recommendations and management outcomes:

- Alignment of the outcomes with the principles of the Strengthening Aboriginal Community Wellbeing Toolkit (OEH 2012) and the Burra Charter (2013);
- Aligning the recommendations with the findings of this ACHAR;
- Delivery of proposed management measures which are achievable;
- Includes a mix of short term and long term management measures and implementation periods; and
- Foster and promote intergenerational equity through caring for country, education and research initiatives.

Management Recommendations

A range of management recommendations are presented in **Section 8**. These recommendations have been developed in conjunction with the RAPs for the Project.

The Project ACHAR management measures are based on the key themes and values of the RAPs which have been identified through the ACHAR process.

The proposed management and mitigation measures have also been separated into those located onsite (within the Project Area) and those which are offsite (outside the Project area or not requiring physical works within the Project Area). The management and mitigation measures have also been developed to address intergenerational equity aspects and to respect the regional significance of culturally significant features which surround the Project Area. These management measures have been developed in order to be consistent with the management measures recommended by the RAPs during this ACHAR process.

Table of Contents

Ownership and Disclaimer	iii
Spatial Data	iii
Abbreviations	iv
Acknowledgements	v
Executive Summary	vi
Table of Contents	x
List of Figures.....	1
List of Maps	1
List of Tables.....	1
1 Introduction	3
1.1 Structure of the Report	3
1.2 Key Issues	4
1.2.1 Roadmap of the Report.....	4
1.2.2 Aboriginal Cultural Heritage Assessment Approach and Objectives.....	4
1.3 ACHAR Consultants	5
1.3.1 Structures of the Knowledge Holder Groups	5
1.3.2 Other Consultant Input	6
1.3.3 About Dr Shaun Canning	6
1.4 Project Overview	7
1.5 Environmental Assessment Requirements	11
1.5.1 Secretary’s Environmental Assessment Requirements (SEARs).....	11
1.6 Legislative Environment.....	11
1.6.1 Commonwealth Legislation.....	11
1.6.2 State Legislation	12
1.7 Statement of Compliance.....	13
2 Description of the Activity Area.....	14
2.1 Land Ownership	14
2.2 Environmental Overview.....	16
2.2.1 Topography / Landforms and Drainage.....	16
2.2.2 Geological Features	20
2.2.3 Coal Resources	20
2.2.4 Vegetation	20
2.3 Post -Contact Land Use and Approvals History.....	21
2.3.1 Initial Agricultural Landuse.....	21
2.3.2 Dairying	21

233	Horse Breeding	22
234	Viticulture	22
235	Mining.....	22
236	United Collieries Pty Ltd	23
2.4	Historical Themes.....	29
3	Aboriginal Community Consultation.....	30
3.1	Consultation Objectives and Approaches	30
3.2	Summary of Consultation Activities	32
3.3	Cultural Heritage Assessment Process for the Project.....	32
3.3.1	Four Stages of Consultation and Assessment	32
3.4	Stage 1 Consultation – Notification and Registration of Interest	35
3.4.1	Agency Notification	35
3.4.2	Public Notification	35
3.4.3	Written Notification to invite Participation in the ACHAR Process.....	35
3.4.4	Registration of Aboriginal Parties.....	35
3.5	Stage 2 - Further Consultation and Site Tours	36
3.5.1	ACHAR agreements from PCWP, WNAC and WTC.....	36
3.6	Stage 3 Consultation – Cultural Values / Impact Assessment and Development of Management Measures.....	37
3.6.1	Feedback	41
3.7	Stage 4 Consultation – Draft ACHAR Review	41
3.7.1	Aboriginal Cultural Values Assessment Feedback.....	41
4	Summary and Analysis of Background Information.....	42
4.1	Historical Narrative of the Project Area	42
4.1.1	Prior to White Settlement	42
4.1.2	Post European Settlement	45
5	Archaeological Assessment of the Project Area	48
5.1	Effect of disturbance on the archaeological landscape	48
5.2	Archaeological Discussion and Management: Summary	49
5.3	Assessment of Scientific Significance	49
5.3.1	Assessment of Scientific significance	50
5.3.2	Assessment of Scientific Significance: Summary.....	55
5.3.3	Archaeological Management: Summary	55
5.3.4	Assessment of Scientific significance	59
6	Cultural Heritage Values and Significance Assessment	65
6.1	Definition of Cultural Significance.....	65
6.2	Nature of Cultural Significance	65
6.2.1	Aesthetic Value.....	65
6.2.2	Historic Value	65
6.2.3	Scientific Value	66
6.2.4	Social Value	66

6.25	Spiritual Value	66
6.3	Degree of Cultural Significance	66
6.3.1	Rarity	66
6.3.2	Representativeness	67
6.3.3	Condition, Integrity and Authenticity.....	67
6.4	United Cultural Heritage Values.....	67
6.4.1	Limitations	67
6.5	Cultural Values of the Wonnarua Nation Aboriginal Corporation (WNAC)	68
6.6	Cultural Values of the Plains Clan of the Wonnarua People (PCWP).....	72
6.7	Cultural Values of the Wonnarua Traditional Custodians (WTC).....	73
6.8	Cultural Values of the Community RAP's	73
6.8.1	Dominant Themes	74
6.8.2	Summary Opinion.....	74
6.9	Consolidated Cultural Values	75
6.10	Consolidated Statement of Significance	77
6.11	Conclusions	77
7	Avoidance of harm.....	78
7.1	Project Rationale	78
7.2	Opportunities to avoid impact	78
7.3	Sustainable Development Principles.....	78
8	Recommendations	80
8.1	Introduction	80
8.2	Management Measures	80
8.2.1	Aboriginal Cultural Heritage Management Plan	81
8.2.2	The proposed management measures from the Knowledge Holder Groups and RAPs	81
8.2.3	Proposed Management Measures	86
8.3	Management Measures - No Project Approval Scenario.....	89
9	Bibliography	90
10	Glossary.....	92
11	Appendices.....	100
11.1	Table of all Consultation Activities.....	101
11.2	List of 83 RAPs for the Project.....	105
11.3	Consultation Documentation	107
11.3.1	Public Notices	112
11.3.2	Information Session (17th February 2015).....	113
11.3.3	Example Letter inviting RAPs to cultural values site tour and workshop.....	139
11.3.4	Example Letter inviting RAP's to Impact and Mitigation Measures Workshop	141
11.3.5	Invitation for Proposal from PCWP	143
11.3.6	Invitation for Proposal from WNAC.....	148
11.3.7	Invitation for Proposal from WTC	153

11.3.8	Archaeological Survey and Test Excavation Methodology - Draft One.....	158
11.3.9	Additional Archaeological Survey Methodology	177
11.3.10	Archaeological Survey Methodology Recipients	185
11.3.11	Feedback from Tocumwal - 10 June 2015	189
11.3.12	Feedback from Tocumwal - 8 July 2015	191
11.3.13	Archaeological Test Excavation Comments - Response to PCWP	196
11.3.14	Final Archaeological Test Excavation Methodology	199
11.3.15	Feedback from Tocumwal - 10 February 2016.....	224
11.3.16	WLALC Feedback - 18 February 2016.....	233
11.3.17	Archaeological Test Excavation Comments - United response to PCWP	235
11.3.18	Archaeological Test Excavation Comments - United response to WLALC.....	236
11.3.19	Peer review of OzArk report.....	237
11.3.20	Tocumwal Response to Peer Review.....	242
11.3.21	Glencore Response to PCWP 1st June Letter	246
11.3.22	Response from PCWP	250
11.3.23	Feedback from WNAC	251
11.4	Plains Clans of the Wonnarua Peoples ACHAR	255
11.5	Wonnarua Nation Aboriginal Corporation ACHAR.....	256

List of Figures

Figure 3-1: Integrated ACHAR approach. Please note, no ACHAR was received from WTC.....	31
Figure 3-2: Key dates for the consultation processes of the United Wambo Open Cut Coal Mine Project.	34
Figure 4-1: The boundary lines of the Wonnarua and their neighbours according to Norman Tindale (1940).....	43
Figure 4-2: A canoe from the Hunter Valley. It is made from one single piece of bark and was designed for the quiet waters of the area's inland rivers (Australian Museum, 2010).	45
Figure 11-1: Notification of project to OEH.	108
Figure 11-2: List of persons who registered for the project as at 6th March 2015.	111
Figure 11-3: Public Notice.	112

List of Maps

Map 1-1: Location of the Project Area.	9
Map 1-2: Existing United Project Area.	10
Map 2-1: Land Ownership.	17
Map 2-2: Soil systems within the Project Area and surrounds	18
Map 2-3: Vegetation communities within the Project Area and surrounds	19
Map 2-4: Aerial photograph of a cleared but largely intact landscape taken in 1963.....	24
Map 2-5: Aerial photograph of the area taken in 1971. Mining activity has commenced in the lower right of the Project Area.	25
Map 2-6: Aerial photograph of the area taken in 1983.....	26
Map 2-7: Aerial photograph of the area taken in 1992.....	27
Map 2-8: Aerial photograph of the area taken in 2001.....	28

List of Tables

Table 1-1: Report Roadmap.....	4
Table 1-2: Organisations engaged by United to produce their own ACHAR.	5
Table 1-3: EIS and ACHAR Consultants engaged by United.	6
Table 1-4: Key features of the proposed Project.	8
Table 1-5: Secretary's Environmental Assessment Requirements	11
Table 2-1: Schedule of Lands.	14
Table 2-2: Area under Cultivation - Counties of Brisbane, Northumberland, Hunter and Durham (JRAHS, 1953).....	21
Table 2-3: Historical Themes Relevant to the Project Area and Locality.....	29
Table 3-1: Consultation activities and site tours conducted during Stage 2 of the ACHAR.....	36
Table 3-2: Stage 3 consultation activities for the United Project	38
Table 3-3: Table of Stage 4 ACHAR Comments.....	41
Table 5-1: Scientific significance of newly recorded sites.....	50
Table 5-2: Significance assessment for all amended previously recorded sites.....	52
Table 5-3: Scientific significance of all previously recorded sites outside of sites designated during this assessment.....	54

Table 5-4:	Archaeological recommendations for the management of Category 1 sites	56
Table 5-5:	Scientific significance assessment, Project impact and management category of all Aboriginal sites within the Survey Area Click-here-to-type-caption	57
Table 5-6:	Scientific significance of newly recorded sites.....	59
Table 5-7:	Significance assessment for all amended previously recorded sites.....	62
Table 5-8:	Scientific significance of all previously recorded sites outside of sites designated during this assessment.....	63
Table 6-1:	Consolidated Cultural Values	76
Table 8-1:	Community RAP recommendations.....	82
Table 8-2:	Recommendations made by the Wanaruah Local Aboriginal Land Council.....	82
Table 8-3:	Recommendations made by the Plains Clan of the Wonnarua People	82
Table 8-4:	Recommendations made by the Wonnarua Traditional Custodians.....	83
Table 8-5:	Recommendations made by the Wonnarua Nation Aboriginal Corporation.....	83
Table 8-6:	This table is a consolidated management recommendations table based on the preceding management recommendations tables from the PCWP, WTC, WNAC and Community RAPs. Each management action item is cross-referenced to its source (i.e. the 4th recommendation made by the Wonnarua Nation Aboriginal Corporation is shown as WNAC04).....	85
Table 8-7:	Proposed On Site Management Measures	87
Table 8-8:	Proposed Off-Site Management Measures.....	88

1 Introduction

The Project Area (See Map 1-1) is located within the Hunter Coalfields in the Upper Hunter Valley of New South Wales (NSW). It is situated within a regional area primarily surrounded by other mining operations and rural and rural residential landholdings.

The United Mine (United) and Wambo Mine (Wambo) are situated approximately 16 kilometres (km) west of Singleton in the Hunter Valley of New South Wales (NSW). United is owned 95 per cent by Glencore Coal Pty Limited (Glencore) and 5 per cent by the Construction, Forestry, Mining and Energy Union (CFMEU) and is managed by Glencore. Wambo is an existing coal mining operation and is a neighbour operation to United. Wambo Coal Pty Limited (Wambo Coal) is a subsidiary of Peabody Energy Australia Pty Limited (Peabody).

The United and Wambo coal mining operations were established in 1989 and the late 1960's, respectively. There have been a range of underground and open cut coal mining operations at both of these adjoining coal mines since that time, with a number of agreements entered into by United Collieries Pty Limited (United Collieries) and Wambo Coal over time in relation to access to underground and open cut coal reserves within mining titles held by each company.

Mining is the largest presence within the local area with a large proportion of the surrounding properties owned by mining companies.

This Aboriginal Cultural Heritage Assessment Report (ACHAR) forms part of an Environmental Impact Statement (EIS) prepared for the Project.

1.1 Structure of the Report

The format of this report mirrors the format recommended by the Office of Environment and Heritage (OEH) in the *'Guide to investigating, assessing and reporting on Aboriginal cultural heritage in New South Wales'* (2011).

The process followed by United Project team to consult with all its Project RAPs has been a continuation of Glencore's approach to cultural heritage assessment previously utilised for a the Bulga and Mount Owen EIS processes. United contracted 3 knowledge holder groups with interests in the Project Area to undertake their own community consultation and write their own Aboriginal cultural values assessment reports. The knowledge holder groups contracted by United to do this were the Plains Clan of the Wonnarua People (PCWP), the Wonnarua Nation Aboriginal Corporation (WNAC) and the Wonnarua Traditional Custodians (WTC). The full text of two of these reports are included in **Volume 2**.

RAPs whose views were not captured by those knowledge holder groups were also consulted for this ACHAR, and their cultural values, care and control and conservation recommendations have been included in this report.

The Aboriginal Archaeological Values Assessment Report prepared by OzArk Environmental and Heritage Management (2013) is contained in **Volume 2**.

This Aboriginal Cultural Heritage Assessment Report (ACHAR) presents a summary of the archaeological values assessment of the Project Area as well as a synthesis of the values and recommendations of all RAPs who participated in the United cultural heritage assessment process.

Section 1 of this report introduces the Project and the ACHAR within a Project, EIS and legislative context.

Section 2 of this report describes the Project Disturbance Area and presents a discussion of the environmental background of the Project Area. A review of historical land use practices and previous approvals for other mining activities are also discussed.

Section 3 outlines the extensive consultation processes undertaken with RAPs for this ACHAR.

Section 4 presents a historical narrative of the Project Disturbance Area alongside a comprehensive review of archaeological investigations undertaken within the Project Area since the first investigations in 1982. This section also includes the results of the archaeological values assessment undertaken for this Project by OzArk and concludes with an assessment of the scientific significance of Aboriginal places identified through the archaeological values assessment.

Section 5 presents a discussion on cultural heritage values and significance assessment in general, alongside a consolidated statement of significance for the Aboriginal Places within the Project Disturbance Area formulated according to the cultural heritage industry best-practice guidance of the Burra Charter (Australia ICOMOS 1999).

Section 6 introduces the proposed activity, including key features of the proposed Project, timeframes, rationale, disturbance footprint, infrastructure requirements and design highlights. This section also introduces the harm management options in the Project Design.

Section 7 discusses opportunities for avoiding and/or mitigating harm to Aboriginal cultural heritage.

Section 8 presents management recommendations developed by the Projects stakeholders for both 'Project Approval' and 'No Project Approval' scenarios. Specific recommendations regarding intergenerational equity are also discussed.

1.2 Key Issues

The Aboriginal community of the Hunter Valley shares many similarities with other Aboriginal communities throughout Australia. One of those similarities is a degree of division among the people living in the Hunter Valley. There are divisions between a number of family groups, knowledge holder groups and individuals, which at the time of writing showed no progress towards resolution. This is largely beyond the scope of this report.

As a result of these divisions within the community and groups, the individuals who registered as RAPs could not be consulted by United as a single group, and an alternative approach was required.

Following public notification, 83 individuals registered as RAPs for this project.

In the interests of ensuring that all interested Aboriginal parties to the Project were consulted, United embarked on a process of consultation and reporting that has been utilised previously by Glencore.

The key points of the ACHAR consultation process are as follows:

- There are 3 knowledge holder groups of Wonnarua people (WNAC, WTC and PCWP) who have been engaged by United to conduct their own cultural values assessment and write their own ACHARs, the key results of which have been consolidated into this ACHAR,
- Those 3 knowledge holder groups have consulted their own memberships (some of whom were also RAPs for the project),
- A large number of people from these 3 groups who are not RAPs have been included in this consultation (particularly elders) which can only be regarded as a positive outcome,
- Individuals not involved in the consultation and reporting processes conducted by the 3 knowledge holder groups but who registered as RAPs were consulted separately, and their values are reported on by ACHM in this report. These individuals are referred to throughout this report as the 'Community RAPs'.
- The process provided consultation and engagement for all of the Projects RAPs and allowed opportunities for additional information, stories and knowledge from Wonnarua Elders to be made known.

1.2.1 Roadmap of the Report

For ease of reference, the following table provides page numbers and reference points to key issues in this report.

Key Item	Reference	Page
ACHAR Objectives	1.3	5
Project Overview	1.5	6
SEAR's	1.6.1	11
Consultation Processes	3.0	31
Cultural Values and Significance Assessment	6.0	66
Recommendations	8.0	81

Table 1-1: Report Roadmap

1.2.2 Aboriginal Cultural Heritage Assessment Approach and Objectives

The cultural values and archaeological assessments culminating in the preparation of this ACHA have been undertaken so as to ensure:

1. Extensive and meaningful opportunities for engagement and consultation with Knowledge Holders and RAPs for the Project,
2. Full compliance with the Secretary's Environmental Assessment Requirements (SEARs),
3. Full compliance with the OEH (2010) Aboriginal cultural heritage consultation requirements for proponents,
4. Full compliance with the OEH (2011) Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW,

5. An Objective archaeological assessment to determine the scientific significance of the archaeological places within the Project Area, and
6. The identification of cultural values and the determination of cultural significance which are consistent with the guidance provided in the Burra Charter and Indigenous Cultural Heritage Management Practice Note (Australia ICOMOS, 2013).

The objectives of this report are to:

1. Present the Project's consultation methodologies and processes as agreed with the RAPs and utilised in this Project, and
2. Ensure that Aboriginal people have the opportunity to participate in and improve the outcomes of the assessment by:
 - (a) Providing relevant information about the cultural significance and values of the Aboriginal object(s) and/or place(s) within the Project Disturbance Area,
 - (b) Influencing the design of the method to assess cultural and scientific significance of Aboriginal object(s) and/or place(s) within the Project Disturbance Area,
 - (c) Actively contributing to the development of cultural heritage management options and recommendations for any Aboriginal object(s) and/or place(s) within the Project Disturbance Area and the wider Project Area; and
 - (d) Commenting on draft assessment reports before they are submitted by the proponent to the OEH.

1.3 ACHAR Consultants

This report is a consolidation of cultural values assessments mostly undertaken and reported on by Aboriginal people themselves. United JV directly scoped and contracted 3 Aboriginal knowledge holder groups within the Hunter Valley to consult with their own members about the Project and provide reports back to United. Reports produced by the Aboriginal representative body were to comply with the 2010 OEH Draft Guidelines for Community Consultation at all times, and the results of those disclosed reports are consolidated and presented in this ACAHR. The three knowledge holder groups are listed in Table 1-2, below.

An ACHAR template, including the basic framework for the report and proponent input sections, and a collection of relevant Project data was provided to the 3 knowledge holder groups by United prior to the groups embarking on their report writing. ACHM provided the draft ACHAR template for the three groups.

A fourth group of Aboriginal people who were not members of any of the 3 knowledge holder groups listed in Table 1-2, but are RAPs for the project. ACHM was contracted by United to assist them undertake the community consultation and cultural values reporting with this group. The results of that consultation process are presented in this report.

This United process has involved consultation with all 83 RAPs from the four discrete groups. The process has also facilitated the three knowledge holder groups being able to consult with a large number of Aboriginal people who (a) were not RAPs for the project but (b) are traditional owners of the Hunter Valley area, and therefore constitute important stakeholders. These people were Wonnarua Elders with knowledge and important contributions to the process.

This journey was not without commercial and practical risk for the proponent and the participants; however the author believes the process and outcomes have been both innovative and beneficial for all concerned.

Organisation	Abbreviated	Role
Plains Clan of the Wonnarua People	PCWP	Contracted by United to produce separate cultural values report
Wonnarua Nation Aboriginal Corporation	WNAC	Contracted by United to produce separate cultural values report
Wonnarua Traditional Custodians	WTC	Contracted by United to produce separate cultural values report

Table 1-2: Organisations engaged by United to produce their own ACHAR.

13.1 Structures of the Knowledge Holder Groups

Each of the knowledge holder groups has a unique structure and its own internal governance mechanisms. The following information is presented as background to the workings of the 3 knowledge holder groups.

The Wonnarua Nation Aboriginal Corporation describe themselves as follows (Wesson, 2015:5):

The Wonnarua Nation Aboriginal Corporation (WNAC) is a representative group of the Wonnarua people of eastern New South Wales set up through the Corporations (Aboriginal and Torres Strait Islander) Act 2006 (CATSI Act) in response to the Commonwealth Native Title Act 1993. The WNAC members are descendants of Sarah Madoo, born at Eccleston on the Allyn River within Wonnarua territory, and Annie Phillips, a Gringai woman of the Wonnarua language speakers.

The WTC described themselves in the Mt Owen Continued Operations ACHAR (2014) as follows:

The Wonnarua Traditional Custodians (WTC) are a Native Title claimant group comprising Wonnarua Claimants, Elders and descendants of Emily mother of Henry Harry Taggart, Sara Madoo (Camboo), Susan Bishop (Dangar/Young), Mary Ann Webster, Matilda Hughes (including Mary and Emily Shoe), and George Cain (WTC Report, 2013).

The PCWP describe themselves as (Tocumwal, 2015: 11) follows:

Tocumwal Pty Ltd (Tocumwal) is the representative body for the Plains Clans of the Wonnarua People (PCWP). The PCWP is the Claimant Group made up of four different family lines that have come together to and can demonstrate continued connection to country and customary law (Lore) that have lodged several claims in response to section 29 notices. The PCWP members are the descendants of the original peoples with unbroken bloodline and connections to an area within the Hunter Valley and is made up of Wonnarua Claimants, Elders and descendants of Emily, mother of Henry Harry Taggart, Mary Shoe, (mother of Matilda Hughes) who are collectively recognised as the Wonnarua People. The families of those people today are the following Family lines. (Franks Nee Hughes, Lester Nee Lester/Smith, Smith Nee Smith/Foot and Ward Nee Taggart. (Robert Lester 2013)

132 Other Consultant Input

A number of consultants or organisations have been involved in the preparation of components of this report.

Alongside the consultants noted in Table 1-3, below, United JV personnel have also provided extensive amounts of information for the final report.

Organisations	Individual(s)	Role
ACHM	Dr Shaun Canning	Cultural values recording, consultation workshops, significance assessment, ACHAR consolidation and preparation
OzArk EHM	Jodie Benton, Ben Churcher	Archaeological survey, excavation and reporting
Umwelt	Numerous	EIS preparation, GIS, environmental and proposed development sections, mapping, historic heritage

Table 1-3: EIS and ACHAR Consultants engaged by United.

This report has been written primarily by Dr Shaun Canning, Principal Heritage Advisor with ACHM.

Aislinn Farnon, Tim Walls, Matt Goddard and Sean Piggott (United) ably assisted with the content.

133 About Dr Shaun Canning

Dr Shaun Canning is General Manager – Victoria and the Principal Heritage Advisor of Australian Cultural Heritage Management (Vic) Pty Ltd. (ACHM), which specializes in cultural heritage assessment, expert advice, management of complex and large-scale cultural heritage management projects (primarily in relation to Australian Indigenous culture and heritage), native title advice and research, Indigenous community consultation and development matters, geographic information systems, cartography and analysis. Shaun has been involved extensively in the completion of over 500 cultural heritage management projects nationally.

Shaun holds a Bachelor of Arts degree majoring in Cultural Heritage Studies and Anthropology, a Bachelor of Applied Science (Hons) degree in Parks, Recreation and Heritage, and a PhD in Australian Indigenous Archaeology (La Trobe), specialising in predictive modelling and cultural heritage management in southern Victoria. Shaun was the recipient of a 3 year Australian Postgraduate Award Scholarship to complete his PhD. Shaun has extensive experience in Indigenous cultural heritage management in the resources, urban development, infrastructure and public land management sectors, alongside considerable experience in community consultation and Aboriginal education. Shaun has particular expertise in complex project management, and the use of GIS and predictive modelling in archaeological, cultural and natural heritage management contexts.

Shaun is a Fellow of the Australian Anthropological Society (F.AAS), a member of the International Council on Monuments and Sites (M.ICOMOS), a full member of the Australian Association of Consulting Archaeologists (M.AACAI) and a Certified Environmental Practitioner (CenvP) through the Environment Institute of Australia and New Zealand (EIANZ).

Shaun is an 'Expert Member' of the ICOMOS International Committee on Archaeological Heritage Management (ICAHM), an Honorary Research Associate of the Archaeology Program at La Trobe University, a member of the Indigenous Relations Working Group committee of the Minerals Council of Australia, and a member of the EnviroDevelop Technical Standards Development Taskforce for the Urban Development Institute of Australia (UDIA).

1.4 Project Overview

The United Mine (United) and Wambo Mine (Wambo) are situated approximately 16 kilometres (km) west of Singleton in the Hunter Valley of New South Wales (NSW) (refer to Map 1-1). United is owned 95 per cent by Glencore Coal Pty Limited (Glencore) and 5 per cent by the Construction, Forestry, Mining and Energy Union (CFMEU) and is managed by Glencore. Wambo is an existing coal mining operation and is a neighbour operation to United. Wambo Coal Pty Limited (Wambo Coal) is a subsidiary of Peabody Energy Australia Pty Limited (Peabody).

The United and Wambo coal mining operations were established in 1989 and the late 1960's, respectively. There have been a range of underground and open cut coal mining operations at both of these adjoining coal mines since that time, with a number of agreements entered into by United Collieries Pty Limited (United Collieries) and Wambo Coal over time in relation to access to underground and open cut coal reserves within mining titles held by each company.

Whilst open cut coal mining has previously been undertaken at United, over the last two decades the focus has been on underground mining. Underground longwall mining operations were approved to provide up to 2.95 million tonnes per annum (Mtpa) of saleable coal. Operations were suspended at United in March 2010 with the mine entering a period of care and maintenance. At that time, exploration and pre-feasibility works were commenced to determine the potential for future mining activities within United's mining lease. Ongoing exploration has identified substantial reserves of coal suitable for open cut mining.

The current existing and approved Wambo open cut coal mine adjoins the United operations, and was planned to produce up to 8 Mtpa of run of mine (ROM) coal up to 2017. The combined Wambo underground and open cut operations, have approval to extract up to 14.7 Mtpa run of mine (ROM) coal, and to transport up to 15 Mtpa product coal via the approved train loading facility until 2025.

In November 2014, a 50:50 Joint Venture between United Collieries Pty Limited (United Collieries) and Wambo Coal Pty Limited (Wambo Coal) was announced which combines the extraction and exploration rights for a number of mining tenements at United and Wambo (refer to Map 2-1). The Joint Venture will look to develop the United Wambo Open Cut Coal Mine Project (the Project) that combines the existing open cut operations at Wambo with a proposed new open cut coal mine at United.

The Project is a State Significant Development as defined under State Environmental Planning Policy (State and Regional Development) 2011 and will require development consent under Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The Project will also require a modification to the existing Wambo development consents under section 75W of the EP&A Act. An Environmental Impact Statement (EIS) has been prepared to accompany these applications. This Aboriginal Cultural Values Assessment has been prepared by Australian Cultural Heritage Management for the EIS for the Project. This ACHAR has been prepared in accordance with the SEAR requirements, the requirements of the 2005 DEC Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment, the Community Consultation guidelines of the current Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010a), and the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011). It also been prepared in accordance with, and it also complies with the intent, requirements and assessment methodologies outlined in the Burra Charter (1999).

The Project includes open cut mining operations in two areas, the proposed United Open Cut and modified operations in the approved Wambo Open Cut for a period of approximately 23 years. The existing Wambo Open Cut has approval for continued open cut mining until 2017. The Project seeks to modify the approved mine plan for the Wambo Open Cut to access additional resources from within existing mining and exploration tenements held below the Wambo Open Cut.

The Joint Venture is anticipated to deliver up to 10 Mtpa of ROM coal production in total from the combined management of the United Open Cut and Wambo Open Cut mines. The existing Wambo Coal Handling and Preparation Plant (CHPP) will be utilised for the Project, with no change proposed to the CHPP's approved annual throughput of 14.7 Mtpa ROM coal feed. The Wambo CHPP will also continue to receive coal from the ongoing Wambo underground mine (that is not the subject of this Project).

The Project requires a number of changes to the layout of existing open cut mining, public and private infrastructure within the Project Area. The Project will provide continued employment for the existing Wambo open cut workforce and create additional employment from the development of the Project.

The key aspects of the Project are provided in Table 1-4, below.

Key Project Components/Aspects	Proposed Operations
Key feature of the Project	The operation of a multi-seam open cut mining operation integrating the existing and approved Wambo Open Cut under a modified mine plan and the proposed United Open Cut.
Total Economically Recoverable Reserve	Approximately 110 million tonne (Mt) of ROM coal from the United Open Cut. In total, approximately 66 Mt of ROM coal from the Wambo Open Cut, including an additional 39Mt accessed from the depth of mining modification.
Extraction Rates	Up to 10 million tonne per annum (Mtpa) ROM coal.
Life-of- Mine	Approximately 23 years from granting of approval.
Operating Hours	24 hours per day, 7 days per week.
Number of Employees	Up to 500 total operational employees.
Mining Methods	Open cut mining using a truck and excavator fleet.
Extent of Mining Areas	Refer to Map 1-2 for the proposed extent of open cut mining. The Project proposes realignment of the Wambo Open Cut boundary to maximise resource recovery. The realignment would result in approximately 5 hectares of additional disturbance for the approved Wambo Open Cut mine.
Infrastructure	Initial use of existing United mine infrastructure area prior to its decommissioning and removal due to the progression of the United Open Cut. Construction of temporary facilities in the construction phase in the mining infrastructure area within United lease CCL775. Expand and upgrade Wambo Mining Infrastructure Area. Use of existing Wambo CHPP, coal handling facilities and train loading facility.
Tailings and Rejects Strategy	Decommissioning and capping of existing tailings storage facilities located in areas proposed for overburden emplacement and ongoing use of existing tailings storage facilities and storages established in other mine voids as required. Coarse rejects from coal preparation to be transported by truck to the open cut overburden areas for emplacement and subsequent covering by overburden material. Coarse rejects will continue to be co-disposed within the open cut overburden areas for the life of operations.
External Coal Transport	Product coal will continue to be transported off site via rail from the existing Wambo train loading facility. Product coal transport rates proposed to increase from six to eight trains per day.
Roads	Realignment of a 2 kilometre section of the Golden Highway to accommodate the proposed United Open Cut. The main entrance to the Project will be via the current entrance to Wambo. The existing United access road will be used in the initial phase for construction and ancillary services with limited ongoing use as a property access point.
Power Infrastructure	An existing 330 kV transmission line which traverses CCL775 is proposed to be relocated as part of the Project. Several other 66 kV and 11kV power lines will also require relocation outside of proposed mining areas.
Water Management	Construction of additional mine water management controls. Use of the United underground mining voids for water storage.

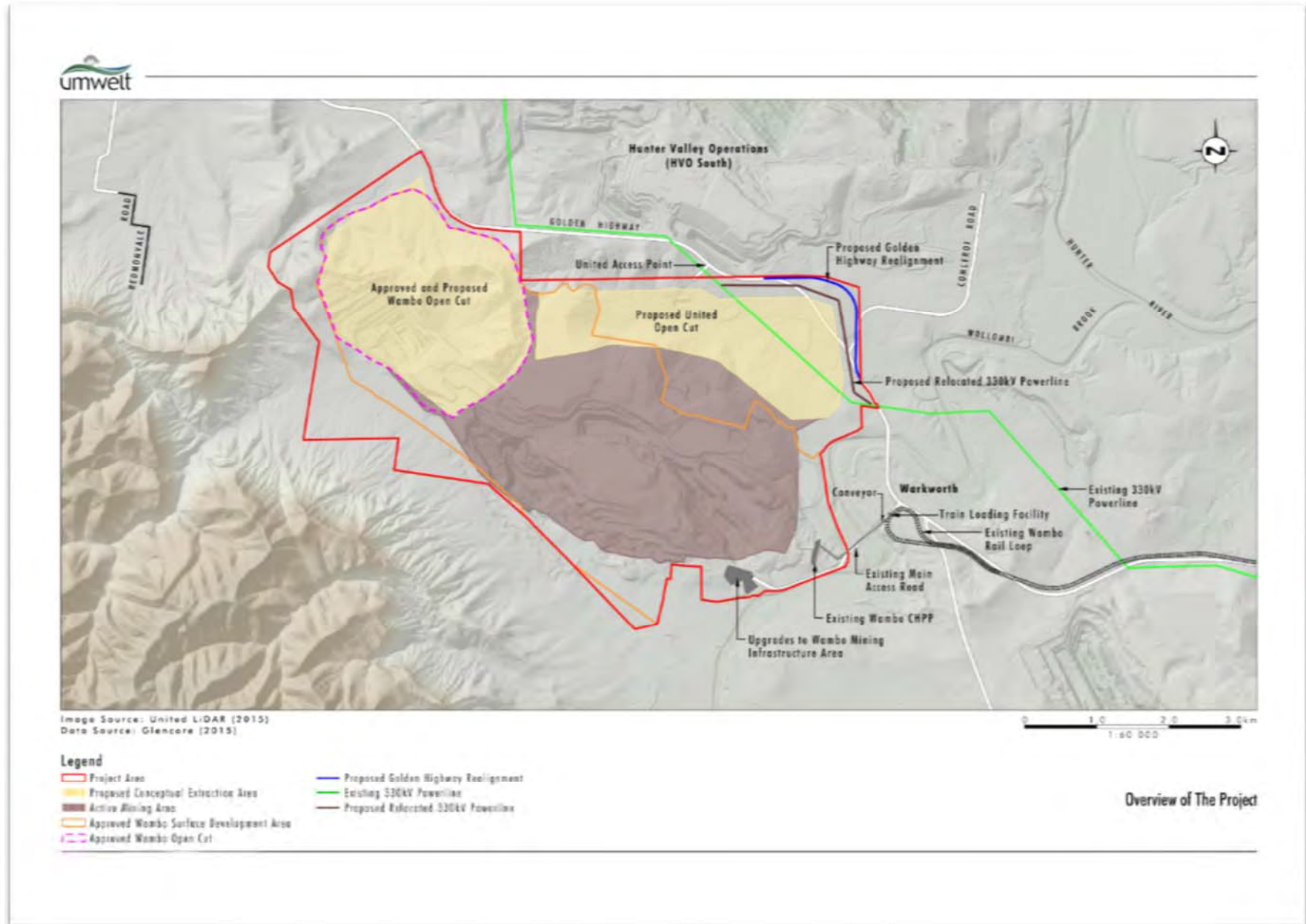
Table 1-4: Key features of the proposed Project.

Map 1-1 and Map 1-2 (below) shows the location and the general layout of the Project.



Locality Plan

Map 1-1: Location of the Project Area.



Map 1-2: Existing United Project Area.

1.5 Environmental Assessment Requirements

The Project is a State Significant Development as defined under State Environmental Planning Policy (State and Regional Development) 2011 and will require development consent under Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The Project will also require a modification to the existing Wambo development consents under section 75W of the EP&A Act. An Environmental Impact Statement (EIS) has been prepared to accompany these applications.

1.5.1 Secretary's Environmental Assessment Requirements (SEARs)

Specific to the assessment of cultural heritage impacts, the SEAR's require that the EIS must include:

- An assessment of the likely impacts of the development on Aboriginal heritage (cultural and archaeological), including consideration of the significance of these objects or declared places to Aboriginal people and having regard to the OEH's requirements;
- An assessment of the likely impacts of the development on non-Aboriginal heritage, paying particular attention to its settlement by Europeans and pastoral history and having regard to the OEH's requirements; and
- Evidence of consultation, noting that consultation carried out for the original Wambo Mine and United Mine may be relied upon, but should be augmented with further consultation for this project;

As noted in Section 1.4, the archaeological and cultural values assessments along with this ACHAR have been prepared in accordance with the SEAR requirements, the requirements of the 2005 DEC Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment, the Community Consultation guidelines of the current Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010a), and the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011). It also been prepared in accordance with, and it also complies with the intent, requirements and assessment methodologies outlined in the Burra Charter (1999).

SEAR	Where Addressed
An assessment of the likely impacts of the development on Aboriginal heritage (cultural and archaeological), including consideration of the significance of these objects or declared places to Aboriginal people and having regard to the OEH's requirements	Chapters 3-7
An assessment of the likely impacts of the development on non-Aboriginal heritage, paying particular attention to its settlement by Europeans and pastoral history and having regard to the OEH's requirements	Chapter 4
Evidence of consultation, noting that consultation carried out for the original Wambo Mine and United Mine may be relied upon, but should be augmented with further consultation for this project	The ACHAR has been prepared to comply with the current Aboriginal cultural heritage consultation requirements for proponents (DECCW 2010a), the Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC 2005) and the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011) to inform consultation and assessment, and also complies with the intent, requirements and assessment methodologies in the Burra Charter (1999).

Table 1-5: Secretary's Environmental Assessment Requirements

The following sections present the Commonwealth and State statutory controls that provide legal protection for Aboriginal cultural heritage in NSW, and that identify the approval processes for any proposed Project that seeks to impact Aboriginal cultural heritage places and objects.

1.6 Legislative Environment

The following sections present the Commonwealth and State statutory controls that provide legal protection for Aboriginal cultural heritage in NSW, and that identify the approval processes for any proposed Project that seeks to impact Aboriginal cultural heritage places and objects.

1.6.1 Commonwealth Legislation

Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) protects matters of national environmental significance. The EPBC Act lists nine Matters of National Environmental Significance (MNES), which include world heritage sites and national heritage places, and provides for the establishment and maintenance of the National Heritage List (a list of Australia's most valued natural, Indigenous and historic heritage sites) and the Commonwealth Heritage List (a list of places of natural and cultural significance located on lands owned or controlled

by the Australian Government). The most recent addition to this list is waters in relation to coal seam gas and large coal mining development.

The Project was referred to DoE in October 2015 to determine whether or not it required approval under the EPBC Act. As the Upper Hunter Strategic Assessment is not yet finalised, all potentially relevant matters were addressed in the referral including biodiversity impacts.

On 7th December 2015, the Project was determined to be a Controlled Action requiring approval under the EPBC Act 1999 from the Commonwealth Minister for the Environment due to its potential impact on the following matters of national environmental significance:

- Central Hunter Valley Eucalypt Forest and Woodland (a Critically Endangered Ecological Community (CEEC) listed under the EPBC Act);
- Regent honeyeater (a threatened species listed in the EPBC Act);
- Swift parrot (a threatened species listed in the EPBC Act);
- Spotted-tailed quoll (a threatened species listed in the EPBC Act); and
- A water resource.

Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (the ATSIHP Act) provides for the declaration by the Minister for the protection of Aboriginal cultural heritage of particular significance to Indigenous Australians, generally in circumstances where State or Territory laws fail to do so. The power to make declarations is meant to be used as a last resort, after the relevant processes of the state or territory have been exhausted; no declarations have been made under the ATSIHP Act in relation to the Project Area.

Native Title Act 1993

The Native Title Act 1993 provides for the recognition and determination of native title in Australia, processes for how future activity can proceed on native title land, and to provide compensation where native title is impaired or extinguished.

Native Title Act processes for the purposes of the Project are not dealt with in this report, as Native Title has been extinguished in the Project Disturbance Area.

Protection of Movable Cultural Heritage Act 1986

The *Protection of Movable Cultural Heritage Act 1986* (the PMCH Act) implements Australia's obligations under the UNESCO Convention on the Means of Prohibiting the Illicit Import, Export and Transfer of Ownership of Cultural Property. Under the PMCH Act it is unlawful to export a 'protected object' from Australia without a certificate or permit from the Environment Minister. This Act is not directly relevant to this report.

1.6.2 State Legislation

Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) is the main piece of legislation regulating land use in NSW.

The Act is administered by the Department of Planning and Infrastructure (DP&I) and guides the process of land development, including the assessment and management of cultural heritage impacts.

Coal mining is State Significant Development, and the Minister for Planning and Infrastructure is the consent authority for it. Applications for approval of State Significant Development are made under Part 4 of the EP&A Act. As the Project is State Significant Development, United is seeking Part 4 development consent for the Project.

This Aboriginal Cultural Heritage Assessment (including the Aboriginal Archaeological Values Assessment) has been prepared in accordance with SEAR's identified by the DP&I (See Table 1-5).

National Parks & Wildlife Act 1974

The *National Parks & Wildlife Act 1974* (NP&W Act) is the primary law in NSW that provides protection for Aboriginal cultural heritage. The Act is administered by the Office of Environment and Heritage (OEH), which is within the Department of Premier and Cabinet NSW.

Under section 86(1) and 86(4) of the Act, it is an offence to harm an Aboriginal object or an Aboriginal place. The NP&W Act provides for a number of defences to prosecution for harming Aboriginal objects or places including that the

person harmed the object or place in accordance with an Aboriginal Heritage Impact Permit (AHIP) or that the person exercised due diligence.

Under section 89J of the EP&A Act, an AHIP is not required, and the NP&W Act provisions prohibiting harm to Aboriginal objects and places are not applicable, to State Significant Development that is authorised by development consent.

Heritage Act 1977

The *Heritage Act 1977* provides for the protection of natural, cultural and built heritage that are of State or local heritage significance in NSW, through the register of heritage places or items on the State Heritage Register and the making of interim heritage orders and emergency orders to protect heritage items or places at risk.

The registration on the State Heritage Register or the making of interim register order places limits on what can be done to the heritage, although interim heritage orders do not apply to State Significant Development under the EP&A Act.

Archaeological relics are protected under Division 9 of the Act, which also prescribes the requirement for permits issued under sections 140 and 141 of the Act for the disturbance of relics, or under sections 60 and 63 of the Act, in cases where 'relics' are situated within sites or places listed on the State Heritage Register. Permits are issued in accordance with Heritage Council policies which ensure that disturbance of sites and 'relics' occurs in accordance with appropriate professional assessment, standards and procedures.

1.7 Statement of Compliance

This ACHAR has been prepared in accordance with the SEAR's and in accordance with current NSW guidelines and standards, as detailed in this Section.

This ACHAR has adopted an approach that respects and responds to RAPs guidance on culturally appropriate assessment approaches, and as a result, the Project EIS is informed by this ACHAR, the consultations with all of the Project's RAPs, two separate ACHARs prepared by the Plains Clan of the Wonnarua People (PCWP) and the Wonnarua Nation Aboriginal Corporation (WNAC) and the OzArk Aboriginal Archaeological Values Assessment (see Volume 2). The WTC had not submitted an ACHAR for the United project prior to the finalisation of this report, and as such alternative opportunities were provided to WTC members to provide cultural values information for this ACHAR.

2 Description of the Activity Area

The landscape of the Project Area consists of undulating to hilly terrain to the north of the Doyle's Range with lower topographic areas associated with a number of drainage lines. There are four major creek catchments draining the study area:

- Waterfall Creek (flowing into the Hunter River),
- Wollombi Brook,
- North Wambo Creek (flowing into Wollombi Brook) and
- Redbank Creek (flowing into Wollombi Brook).

Waterfall Creek catchment is located in the western section of the Project Area and flows in a northerly direction draining a northern spur of Appletree Ridge. North Wambo Creek catchment is located in the south of the Project Area and flows in a south easterly direction draining the other side of the same ridge and the Wambo Ridge. Redbank Creek flows from a small group of hills located centrally in the Project Area and comprises first and second order streams until its confluence with Wollombi Brook. The proposed United Project Area is located within the catchment of Redbank Creek

The Project Area is located within a landscape which has been heavily cleared and disturbed over a long period of time predominantly as a result of pastoral and agricultural activities dating from the early 1800s. Further disturbance has occurred through the mining activities associated with the past open cuts at Wambo and United and the underground mining activities that have occurred throughout the Project Area. Prior to the establishment of mining operations, the Project Area had a long history of agricultural land uses, such as grazing and cultivation. Grazing and dairy operations are still wide spread throughout the surrounding area, occurring at a number of properties along the Golden Highway and the outskirts of Jerrys Plains. Irrigated agriculture is currently being undertaken along the alluvial floodplains of the Hunter River to the north of the Golden Highway. A small number of olive groves and vineyards are also located south of Jerrys Plains (Umwelt, 2015).

2.1 Land Ownership

The land ownership of the Project Area is as follows

Table 2-1: Schedule of Lands.

Lot Sec DP	Hectares	Status
1//1174490	2.46	Wambo Coal
1//1177768	19.33	CFMEU
1//241316	2.31	Wambo Coal
1//300990	3.03	CFMEU
1//583524	2.95	Coal and Allied
1//616303	326.11	CFMEU
1//709722	56.79	CFMEU
1//720683	0.40	Coal and Allied
1//720705	2.34	Wambo Coal
1//783484	21.84	Coal and Allied
1//857021	21.60	Coal and Allied
100//753792	15.97	CFMEU
101//753792	16.86	CFMEU
103//753792	16.72	Wambo Coal
104//753792	16.03	Wambo Coal
109//753792	15.39	Wambo Coal
11//843432	40.82	Coal and Allied
110//753792	14.90	Wambo Coal
111//753792	16.24	Wambo Coal
112//753792	15.61	Wambo Coal
113//753817	534.46	Wambo Coal
118//753792	50.04	Wambo Coal
131//1089157	0.49	Wambo Coal
134//566275	8.19	CFMEU
134//753792	31.93	CFMEU

United Wambo Open Cut Coal Project

135//753792	16.01	CFMEU
147//753792	0.26	Johnson Woods & Co
148//753792	3.26	CFMEU
149//753792	27.20	CFMEU
160//753817	71.23	Wambo Coal
161//753817	16.67	Wambo Coal
170//823775	21.90	State of NSW
175//823775	32.34	State of NSW
179//823775	386.66	Coal and Allied
18//753817	59.31	Wambo Coal
2//1085145	66.32	Wambo Coal
2//1174490	4.21	Wambo Coal
2//1177768	0.22	Wambo Coal
2//300990	13.72	CFMEU
2//583524	5.37	Wambo Coal
2//616303	167.93	Wambo Coal
2//617852	90.46	CFMEU
2//709722	208.88	Wambo Coal
2//720705	3.57	Wambo Coal
2//783484	89.30	Coal and Allied
22//753817	16.83	Wambo Coal
3//1085145	82.35	Wambo Coal
3//1177768	0.73	Wambo Coal
3//720705	0.57	Wambo Coal
38//753792	41.06	CFMEU
39//753792	32.62	CFMEU
4//1085145	10.49	Wambo Coal
4//542226	14.26	Wambo Coal
4//635392	4.75	CFMEU
4//720705	1.66	Wambo Coal
43//753792	16.13	CFMEU
45//753792	18.88	Wambo Coal
46//753792	18.31	Wambo Coal
49//753792	15.86	Wambo Coal
5//1085145	136.65	Coal and Allied
5//247239	10.75	CFMEU
5//542226	51.75	Wambo Coal
50//753792	15.87	Wambo Coal
51//753792	15.64	Wambo Coal
52//753792	38.89	Wambo Coal
53//753792	16.47	CFMEU
54//753792	15.88	CFMEU
55//753792	16.04	CFMEU
56//753792	40.86	CFMEU
57//1074788	123.82	Wambo Coal
58//753792	40.38	Wambo Coal
6//247239	10.89	CFMEU
60//753792	65.39	CFMEU
61//753792	16.29	CFMEU
62//753792	16.38	Wambo Coal
63//753792	16.20	Wambo Coal
64//753792	16.06	Wambo Coal
66//753817	40.06	Wambo Coal
67//753817	19.79	Wambo Coal
7//247239	10.22	CFMEU
7//3030	79.96	Wambo Coal
7//753792	16.21	CFMEU

71//753817	49.49	Wambo Coal
79//1074787	39.51	Wambo Coal
8//247239	12.68	CFMEU
83//548749	1150.32	Wambo Coal
9//835812	40.48	CFMEU
91//733895	6.74	Coal and Allied
95//753792	10.56	Wambo Coal
A//33149	64.08	Wambo Coal
B//33149	32.55	Wambo Coal
C//33149	171.07	Wambo Coal
Road reserves		

2.2 Environmental Overview

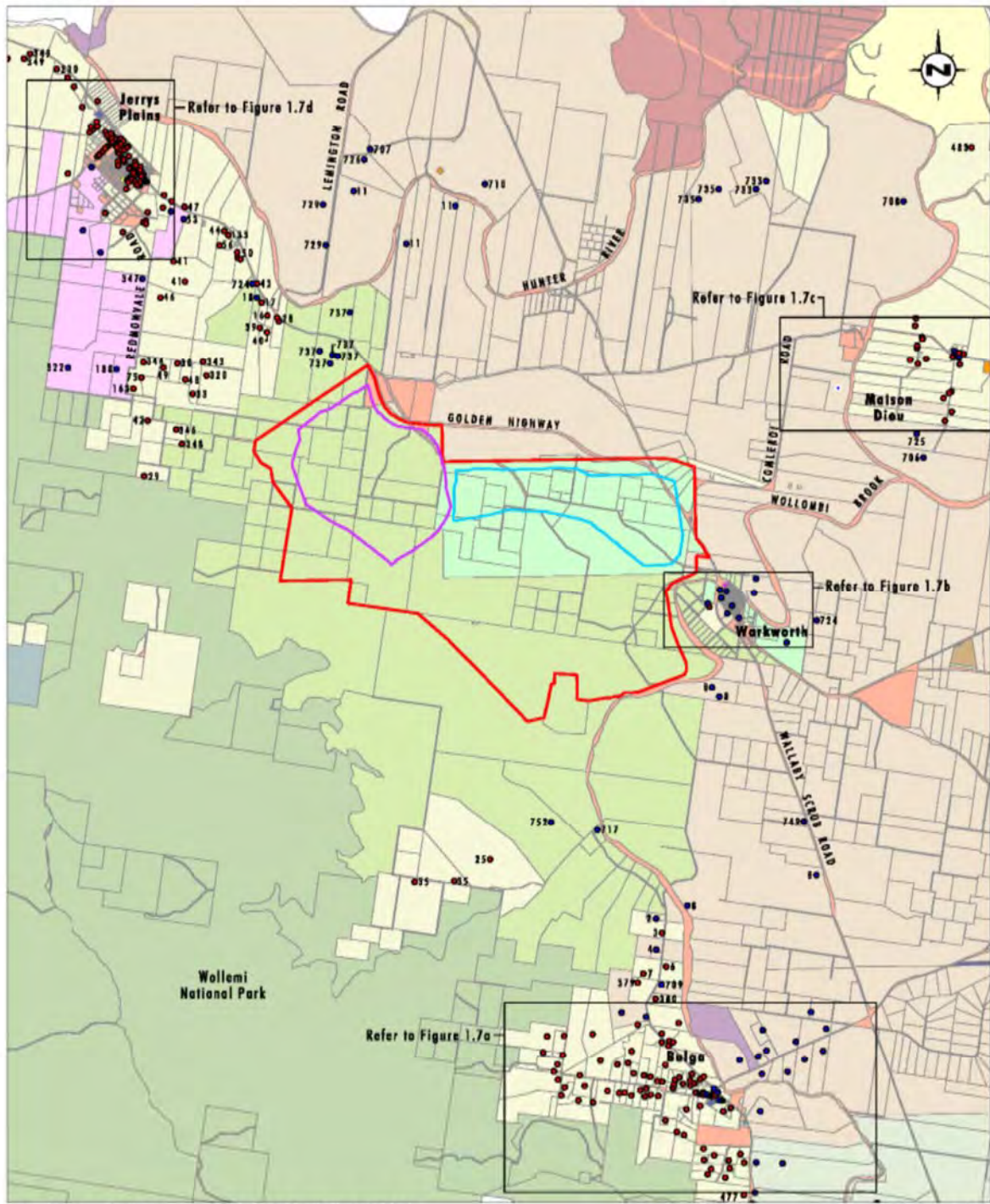
The following sections are a brief summary of more detailed information presented in Section 6.2 of the EIS.

2.2.1 Topography / Landforms and Drainage

The topography of the Project Area is typical of the Central lowlands of the Hunter Valley and is characterised by an undulating and hilly landscape with lower topographic areas associated with drainage lines.

Approximately 0.5 kilometres to the west of the Project Area lie the foothills of the Wollemi National Park which form the dominant landscape feature of the land surrounding the Project Area, with steeper slopes and escarpment areas fringing the Hunter Valley floor. Wollemi National Park and the adjacent Yengo National Park provide a large expanse of conservation land stretching south to the west of Sydney.

A notable local topographical feature is a ridgeline in the northwest position of the Project Area which extends to a height of approximately 200 mAHD. This ridgeline provides a topographic barrier between the area proposed for the open cut operations at United Mine and the private land to the northwest, including Jerrys Plains. Part of this ridge will be mined through by the approved Wambo Open Cut. The remaining surrounding topography is characterised by gently sloping alluvial plains and undulating hills. The Project Area is located within the catchments of Redbank Creek, Wollombi Brook, North Wambo Creek, Hunter River and Waterfall Creek. The soil types occurring within the Project Area are mapped on the Singleton 1:250,000 Soil Landscapes Map Sheet and described in Kovac and Lowrie (1991). Soil landscapes identified as being present in the Project Area include Jerrys Plains (jp), Bulga (bu), Benjang (bj), Warkworth (ww) and Hunter (hu) (Kovac and Lawrie 1991). See Map 2-2, below.



Data Source: Data Source: LPMA (2009), United (2015)

0 1.0 2.5 5.0km
1:100 000

Legend

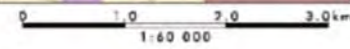
Project Area	Mine Owned (Peabody)	National Parks and Wildlife Service
Proposed Conceptual United Open Cut Pit	Mine Owned (Ravensworth)	Private
Proposed Conceptual Wambo Open Cut Realignment	Mine Owned (Wambo)	Redbank Energy
Mine Owned (Ashton)	AGL Energy	Singleton Council
Mine Owned (Bulga)	Ausgrid	Telstra
Mine Owned (Coal and Allied)	Bulga Community Centre	Warrumbidgee Local
Mine Owned (Dayles Creek)	Government Authority (Federal, State or Local)	Aboriginal Land Council
Mine Owned (Glencora)	Department of Education and Communities	Private Residence
Mine Owned (Integra)	Diocese of Newcastle	Mine Owned Residence

Land Ownership

Map 2-1: Land Ownership.



Data Source: LPMA (2009), Department of Natural Resources (2006)



- Legend**
- Project Area
 - Conceptual Additional Disturbance Area
 - Proposed Conceptual United Open Cut Pit
 - Proposed Conceptual Wambo Open Cut Realignment
 - Hunter Soil Landscape
 - Beejeng Soil Landscape
 - Bulgo Soil Landscape
 - Three Ways Soil Landscape
 - Warkworth Soil Landscape
 - Ogilvie Soil Landscape
 - Brantton Soil Landscape
 - Wollombi Soil Landscape
 - Jarrys Plains Soil Landscape
 - Lees Plain Soil Landscape
 - Roxburgh Soil Landscape

Soil Landscape Mapping Units

Map 2-2: Soil systems within the Project Area and surrounds

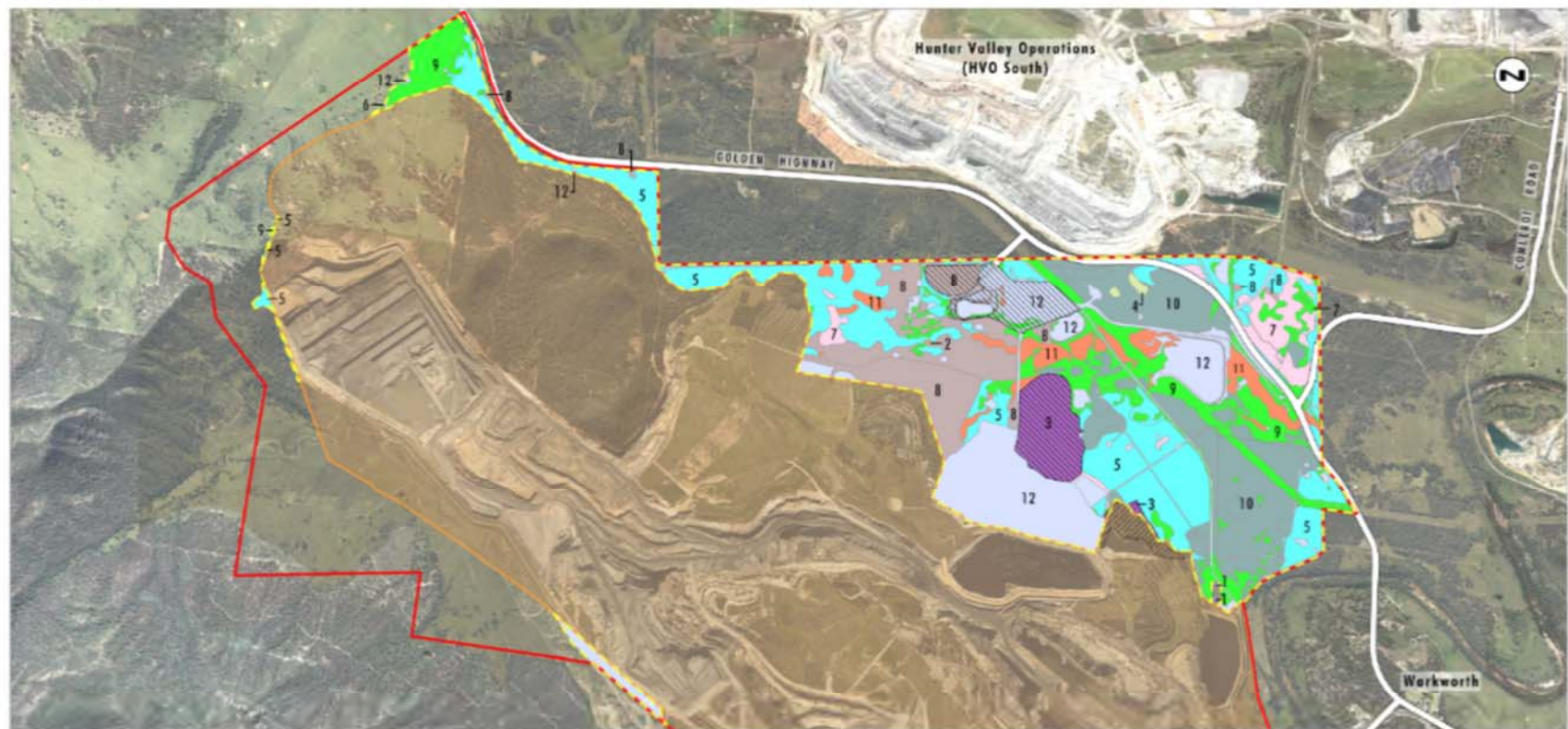


Image Source: AAM (2012), United (2015)
 Data Source: Glencore (2014)

0 0.5 1 2 km
 1:40 000

Legend

- ▬ Project Area
- ▬ Conceptual Additional Disturbance Area
- ▬ Approved Wamba Surface Development Area
- ▬ Mining Lease Boundary
- ▬ 1 Moderate to Good Condition - Weeping Myall - Cozbo - Scrub Wilga Shrubland of the Hunter Valley
- ▬ 2 Moderate to Good Condition - Forest Red Gum Grassy Open Forest on Floodplains of the Lower Hunter
- ▬ 3 Moderate to Good Condition - Plantation/Rehabilitation - Spotted Gum - Narrow-leaved Ironbark Shrub - Grass Open Forest on Slopes of the Upper Hunter and Sydney Basin CEEC
- ▬ 4 Moderate to Good Condition - Grey Box - Slaty Box Shrub - Grass Woodland on Sandstone Slopes of the Upper Hunter and Sydney Basin CEEC

- ▬ 5 Moderate to Good - Narrow-leaved Ironbark - Grey Box grassy Woodland of the Central and Upper Hunter CEEC
- ▬ 6 Moderate to Good Condition - Thinned Canopy
- ▬ 7 Moderate to Good Condition - Regeneration
- ▬ 8 Moderate to Good Condition - Cooba Open Shrubland
- ▬ 9 Low Condition - Derived Native Grassland CEEC in part
- ▬ 10 Moderate to Good Condition - Bull Oak Grassy Woodland of the Central Hunter Valley CEEC in part
- ▬ 11 Moderate to Good Condition - Swamp Oak - Weeping Grass - Grassy Riparian Forest of the Hunter Valley
- ▬ 12 Cleared Land
- ▬ Approved for Disturbance
- ▬ Wamba Mine Rehabilitation

Vegetation Types of the Disturbance Area

Map 2-3: Vegetation communities within the Project Area and surrounds

2.2.2 Geological Features

The Project Area is located in the central coal-producing region of the Hunter Coalfield. The many seams of this coalfield were formed in the Permian period and are similar in age to the Illawarra Coal Measures south and west of Sydney, and the Newcastle and Tomago Coal Measures of the Newcastle / Maitland area.

The strata in the Hunter Coalfield generally dip to the west-south-west under the prominent sandstone escarpments of the Sydney Basin. A series of folds, superimposed upon the regional dip, form large north-south trending anticline, syncline and monocline structures. The coal seams within the Project Area form part of the Late Permian Wittingham Measures of the Singleton Super Group.

The Wittingham Coal Measures are divided into two important coal bearing sub groups, the lower Vane Subgroup and the overlying Jerrys Plains Subgroup. The Project proposes to extract coal from the Jerrys Plains Subgroup.

In the north eastern corner of CCL775, the Jerrys Plains Subgroup strata dips toward the south west at 3-50°. The uppermost seams of the Jerrys Plains Subgroup (Whybrow, Redbank Creek, Wambo, Whynot) that are mined in the Wambo open cut operations, sub-crop to the south and west of the proposed United Open Cut mining area and have limited representation in the United Open Cut.

2.2.3 Coal Resources

The coal resources proposed to be recovered by the Project are those that are economically recoverable by open cut mining methods and are estimated at approximately 177 Mt ROM (including both the United and Wambo Open Cut mining area).

The existing Wambo Open Cut extracts coal from the Wittingham Coal Measures including the Whybrow, Redbank Creek, Wambo and Whynot seams. The proposed depth of mining extension in the Wambo Open Cut would allow access to additional seams down to the base of the Vaux seam. The United Open Cut will allow for mining from the Whybrow seam down to the base of the Vaux seam.

The exploration program undertaken to date has identified an additional coal resource of approximately 149 Mt within the target coal seams, within the proposed mining areas.

Based on current proposed mine scheduling, this resource, coupled with the existing approved resource, would enable open cut mining operations to continue to for approximately 23 years from the date of consent.

2.2.4 Vegetation

The Project Area has been largely impacted by a combination of past mining operations, associated mining infrastructure, infrastructure corridors and past agricultural clearing. Substantial areas of regenerating remnant vegetation are also present within the Project Area. Wollemi National Park is the closest conservation reserve, approximately 0.5 kilometres at its closest point to the western boundary of the Project Area.

A total of 12 vegetation zones (see Map 2-3, above) were identified across the disturbance area (see Appendix 13 of EIS for more details). The vegetation zones include one critically endangered ecological community (CEEC) listed under the EPBC Act and five threatened ecological communities listed under the Threatened Species Conservation Act 1995 (TSC Act), being:

- Central Hunter Valley Eucalypt Forest and Woodland CEEC (212 ha) (EPBC Act)
- Hunter Valley Weeping Myall Woodland EEC (0.1 ha) (TSC Act)
- Hunter Floodplain Red Gum Woodland EEC (0.29 ha) (TSC Act)
- Central Hunter Ironbark – Spotted Gum – Grey Box Forest EEC (37 ha) (TSC Act)
- Hunter Valley Foot slopes Slaty Gum Woodland VEC (1.6 ha) (TSC Act)
- Central Hunter Grey Box – Ironbark Woodland EEC (215.8 ha) (TSC Act).

2.3 Post -Contact Land Use and Approvals History

The following section has been provided by Umwelt (2015).

A review of aerial photographs obtained from the Department of Lands dating from 1958 was undertaken by Umwelt as part of the overall assessments for the Project and shows that prior to 1958 substantial clearing had been undertaken in the Project Area likely as a result of agricultural expansion (See Map 2-4 to Map 2-8). After 1958, landform modification through coal mining became widespread in the Project Area. Section 2.3.1 to Section 2.3.5 (below) are taken from the Umwelt Historic Heritage Assessment (2013).

2.3.1 Initial Agricultural Landuse

During the nineteenth century, pastoral grazing became 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 was the earliest established industry within the region of the Project Area. The 1828 census indicates that, of the 191 large (over 1000 acre) estates occupying the Upper Hunter Valley, 'only one third were sheep grazing enterprises with cattle raising being much more common' (Turner 1995:18). Although the Hunter Valley was a centre of pastoral interests based on sheep and cattle during the nineteenth century, 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.

As well as grazing, the Hunter Valley was opened up for farming in the 1820s with land granted and areas swiftly developed in the fertile region. The Singleton locality contained several thousand acres clear of timber and covered with rich alluvial soil which produced various heavy crops. Agriculture soon became important to the growing economy of the region and during the period 1821 to 1860 wheat was the most common staple crop, with maize for fodder as the second preference. Crops were primarily grown for use by the individual landholder or to sell locally (Clive Lucas 2013:49-50).

A correspondent of the Australian in 1827 reported the Castle Forbes, Singleton properties yielded 36 bushels (1 bushel = 8 gallons/36.37 litres) to the acre of wheat. He goes on to say there were two stack yards within a mile of each other containing together 10,000 bushels of wheat. Tobacco was another crop grown in the area and a few properties also experimented with cotton which ultimately failed.

Historical records indicate the extent of cultivation in 1831 noting that the Patrick's Plains district cultivated 1054 acres of wheat, 625 acres of maize, 54 of barley, 10 of oats, 15 of rye, 15 of potatoes, and 17 acres of tobacco at that time. In 1836, the number of acres in the counties of Brisbane, Northumberland, Hunter and Durham under wheat was 27,424 and maize 7899 with 45 tons of tobacco harvested (JRAHS 1953). Table 2-2 shows the area under cultivation for wheat decline while the area under maize and tobacco increased between 1836 and 1844.

Table 2-2: Area under Cultivation - Counties of Brisbane, Northumberland, Hunter and Durham (JRAHS, 1953)

Crop	1836	1839	1844
Wheat	27,424 acres	15,114 acres	21,534 acres
Maize	7899 acres	10,112 acres	14,226 acres
Tobacco	45 tons	1505 hundredweight	4890 hundredweight

Returns for 1860 show that there were 206 landholders at Patricks Plains which included the counties of Durham, Hunter and Northumberland and they held 161,310 acres. Of this area 155,508 acres were not cultivated. The crop yields were: wheat 22,000 bushels, maize 25,926 bushels, barley 400 bushels, rye 45 bushels, millet 15 tons, potatoes 49 tons, sorghum 243 hundredweights and hay 235 tons (JRAHS, 1953).

With wheat crops grown in the Hunter Valley prone to the disease rust, disease together with the relatively dry conditions in the Upper Hunter made wheat a precarious crop and as a result its production declined. The decline in wheat cultivation saw an increase in barley production mainly for stock feed but as the dairy industry began to grow lucerne crops became a more viable option.

2.3.2 Dairying

Dairying was one of the initial impetuses for the division of large estates in the Upper Hunter and by the 1890s dairying had become an important industry in the Upper Hunter. In the early twentieth century the Upper Hunter was mostly occupied by dairy farms of up to 500 acres in size (Heritage Office 1996:49). 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.

The importance of the dairying industry in the Upper Hunter coincided with the 'development of the mechanical separation of milk and refrigeration causing a re-shaping of the pattern of farming' in the area, due to the increased demand for dairy products in Australia and overseas (Turner 1995:19). Dairying increased after World War I as soldiers were given small holdings and government assistance to establish small agricultural businesses, such as dairy farms (Heritage Office and DUAP 1996a:49). The effect of soldier settlement increased after World War II in the Singleton area when the 'country was cut up into wheat-sheep farms' (Heritage Office and DUAP 1996a:49). In 1955 the NSW milk board established quotas for the supply of milk to overcome shortages.

In the second half of the twentieth century the dairying industry went into a gradual decline. Since 1901 the dairy industry in NSW had been controlled by various government bodies. In the mid to late 1960s policies aimed towards specialisation and amalgamation affected the smaller scale dairy farms. Then in the 1970s Britain joined the European Economic Community and Australia lost its main dairy export market. In the early 1970s the Milk Board was replaced with the Dairy Industry Authority resulting in the reallocation of milk quotas and the eventual deregulation of the industry. Farm improvements to meet new regulations and standards, including the installation of refrigerated holding tanks, resulted in many of the typical small dairy farms of the area becoming unviable. The number of dairy farms in NSW dropped from 9,061 in 1970 to 4,626 in 1976 (Dunne 2012:75-81).

233 Horse Breeding

Horse breeding also became a thriving industry in the region as early as 1822. While horses were used for transport they were also important in terms of the management of stock and recreation. Thoroughbred horses were imported by the larger (wealthier) landholders throughout the nineteenth century establishing a strong history of horse breeding in the area. The majority of breeders focused on thoroughbred racing horses rather than stock horses and some estates held race meetings on their own racetracks. The Scotts of Glendon were importing stud horses in 1822 and Alexander Bowman bred a number of race horses at Oaklands as did George Bowman at Archerfield. James Glennie at Dulwich Estate, George Townshend at Trevallyn and John Earle at Glenridding were also all known for their breeding of mares and stallions (Clive Lucas 2013:51).

234 Viticulture

By the 1830s there were a number of properties in the Hunter growing grapes and producing wine; effectively establishing the industry that continues to thrive today. There were several important figures in the region who contributed to the establishment of the industry. In 1828 James Busby was granted 2,000 acres at Carrowbrook to the northeast of the Project Area. Busby had studied viticulture in France before arriving in NSW and published *Treatise on the Culture of the Vine and the Art of Making Wine* in Sydney in 1825. Rev. Henry Carmichael at Porphyry Point is recognised as a pioneer in viticulture in the Hunter Region. The Reverend Richard Hill is reported to have planted over two and a half thousand vines on his Milbrodale Estate by 1834. Captain G. J. Frankland at Mowbray was the first to introduce the grape into the Paterson district. Dr. H Lindeman at Cawarra is often considered to be the father of the wine industry in Australia. In 1847 the Hunter Valley Viticulture Society was formed and in 1853 the Hunter Valley Vineyard Association was established (Clive Lucas 2013:50-51).

However, large scale commercial wine growing in the wider area was not undertaken until the 1920s when the Fordwich Soldier Settlement viticultural farms were established. As the number of ex-service men struggling with their viticultural farms increased more established families like the Tullochs gradually bought up their operations and soon dominated the area (Dunne 2012:82-85).

235 Mining

The development of coal resources comprises an important part of the region's history. Coal mining within the Hunter Valley began on a limited scale in the early 1900's, prior to a rapid expansion in the 1950's 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. In 1819 when exploring the Jerrys Plains area, John Howe is reported to have been:

'...picking up in the river some large pieces of coal, which they took back to Windsor' (Wood 1972:11).

The first official coal seam was discovered on the Wambo Estate in 1863. Its discovery was reported in the Maitland Mercury:

'A rich seam was recently discovered at Wambo, Cockfighters Creek, the estate of William Durham Esq....We believe this is the first coal seam which has been discovered in the country of the Hunter; and as Mr Durham's estate is about 12 miles from Singleton, it is clear proof of the wide spread of the coal deposits in this district' (Singleton Historical Society, nd).

Coal was first mined in the Upper Hunter in the Rixs Creek area near Singleton in the 1860's (Rappoport 2006:24). However, early coal operations such as this were not commercially viable because of the then underdeveloped transport network. Development and extension of the Great Northern Railway provided the stimulus needed for the development of coal mining in the area (Dunne 2012:88). 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 intend to float the undertaking shortly into a company with equal capital of £50,000. A prospectus will be shortly issued'.

Noble writes that no further information was found on this venture but it indicates that coal extraction was commencing during this time. According to the Heritage Office & DUAP (1996a:4) 'coal was not commercially exploited until the 1890's in the Upper Hunter' and the area remained dominated by the agricultural industry, with a continued focus on dairying.

Coal mining and electricity generation have become major industries in the Singleton area since the 1950's 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).

In 1964 the State Electricity Commission commenced construction of the Liddell power station, which was commissioned in 1973. The Bayswater Power station was commissioned in 1980. These projects changed the lifestyle of the residents of Singleton and surrounding local government areas by affecting employment, population, housing, commerce and the character of the locality. The power stations increased the demand for coal, as did the expanding export market.

2.3.6 United Collieries Pty Ltd

An Authorisation to Prospect was granted over the United area in 1980. Development Consent for mining within mining lease CL257 (now consolidated into CCL775) was granted in the early 1980s, with mining operations commencing in 1989.

From July 1989 until July 1992, United operated an open cut and auger mining operation extracting from the Whynot and Wambo seams. In 1991, a lease exchange was effected with the neighbouring Wambo Coal Pty Ltd (Wambo) owned mine, which enabled Wambo Coal to secure greater open cut reserves and United to secure greater underground reserves.

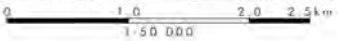
Underground mining operations commenced at United Collieries in January 1992 within the Woodlands Hill seam using a continuous miner with shuttle cars. In May 1994, board and pillar development using the 'Cut and Flit' mining system was introduced. Coal pillar extraction operations commenced in October 1995 using a continuous miner, shuttle cars and mobile roof supports. In late 1996, the mine expanded to two development units and one pillar extraction unit. In 1997, a chain haulage system was introduced to increase production from 1.8 million tonnes per annum (Mtpa) to 2.95 Mtpa. In May 2002, longwall mining was implemented at United Collieries. The majority of United Collieries underground mining operations lie beneath Wambo Coal's open cut operations.

United Collieries has a Coal Handling and Preparation Plant (CHPP) at the site that was used to wash run-of-mine (ROM) coal for delivery to the export market. From 1989 until 2006, product coal was transported from United Collieries by road along the Golden Highway to the Mount Thorley Coal Loader. With the construction of the Wambo rail spur and loop in 2006, product coal from United Collieries was transported to the Wambo rail load-out facility initially via the Golden Highway until an internal haul road was completed in December 2007. The product coal was stockpiled at the rail load-out facility at Wambo and loaded onto trains bound for the Port of Newcastle for export.

In March 2010, the United site entered into a period of Suspension of Operations and United Collieries subsequently commenced exploration and pre-feasibility works for future mining potential.



Image Source: Land and Property Management Authority
Base Data Source: Glencore (2015)



Legend

- Project Area
- Approved Wambo Surface Development Area
- Conceptual Additional Disturbance Area

Aerial Photograph 1963

File Name (A4): R15/3509_324.dgn
20160512 14:52

Map 2-4: Aerial photograph of a cleared but largely intact landscape taken in 1963.

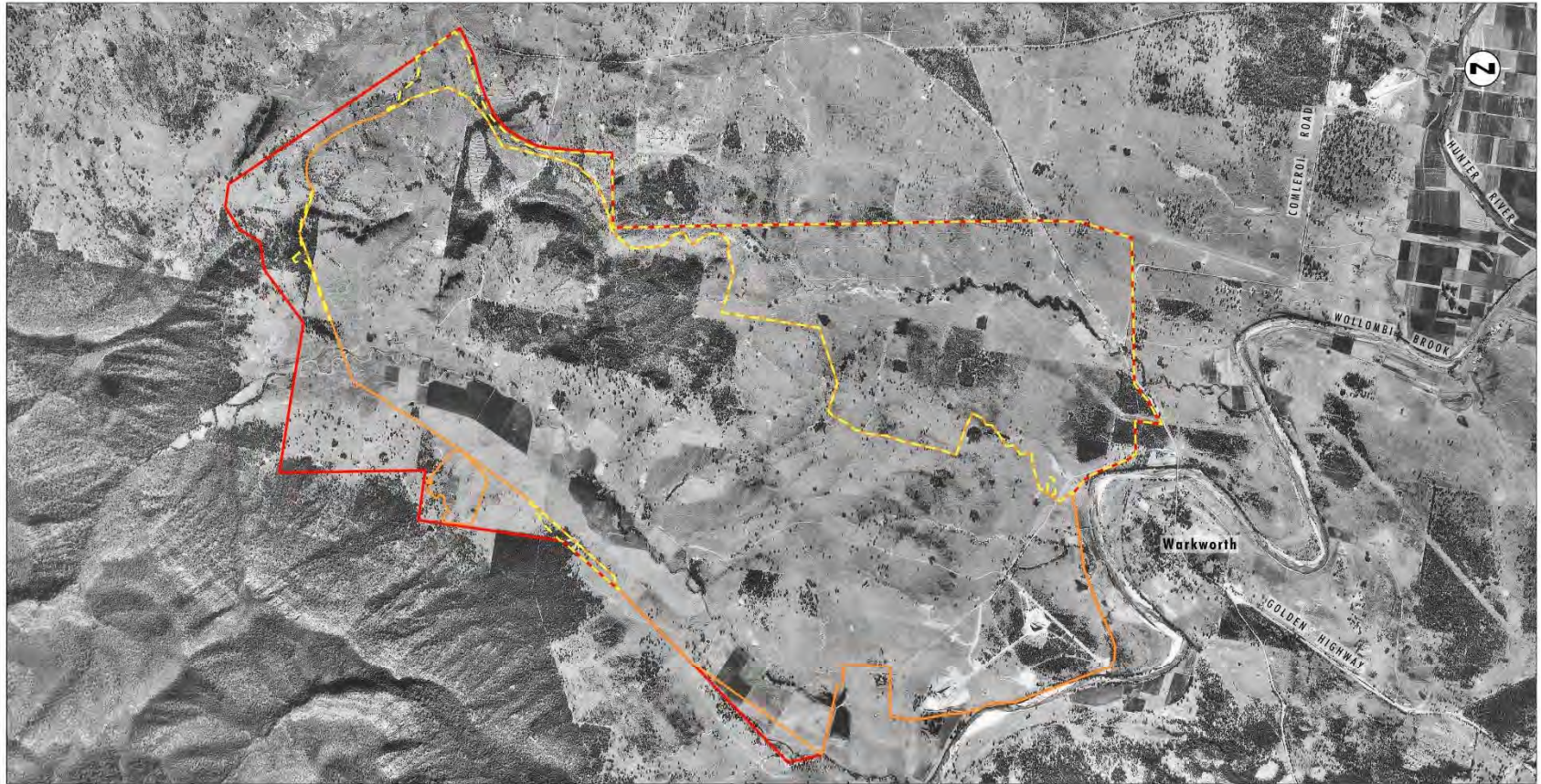


Image Source: Land and Property Management Authority
Base Data Source: Glencore (2015)

Legend

- Project Area
- Approved Wambo Surface Development Area
- Conceptual Additional Disturbance Area

Aerial Photograph 1971

File Name (A4): R15/3509_323.dgn
20160512 15:00

Map 2-5: Aerial photograph of the area taken in 1971. Mining activity has commenced in the lower right of the Project Area.

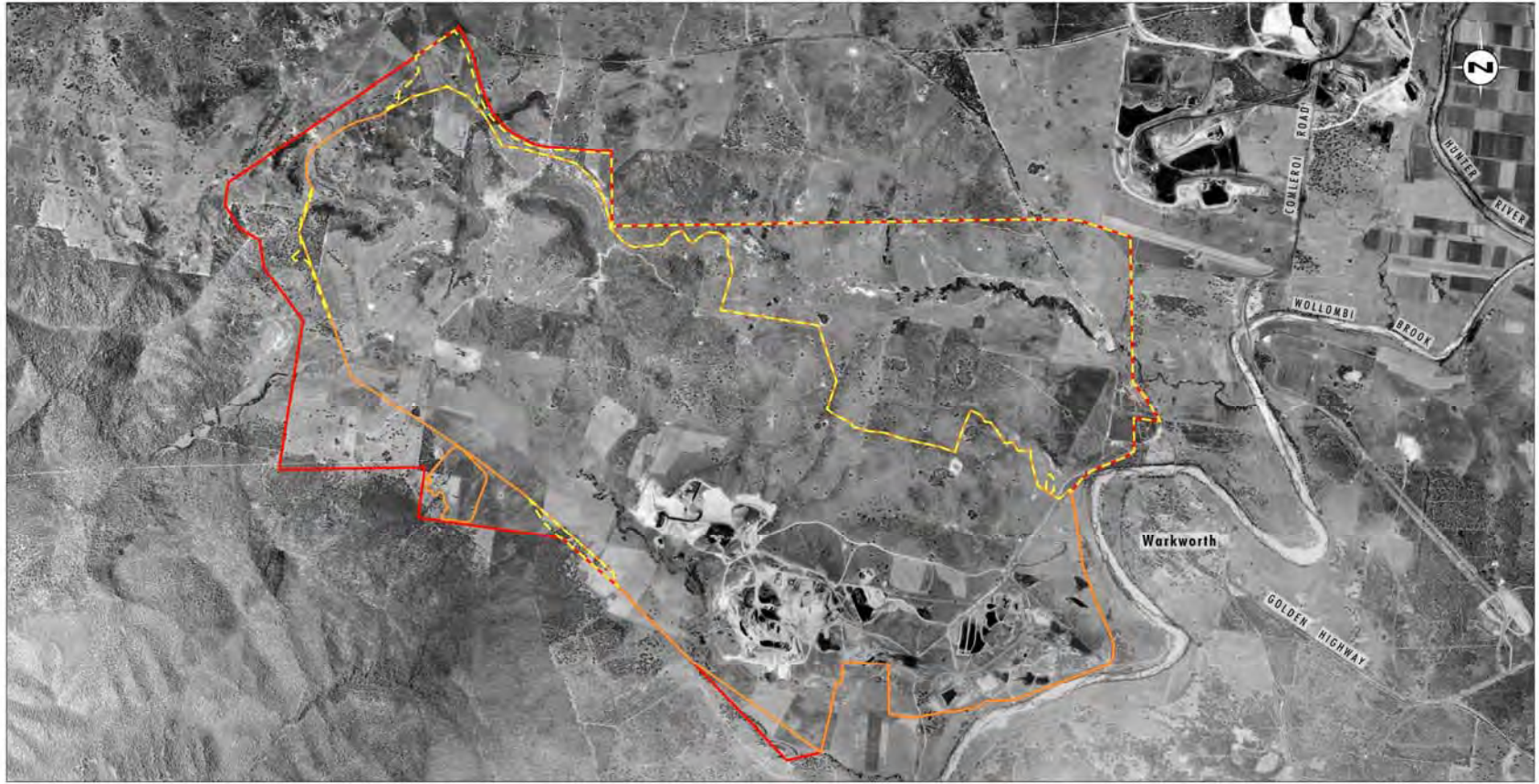


Image Source: Land and Property Management Authority
Base Data Source: Glencore (2015)

- Legend**
- Project Area
 - Approved Wambo Surface Development Area
 - Conceptual Additional Disturbance Area

Aerial Photograph 1983

File Name (A4): R15/3509_326.dgn
20160712 9:11

Map 2-6: Aerial photograph of the area taken in 1983.



Image Source: Land and Property Management Authority
Base Data Source: Glencore (2015)

- Legend**
- Project Area
 - Approved Wambo Surface Development Area
 - Conceptual Additional Disturbance Area

Aerial Photograph 1992

File Name (A4): R15/3509_327.dgn
20160712 13.02

Map 2-7: Aerial photograph of the area taken in 1992.

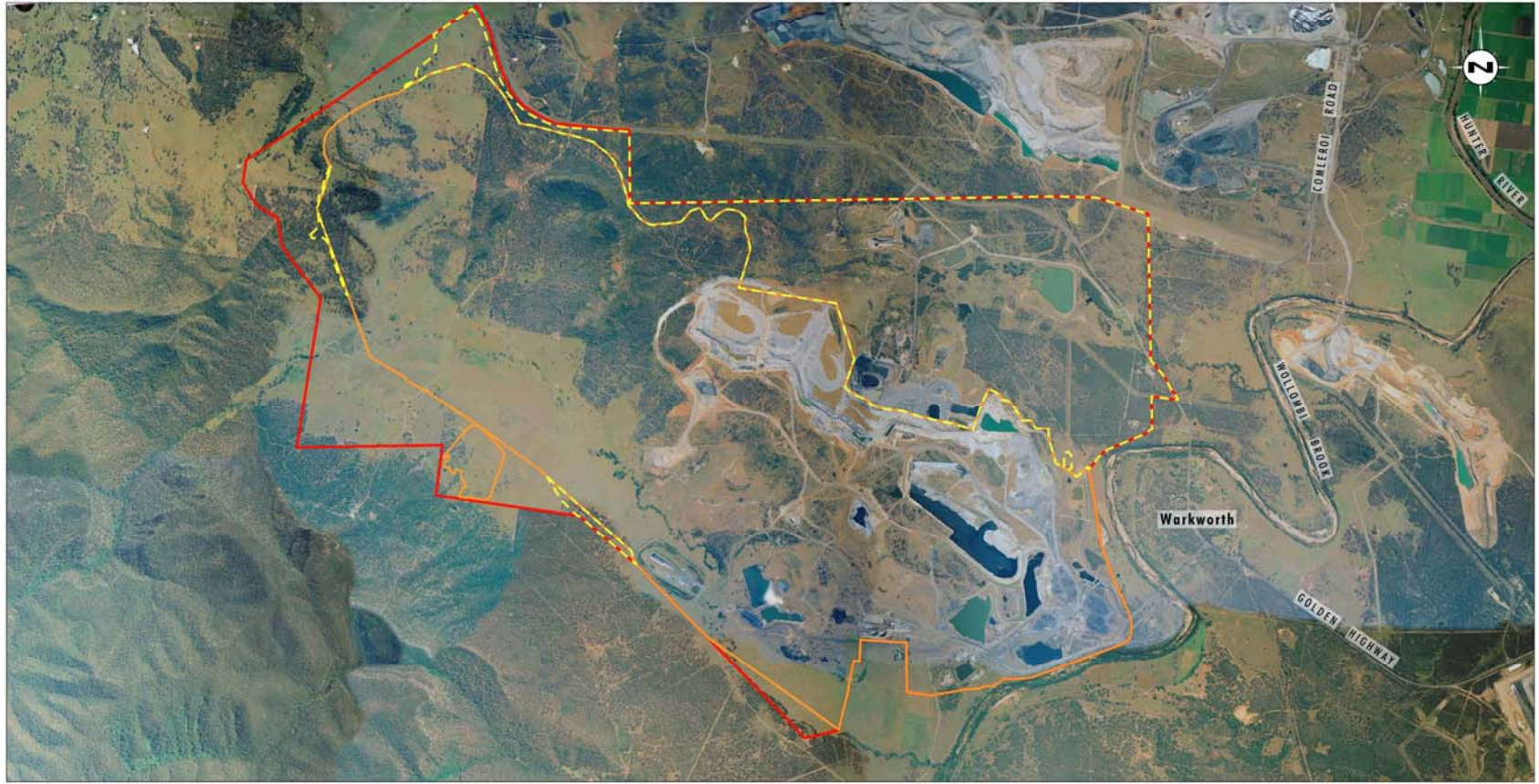


Image Source: Land and Property Management Authority
Base Data Source: Glencore (2015)

- Legend**
- Project Area
 - Approved Wambo Surface Development Area
 - Conceptual Additional Disturbance Area

Aerial Photograph 2001

File Name (A4): R15/3509_328.dgn
20160713 11.36

Map 2-8: Aerial photograph of the area taken in 2001.

2.4 Historical Themes

A historical theme is a research tool, which can be used at the national, state or local level to aid in the identification, assessment, interpretation and management of heritage places (AHC 2001:1). Nine national historical themes have been identified by the Australian Heritage Commission (AHC now Australian Heritage Council). The Heritage Division, OEH has identified thirty-five historical themes for understanding the heritage of NSW. The development of the Project Area is broadly reflective of the history of the local region, and can be assessed in the context of the broader historic themes defined by the Heritage Division, OEH and AHC. In accordance with the Heritage Division and AHC framework of historic themes, the themes in Table 2-3 are relevant to the Project Area and locality.

Table 2-3: Historical Themes Relevant to the Project Area and Locality

National	National Sub Themes	NSW Themes	Local Themes	Examples
Peopling Australia	Living as Australia's earliest inhabitants	Convict	Activities relating to incarceration, transport, reform, accommodation and working during the convict period in NSW.	Landscapes of control, convict built structure.
	Adapting to diverse environments			
Developing local, regional and national economies	Developing Primary Production	Pastoralism	Activities associated with the breeding, raising, processing and distribution of livestock for human use.	Rural landscape, hay barn, dairy, vineyard, farmstead, fencing, shed, orchard.
		Agriculture	Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes.	Pastoral landscape, homestead, fencing, well, water trough, shearing shed.
		Mining	Activities associated with identification, extraction, processing and distribution of mineral ores.	Mining field or landscape, mine, quarry, processing plant, miner's office, collier, mine shaft.
Developing local, regional and national economies	Moving Goods and People	Transport	Activities associated with moving goods and people from one place to another, and systems for the provision of such services.	Highway, lane, stock route, bridge, footpath, aerodrome, horse yard.
Building settlements, towns and cities	Making settlements to serve rural Australia	Land Tenure	Activities and processes for identifying forms of ownership and occupancy of land.	Fence, survey mark, subdivision pattern, stone wall.
	Supplying Urban Services	Utilities	Activities associated with the provision of services, especially on a communal basis.	Bridge, culvert, weir, well, cesspit, reservoir, dam.
		Accommodation	Activities associated with the provision of accommodation, and particular types of accommodation.	Homestead, cottage, house site (archaeological site).
Governing	Defending Australia	Defence	Activities associated with defending places from hostile takeover and occupation.	RAAF base.

3 Aboriginal Community Consultation

Aboriginal people have rights and interests in the assessment and control of cultural heritage objects and places. In recognising these rights and interests, all parties concerned with identifying, conserving and managing cultural heritage should acknowledge, accept and act on the principles that Aboriginal people:

- are the primary source of information about the value of their heritage and how this is best protected and conserved;
- must have an active role in any Aboriginal cultural heritage planning process;
- must have early input into the assessment of the cultural significance of their heritage and its management so they can continue to fulfil their obligations towards their heritage; and
- must control the way in which cultural knowledge and other information relating specifically to their heritage is used, as this may be an integral aspect of its heritage value.

Consultation with Aboriginal people about cultural heritage places and the manner in which they should be managed is required under Part 6 of the NP&W Act. The processes of consultation are specifically outlined in the Department of Environment, Climate Change and Water publication 'Aboriginal cultural heritage consultation requirements for proponents 2010'.

This project has followed these guidelines, and has also been consistent with the DECC 2005 guidelines.

Table 11.1 outlines the series of consultation activities and workshops conducted by United throughout the preparation of this ACHAR.

3.1 Consultation Objectives and Approaches

'Consultation with Aboriginal people is an integral part of the process of investigating and assessing Aboriginal cultural heritage. Aboriginal people who hold cultural knowledge about the area, objects and places that may be directly or indirectly affected by the proposed activity must be given the opportunity to be consulted. This is done through the process of investigating, assessing and working out how to manage the harm from the proposed activity. Consultation must adhere to the requirements set out in Clause 80C of the NPW Regulation' (OEH 2011:2).

'Conservation, interpretation and management of a place should provide for the participation of people for whom the place has special associations and meanings, or who have social, spiritual or other cultural responsibilities for the place' (Australia ICOMOS 1999).

Based on the SEAR's and OEH guidelines for Aboriginal cultural heritage assessment in NSW, Aboriginal participation and involvement of in all stages of cultural heritage assessment and management has been fundamental to the Project's ACHAR.

Throughout all stages of the assessment process, RAPs were invited to identify how they would like to participate in the Project's Aboriginal cultural heritage assessment process, including what cultural information that they wanted to share to inform the assessment process, and what information (if any) should remain non-disclosed in the assessment and reporting process.

After formal notification and expressions of interest in the Project by the RAPs, United staff approached the three knowledge holder groups, WTC, WNAC and the PCWP to understand if they wished to use the consultation model for the United Continued Operations Project that was developed during the two years of consultation for another Glencore site, the Bulga Optimisation Project (and subsequently utilised on the Mt Owen Continued Operations EIS).

All three parties considered this the best methodology to allow them and their elders to contribute to the United cultural heritage assessment and United formally engaged the WTC, WNAC and the PCWP to prepare cultural heritage values reports for the Project.

Fundamental to the consultation process was the active participation of all RAPs in the assessment of Project impacts, and the development of management recommendations and measures relevant to the Aboriginal cultural significance values statements and assessment concerns.

United offered an alternate consultation pathway to any RAP by forming a group which was consulted by United and ACHM. These RAPs were not aligned with the WTC, WNAC or the PCWP, or had decided they wished to be consulted directly by the Project. For the purposes of this report, this fourth group is referred to as the Community RAPs.

The steps employed in the cultural heritage assessment for the Project include(d):

- Workshop discussions with the RAPs
- RAPs statements of cultural values, survey methodology comments and sharing of historic information including Project area land use context statements;
- Reference to OzArk archaeological reports to gain an understanding of other components of the Aboriginal cultural heritage assessment;
- Facilitation of RAPs consultation on the cultural values of the Project Area, and where required, Walks on Country to identify and record Aboriginal cultural heritage values;
- Archival investigation;
- Consultation with OEH as required; and
- Assessment of the key cultural heritage issues for the Project, taking into account relevant guidelines, policies and plans and input from RAPs including Traditional Owners and Knowledge Holders.

As an outcome of this process, this ACHAR presents a combined understanding of Aboriginal cultural heritage values of the Project Area, as identified by all RAPs, historical research and the archaeological assessment.

This ACHAR also presents an impact assessment that incorporates the views of all RAPs, and presents a series of management measures and recommendations that have been prepared in consultation with the RAPs.

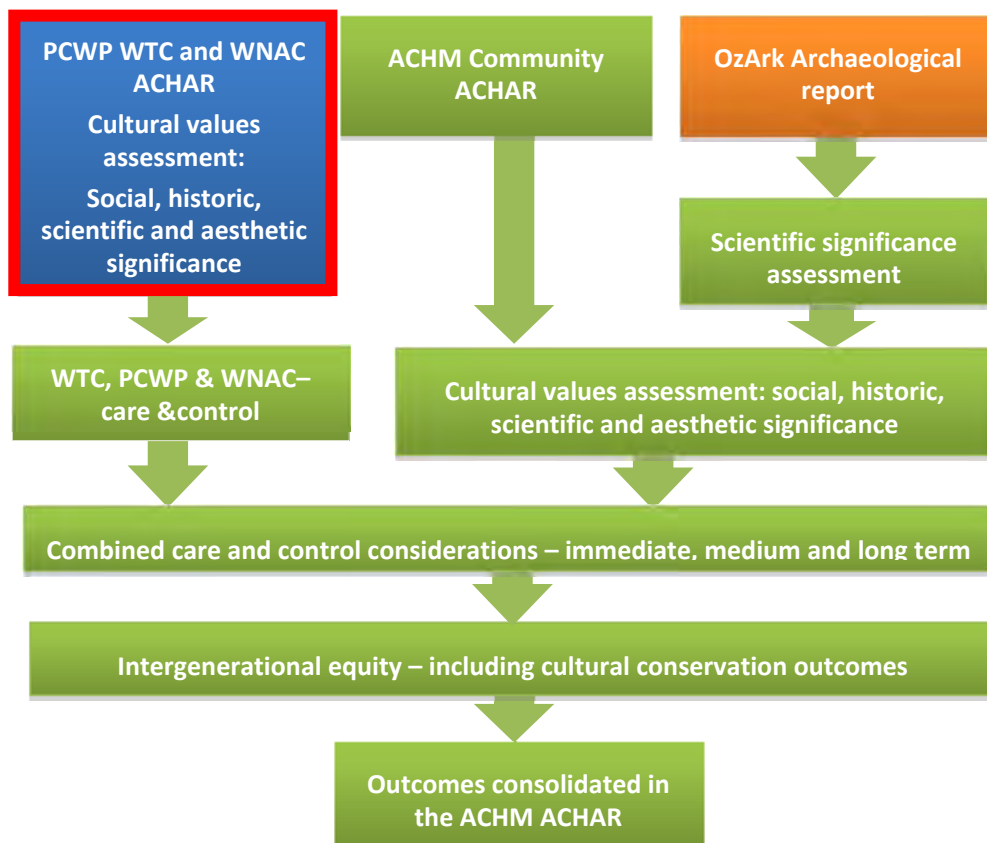


Figure 3-1: Integrated ACHAR approach. Please note, no ACHAR was received from WTC.

The following sections provide a summary of the key stages of consultation with and involvement of the RAPs in the preparation of the ACHAR, excluding a description of the consultation undertaken for the separate reports prepared by the PCWP and WNAC and the report information compiled in consultation with the Community RAPs. Figure 3-1 (above) illustrates how all four information sources, combined with the results of the Project’s archaeological assessment have been prepared to provide a comprehensive assessment of cultural significance values of the Project Disturbance Area in the Project Area, and to provide a consolidated management framework for the Project based on intergenerational equity and Care and Control considerations.

3.2 Summary of Consultation Activities

Appendix 11.1 provides a detailed summary of all consultation activities undertaken for the Project (in tabular format).

3.3 Cultural Heritage Assessment Process for the Project

The key stages of the cultural heritage assessment process used in the Project are derived from the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011).

The stages of consultation and assessment, as described in the Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC 2005) include:

- Undertaking a preliminary assessment to determine if the Project is likely to have an impact on Aboriginal cultural heritage
- Identifying the Aboriginal cultural heritage values associated with the area through consultation with Aboriginal people with cultural knowledge or responsibilities for country in which the proposed project occurs, written and oral research and field investigations
- Understanding of the significance of the identified Aboriginal cultural heritage values
- Assessing the impacts of the proposed development on Aboriginal objects and Aboriginal places
- Describing and justifying the proposed outcomes and alternatives and
- Documenting the Aboriginal cultural heritage impact assessment and the conclusion and recommendations to afford appropriate protection of Aboriginal cultural value

3.3.1 Four Stages of Consultation and Assessment

Consultation consistent with the DEC (2005) and DECCW (2010a) guidelines and in accordance with the principles of The Burra Charter (Australia ICOMOS, 2013) has involved four consultation stages as detailed in the DECCW (2010a) guidelines outlined below.

Stage 1: United initiated formal notification of the proposed Project and the ACHAR process, and the opportunity for Aboriginal parties to formally register their interest in the Project;

Stage 2: United, OzArk, and ACHM conducted initial Project description consultation, which included presenting information on the proposed Project to all Aboriginal parties (including the Local Aboriginal Lands Council – WLALC) who registered an interest in **Stage 1**. Initial consultation also presented the draft Aboriginal Cultural Heritage Assessment and Consultation Methodology for review by the RAPs, as well as an overview of the Draft Aboriginal Heritage Survey Methodology. Copies of this information was shared with all RAPs. Consultation with the RAPs involved a combination of consultation forums, including meetings, briefing sessions and also included Project Area inspections. **Stage 2** also included the briefings of the PCWP, WTC and WNAC including scopes of work and contracts for these groups to produce their own cultural values reports.

Stage 3: During Stage 3, OzArk conducted extensive archaeological fieldwork and ACHM conducted cultural values consultation with the Community RAPs. The approach actively involved the Community RAPs in the assessment of their cultural heritage values, the likely Project impacts, if approved, and the development of management measures.

As part of the overall assessment approach, United also conducted regular consultation; and provided support and advice to the PCWP, WTC and WNAC in relation to the Project, and specifically in relation to the preparation of their separate ACHAR's or targeted workshops. To assist the groups, United provided access to materials and land, to enable these groups to assess their cultural heritage values, the significance of Aboriginal cultural places and artefacts, the likely Project impacts, if approved, and their management measures. PCWP, WTC and WNAC members were also involved in the archaeological fieldwork.

Elders also provided comment on site specific and cultural, social, historic and aesthetic values, which included the significance of archaeological and cultural sites, and values associated with flora and fauna and landscape features to inform the assessment and management measures. They consisted of organised bus tours and site visits of the cultural sites on the United Continued Operations Project for the benefit of the Project's RAPs and their Elders.

United and ACHM conducted further feedback sessions during **Stage 3** to review the Community RAPs and the PCWP, WTC and WNAC values and recommendations, prior to the issue of the ACHAR reports for their 28 day review period. This approach provided the opportunity for all RAPs to discuss draft reports and recommendations; and provide further comment on Aboriginal cultural heritage values and management measures.

Stage 4: United, OzArk and ACHM conducted further consultation in relation to the RAPs review of the Projects draft cultural heritage assessment report, to seek feedback, modify reports as appropriate, receive and review submissions and to incorporate any additional input into the finalised ACHAR. The mandatory 28 day review period during Stage 4 was extended by United for approximately 2 months to allow for additional consultation between PCWP and the project team. Comments on the Draft ACHAR were received from the PCWP and WNAC, with the PCWP's comments the most extensive. United and ACHM conducted further consultation with PCWP in relation to their feedback in order to further understand any concerns and to amend the finalised ACHAR outcomes as appropriate.

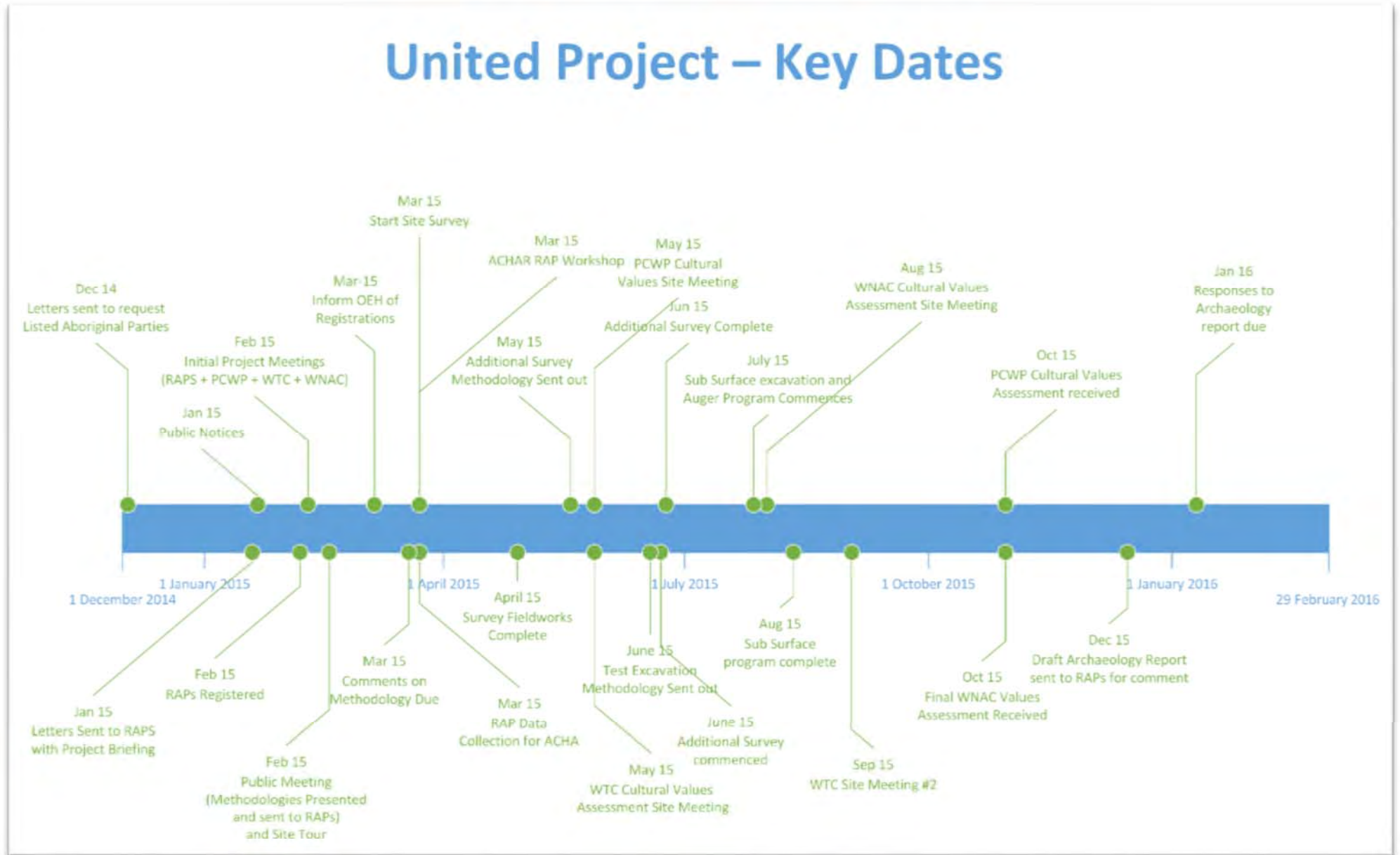


Figure 3-2: Key dates for the consultation processes of the United Wambo Open Cut Coal Mine Project.

3.4 Stage 1 Consultation – Notification and Registration of Interest

Stage 1: United conducted consultation of formal notification of the proposed Project and the ACHAR process, and the opportunity for Aboriginal parties to formally register their interest in the Project.

Stage 1 of the DECCW (2010) consultation process aims to *'Identify, notify and register Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and / or places in the area of the proposed Project'*.

3.4.1 Agency Notification

In accordance with Section 4.1.2 of DECCW (2010), United notified the following organisations on 8th December 2014 about the Project, and sought information on any Aboriginal people or organisations who may hold cultural knowledge relevant to determining the cultural significance associated with the Project Area:

- Office of Environment and Heritage (who responded on 16th December 2014 with a list of 78 Aboriginal parties);
- Wanaruah Local Aboriginal Land Council (who responded on 29th January 2015 adding 1 Aboriginal Party);
- Office of the Registrar of Aboriginal Land Rights (who responded identifying that there were no Registered Aboriginal Owners for the United area) ;
- National Native Title Tribunal (who did not respond);
- NTSCorp (who responded on 16th December 2014 without providing any further information);
- Singleton Shire Council (who responded on 8th January 2015 identifying representatives of 3 organisations); and
- Hunter Local Land Services (who did not respond).

3.4.2 Public Notification

Advertisements were placed in the following publications seeking registrations of interest for the Project

- Singleton Argus: 16th January 2015
- Muswellbrook Chronicle: 16th January 2015
- Hunter Valley News: 21st January 2015

A copy of this advertisement is provided in Appendix 11.3.1.

3.4.3 Written Notification to invite Participation in the ACHAR Process

Following the newspaper advertisements and correspondence mentioned above, a comprehensive list was developed containing the contact details of 125 Aboriginal parties. A written notification was posted to each Aboriginal party on 19th January 2015 to provide the opportunity to register an interest and participate.

In accordance with Section 4.1.6 of DECCW (2010a) guidelines, on the 6th March 2015 a copy of the following documentation was provided to OEH and WLALC at the end of the formal Stage 1 registration period:

- The Advertisements placed in the Singleton Argus and the Muswellbrook Chronicle, and the Hunter Valley News;
- Copies of original letters sent to Aboriginal parties notifying them of the Projects Aboriginal cultural heritage assessment process; and
- A list or record of those Aboriginal parties who registered an expression of interest in the Project's Aboriginal cultural heritage assessment.

As specified in Section 4.1.5 of DECCW (2010a) guidelines, all RAPs were afforded the opportunity to withhold their information being provided to OEH.

A copy of the initial letter sent to the identified individuals and organisations is shown in Appendix 11.3.3.

3.4.4 Registration of Aboriginal Parties

In accordance with Section 4.1.3 of DECCW (2010), all 125 Aboriginal people identified through the process noted above were sent notification letters on 19th January 2015, introducing the United Project and inviting their registrations of interest by 6th February 2015.

The project had 72 RAPs by the 19th February 2015. A further 11 people registered as RAPs between 19th February and 10th March 2015.

As of 10th March 2015 there were 83 RAPs for the Project. No further registrations were received by the Project after 10th March 2015. Those who registered between 19th February and 10th March 2015 were individually sent all of the relevant information (which had already been sent to the 72 RAP's registered by 19th February 2015).

The total of 83 RAP's includes all members of the Plains Clans of the Wonnarua People, the Wonnarua Traditional Custodians and the Wonnarua Nation Aboriginal Corporation who registered as well as all RAP's who were not aligned with one of those groups.

A full list of all RAP's is included in Appendix 11.2.

3.5 Stage 2 - Further Consultation and Site Tours

In accordance with Section 4.2.1 of DECCW (2010a), the RAPs who had registered an interest in the Project during Stage 1 were sent a letter on 19th February inviting their attendance at a Project Induction Meeting to prepare for the archaeological surveys commencing on the 23rd March 2015.

Table 3-1: Consultation activities and site tours conducted during Stage 2 of the ACHAR.

Date	Who	What
08/02/15	Wonnarua Traditional Custodians	Meeting with Wonnarua Traditional Custodians (WTC) to discuss the Scope of works for ACHA, project description and methodology for the archaeological survey
09/02/15	Wonnarua Nation Aboriginal Corporation	Meeting with Wonnarua Nation Aboriginal Corporation (WNAC) to discuss the Scope of works for ACHA, project description and methodology for archaeological survey
13/02/15	Plains Clan of the Wonnarua People	Meeting with Plains Clan of the Wonnarua People (PCWP) to discuss the Scope of works for ACHA, project description and methodology for archaeological survey
17/02/15	Project registered Aboriginal parties not being consulted by PCWP, WNAC or WTC	Public Meeting in Singleton - Project Description, archaeological survey Methodology Presented, ACHA methodology presented
17/02/15	Project registered Aboriginal parties not being consulted by PCWP, WNAC or WTC	Site Tour - United Collieries
16/02/16	Wonnarua Traditional Custodians	Workshop held at Singleton Bowling Club to discuss cultural values of project sites and potential mitigation and management measures with WTC. ¹

3.5.1 ACHAR agreements from PCWP, WNAC and WTC

Through the consultation during **Stage 2** United provided the opportunity for the PCWP, WNAC and WTC to develop their own ACHAR's. The reports were to be completed and delivered to United with a comprehensive assessment of the cultural values of the Project Disturbance Area from the RAPs perspective, and also to provide United with management recommendations for the Project. Their recommendations were to specifically address intergenerational equity as well as Care and Control considerations.

These groups wished to consult their own members (some of whom were Project's RAPs) and the elders and knowledge holders.

United was given access to the WTC, PCWP and the WNAC nominated principal contacts and their Project's RAPs, to support cultural values consultation during their process of gathering and reporting results during **Stage 3** and **Stage 4**. PCWP and WNAC provided their own ACHA reports, however the WTC report was not delivered. Because this report was not delivered, United provided an opportunity for members of the WTC to attend a cultural values and recommendations workshop in Singleton so as to ensure that the WTC cultural values and management recommendations were captured and included in the final overarching ACHAR.

¹ The purpose of this workshop was to obtain cultural values from the WTC as the cultural values report they had been contracted to produce was not delivered.

3.6 Stage 3 Consultation – Cultural Values / Impact Assessment and Development of Management Measures

Stage 3 of the DECCW (2010a) consultation process relates to gathering information about the cultural significance values of an assessment area, to seek Aboriginal registrant information that will enable the cultural significance of the place to be determined, and to provide Aboriginal registrants with the opportunity to provide input on cultural heritage management options.

RAPs were provided with numerous opportunities to participate in the Stage 3 consultation program between March and September 2015.

During **Stage 3** activities included:

- Proposals from PCWP, WNAC and WTC to undertake own cultural values assessment. Contracts exchanged.
- WTC cultural values site visit and meeting / workshop (WTC conducted 2 site visits to the Project area)
- WNAC cultural values site visit and meeting / workshop
- PCWP cultural values site visit and meeting / workshop
- Site visit and cultural values workshop for all RAP's not being consulted by PCWP, WTC and WNAC
- Delivery of archaeological survey methodology to all RAPs
- Delivery of additional survey methodology to all RAPs
- Delivery of test excavation methodology to all RAPs
- A total of 238 person days of archaeological survey and test excavation (32 days fieldwork attended by 7 or more RAPs each day)
- Impacts workshop for RAPs not being consulted by PCWP, WNAC or WTC
- Receipt of comments on draft archaeological values assessment from WNAC and PCWP. No comment received from any other party.
- Workshop with WTC to discuss cultural values of the Project Area and potential mitigation / management recommendations. The opportunity for a workshop was provided because a cultural values assessment report was not forthcoming from WTC.

See **Table 3-2** (see below) and Appendix 11.2.

Table 3-2: Stage 3 consultation activities for the United Project

Date	Consultation Type	OEH Requirements	Consultation Stage	Registered Aboriginal Party / Agency	Description
11/03/15	Letter	4.3.2, 4.3.4	3	Plains Clan of the Wonnarua People	Proposal for PCWP to undertake United Project ACHAR
23/03/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	RAPs attended on Rostered basis. Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
24/03/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
25/03/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
26/03/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
27/03/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
30/03/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
31/03/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
01/04/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
02/04/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
08/04/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
09/04/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
10/04/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
15/04/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
16/04/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
17/04/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
29/04/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
19/05/15	Letter	4.3.5	3	All Registered Aboriginal Parties	Draft additional survey methodology mail out to all parties
19/05/15	Letter	4.3.5	3	All Registered Aboriginal Parties	Survey summary report mail out to all parties
19/05/15	Letter	4.3.5	3	HVAC	Draft additional survey methodology mail out to all parties
19/05/15	Letter	4.3.5	3	HVAC	Survey summary report mail out to all parties
19/05/15	Letter	4.3.5	3	Plains Clan of the Wonnarua People	Draft additional survey methodology mail out to all parties
19/05/15	Letter	4.3.5	3	Plains Clan of the Wonnarua People	Survey summary report mail out to all parties
19/05/15	Letter	4.3.5	3	Wanaruah Local Aboriginal Land Council	Draft additional survey methodology mail out to all parties

United Wambo Open Cut Coal Project

19/05/15	Letter	4.3.5	3	Wanaruah Local Aboriginal Land Council	Survey summary report mail out to all parties
19/05/15	Letter	4.3.5	3	Wonnarua Nation Aboriginal Corporation	Draft additional survey methodology mail out to all parties
19/05/15	Letter	4.3.5	3	Wonnarua Nation Aboriginal Corporation	Survey summary report mail out to all parties
19/05/15	Letter	4.3.5	3	Wonnarua Traditional Custodians	Draft additional survey methodology mail out to all parties
19/05/15	Letter	4.3.5	3	Wonnarua Traditional Custodians	Survey summary report mail out to all parties
28/05/15	Meeting	4.3.3, 4.3.4, 4.3.5	3	Plains Clan of the Wonnarua People	PCWP Cultural Values assessment site visit and meeting
28/05/15	Meeting	4.3.3, 4.3.4, 4.3.5	3	Wonnarua Traditional Custodians	WTCNTAC Cultural Values assessment site visit and meeting
04/06/15	Letter	4.3.3, 4.3.4, 4.3.5	3	RAP's not being consulted by PCWP, WNAC or WTC	Invitation to site tour and cultural values workshop
18/06/15	Letter	4.3.1, 4.3.2	3	All Registered Aboriginal Parties	Draft test excavation methodology mail out
18/06/15	Letter	4.3.1, 4.3.2	3	HVAC	Draft test excavation methodology mail out
18/06/15	Letter	4.3.1, 4.3.2	3	Plains Clan of the Wonnarua People	Draft test excavation methodology mail out
18/06/15	Letter	4.3.1, 4.3.2	3	Wanaruah Local Aboriginal Land Council	Draft test excavation methodology mail out
18/06/15	Letter	4.3.1, 4.3.2	3	Wonnarua Nation Aboriginal Corporation	Draft test excavation methodology mail out
18/06/15	Letter	4.3.1, 4.3.2	3	Wonnarua Traditional Custodians	Draft test excavation methodology mail out
22/06/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
23/06/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
24/06/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
08/07/15	Meeting	4.3.3, 4.3.4, 4.3.5	3	Project registered Aboriginal parties not being consulted by PCWP, WNAC or WTC	Site tour and Workshop to determine the cultural values of the Project area
08/07/15	Letter	4.3.1, 4.3.2	3	Plains Clan of the Wonnarua People	Letter from PCWP commenting on draft test excavation methodology.
23/07/15	Letter	4.3.1, 4.3.2	3	Plains Clan of the Wonnarua People	Letter responding to Tocumwal comments on the draft Test Excavation methodology.
27/07/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
28/07/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
29/07/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
30/07/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
31/07/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
01/08/15	Meeting	4.3.3, 4.3.4, 4.3.5	3	Wonnarua Nation Aboriginal Corporation	WNAC Cultural Values workshop and site visit at United
03/08/15	Site Survey	4.3.2, 4.3.4	3	All Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area

United Wambo Open Cut Coal Project

04/08/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
05/08/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
05/08/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
06/08/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
10/08/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
11/08/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
02/09/15	Meeting	4.3.3, 4.3.4, 4.3.5	3	Wonnarua Traditional Custodians	WTCNTAC Cultural Values assessment site visit #2
17/09/15	Site Survey	4.3.2, 4.3.4	3	Rostered Registered Aboriginal Parties	Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
25/09/15	Report	4.3.5, 4.3.6	3	Plains Clan of the Wonnarua People	Draft Aboriginal Cultural Heritage Assessment Report received from PCWP
25/09/15	Report	4.3.5, 4.3.6	3	Wonnarua Nation Aboriginal Corporation	Draft Aboriginal Cultural Heritage Assessment Report received from WNAC
30/09/15	Letter	4.3.5	3	All Registered Aboriginal Parties	Sub Surface Survey program summary report mail out to all parties
30/09/15	Email	4.3.5	3	HVAC	Sub Surface Survey program summary report mail out to all parties
30/09/15	Email	4.3.5	3	Plains Clan of the Wonnarua People	Sub Surface Survey program summary report mail out to all parties
30/09/15	Letter	4.3.5	3	Wanaruah Local Aboriginal Land Council	Sub Surface Survey program summary report mail out to all parties
30/09/15	Email	4.3.5	3	Wonnarua Nation Aboriginal Corporation	Sub Surface Survey program summary report mail out to all parties
30/09/15	Email	4.3.5	3	Wonnarua Traditional Custodians	Sub Surface Survey program summary report mail out to all parties
16/10/15	Report	4.3.5, 4.3.6	3	Wonnarua Nation Aboriginal Corporation	Final Aboriginal Cultural Heritage Assessment Report received from WNAC
21/10/15	Report	4.3.5, 4.3.6	3	Plains Clan of the Wonnarua People	Final Aboriginal Cultural Heritage Assessment Report received from PCWP
17/11/15	Letter	4.3.3	3	Project registered Aboriginal parties not being consulted by PCWP, WNAC or WTC	Invitation to Cultural Heritage Impact Management and Mitigation Measures Workshop
25/11/15	Meeting	4.3.3, 4.3.4, 4.3.5, 4.3.6	3	Registered Aboriginal parties not being consulted by PCWP, WNAC or WTC	Cultural Heritage Impact Management and Mitigation Measures Workshop
20/01/16	Email	4.3.3	3	Wonnarua Traditional Custodians	Email to WTC spokespersons informing of workshop
27/01/16	Letter	4.3.3	3	Wonnarua Traditional Custodians	Letter to all RAPs aligned with WTC inviting to workshop
09/02/16	Phone Call	4.3.5, 4.3.7	3	Wonnarua Nation Aboriginal Corporation	Comments on Draft Archaeological Values Assessment Report received from WNAC
10/02/16	Email	4.3.5, 4.3.7	3	Plains Clan of the Wonnarua People	Comments on Draft Archaeological Values Assessment Report received from PCWP
16/02/16	Meeting	4.3.3, 4.3.4, 4.3.5, 4.3.6	3	Wonnarua Traditional Custodians	Workshop held at Singleton Bowling Club to discuss cultural values of project sites and potential mitigation and management measures.
23/02/16	Email	4.3.5, 4.3.7	3	Wonnarua Nation Aboriginal Corporation	Comments on Draft Archaeological Values Assessment Report received from WNAC

3.6.1 Feedback

- Comments were received from the PCWP on the draft *archaeological survey and test excavation methodology* on 10th June 2015. See Appendix 11.3.10.
- Further comments were received from the PCWP on the *draft archaeological survey and test excavation methodology* on 8th July 2015. See Appendix 11.3.12.
- Comments were received from the PCWP on the *draft Aboriginal archaeological values report* on 10th February 2016. Due to the detailed nature of the PCWP comments, United decided to engage an independent archaeologist to peer review the work of OzArk Environment and Heritage. See Appendix 11.3.15. The completed peer review is shown in Appendix 11.3.19.
- Comments were received from the WLALC on the *draft Aboriginal archaeological values report* on the 18th February 2016. See Appendix 11.3.16.

3.7 Stage 4 Consultation – Draft ACHAR Review

Stage 4 of the DECCW (2010a) consultation process relates to RAPs reviewing the draft ACHAR and providing feedback.

The Draft ACHAR was sent out to the Registered Aboriginal Parties for 28 day review on the 29th April 2016.

The 28 day period was extended for approximately 7 weeks (closed on the 22nd July 2016) by Glencore to allow more time for comment, although very little was forthcoming from the majority of RAPs.

Feedback on the draft ACHAR was only received from the PCWP and WNAC during the (extended) 28 day review.

3.7.1 Aboriginal Cultural Values Assessment Feedback

The following details any submissions received during the 28 day review period for the cultural values assessment.

Table 3-3: Table of Stage 4 ACHAR Comments

Group	Comments
WTC	Nil
WLALC	Nil
Community RAP's	Nil
PCWP	Lengthy correspondence between PCWP and Proponent, concerning the adequacy of the Archaeological values assessment report undertaken by OzArk. Glencore commissioned a peer review of the archaeological report by a respected archaeologist with extensive Hunter Valley experience (Neville Baker) who found no issue with the original archaeological report or the findings. See Appendices 11.3.15, 11.3.17, 11.3.19 and 11.3.20). During the 2 month extension of the 28 day review period, a further meeting was held between Glencore, PCWP and ACHM (14th July 2016) to discuss and contextualise the concerns raised by PCWP in the earlier correspondence. PCWP and Glencore agreed on some further management recommendations which alleviated the concerns of the PCWP (See Appendix 11.3.22).
WNAC	Email from WNAC confirming that they have no issues with the ACHAR (see Appendix 11.3.23).

4 Summary and Analysis of Background Information

4.1 Historical Narrative of the Project Area

Literature and research concerning the Wonnarua of the central Hunter Valley area is incomplete, largely as a result of omissions, silence and antiquated concepts of ethnology. In relation to New South Wales' Indigenous population, ethnohistoric attention has focused on coastal communities to the detriment and exclusion of those inland, thereby making the material about the Wonnarua patchy at best, but more commonly absent (Brayshaw, 1987: 74). Research into the language group was further hampered by changing notions of significance. In considering the lack of historical and archaeological information about campsites, Koettig (1990: 35) for example acknowledges that they were neglected as an important subject matter by her peers for many, many decades, because they were regarded as relatively unimportant, especially when compared to ceremonial sites. Even though they are now deemed to be of significance, the literature remains largely silent about them.

Nolan (2012:78) reminds her readers there was a popular concept during the colonial period that time (and therefore history) in the new colony of New South Wales began with the arrival and occupation of Europeans. Consequently, there was a lack of activity in recording the detailed lives of Indigenous people at the commencement of European settlement. This, however, began to change from the 1830s, yet by this time, these communities had already been adversely and irretrievably effected by disease, violence, displacement and dispossession and so the accounts were not a true reflection of how they once had lived (Umwelt, 2011).

4.1.1 Prior to White Settlement

The land of the Wonnarua was vast and stretched over much of the Hunter Valley. Tindale (1974: 201) estimated that it covered over five thousand square kilometres. Its borders were somewhat vague and, as a result, often erroneously recorded in the literature, possibly because of the new settlers' lack of understanding of the complexity of Indigenous society and its association with land. Tindale (1974: 201) defined Wonnarua country as being located on the '*upper Hunter River from a few miles above Maitland west to Dividing Range. The southern boundary with the Darkinjang is on the divide north of Wollombi*'. The Wonnarua's neighbours were the Darkinung (to the south), the Awabakal (to the south east), the Worimi (to the east) and the Wiradjuri (to the west) (Horton, 1994). They had close ceremonial ties to the Darkinung and Wiradjuri people (Macquarie University, 2009). See Figure 4-1, below.

The land of the Wonnarua consisted largely of open 'park like' plains. One of its characteristics was an absence or sparseness of trees, with the landscape just north of Jerry's Plain described as being '*very fine and little timber, only a few trees to an acre, and some patches without*' (Howe (1819) cited in Brayshaw, 1987: 12). The country around Ravensworth, which is located in a similar landscape context to the Project Area, was described in 1824 as:

Much alluvial flat and undulating land on banks of Foy Brook [later renamed Bowmans Creek] and two small chains of ponds – forest land, generally undulating surface ... Iron Bark, scrubby land of small extent – soils rich vegetable alluvial, rich stiff and friable loams with some poor stuff and stone gravelly, yet forming a very desirable tract of country (Dangar (1824) cited in Brayshaw 1987, p. 25).

The population of the Wonnarua prior to European settlement is unknown and approximations vary widely. Estimates vary, and were most likely made well after populations had declined, so must be treated with caution. Discrepancies also arose partly because when official census were conducted, Indigenous people often went unseen by Europeans, either intentionally or unintentionally. When travelling through the area in 1825, Cunningham observed that although no Aboriginal people had been seen '*their recent marks on the trees and fired country*' showed that they had been in the area (Cunningham (1825) cited in Bradshaw 1987: 20).

The structure of Indigenous communities was complex. The Wonnarua comprised a nation, or language group. They all spoke the one language and shared similar customs and beliefs. However, within that group there was clans, each with their own territories. According to Fawcett (1898: 180), Wonnarua men belonged to one of four skin groups: either of the *Ippye*, *Kumbo*, *Murree* or *Kubbee*. Women, conversely, were either *Ippatha*, *Butha*, *Matha* or *Kubbitha*. With marriage within skin groups strictly forbidden, members of different clans lived together in small communities or familial groups.

As Miller (1985) discusses, kinship was the very thing that '*welded Koori society together*' since everyone was related to one another in a web of obligations, biological connections and spiritual associations. While the mother and father were important people in a child's life, a boy or girl's uncle (mother's brother) was particularly significant as it was he who taught them many things in their early lives. For males, this relationship altered, though, when boys were initiated after reaching puberty and were transformed into men.



Figure 4-1: The boundary lines of the Wonnarua and their neighbours according to Norman Tindale (1940).

Spiritual kinship also united the Wonnarua with one another, the landscape and everything in it, *'thus kinship interwove throughout Aboriginal society, creating a very complex dynamic in which every individual had a specific relationship with every other individual, with the food they ate, and with the land'* (Bradshaw, 1987: 37). Before a child was born, he or she was assigned totems and skin groups according to that of the biological father (Miller, 1985). The child's mother was from the opposite totem and skin group. The totem system linked them with the Dreaming as it was a *'legacy of the spirits'* (Miller, 1985).

Life for the Wonnarua was intensely spiritual, as it was for all Indigenous people. Everything in the landscape was created by the spirits. A new born baby was perceived as a spirit in physical, human form (Miller, 1985). Events, natural or otherwise, were perceived as the workings of benevolent or malevolent spirits. Everything from food shortages and droughts to births and deaths could be explained by the actions of unseen evil or benign actors. Consequently, the Wonnarua along with most Australian Indigenous people saw themselves not as the owners of resources or land but rather as custodians, for these were all created in the Dreamtime by the ancestral or mythical beings. The myths that surrounded and influenced their daily lives were passed on from one generation to another and *'each clan acted as caretakers for those legends which were manifested in the topography of their region'* (Needham, 1981: 4).

The Wonnarua lived a semi nomadic life but, it was not random wanderings. The position of camps was often determined by the availability of natural resources, like food and water, which were sometimes seasonal or

affected by floods, droughts and other climatic events. The availability of water was especially important in choosing a location, *'irrespective of the size of the watercourse.'* The smaller the waterway, the smaller the camp (Koettig, 1990). Many creeks and creek junctions were particularly popular, as is evident in the archaeological record of the Singleton, Muswellbrook and Jerrys Plain region (Brayshaw, 1987: 96). Koettig (1990: 118) reinforces this with her modelling of a variety of Indigenous sites types in the Hunter Valley, the vast majority of which are located in close proximity to water courses.

The sourcing of other natural resources besides food and water also dictated campsite locations. For example, the construction of a canoe being in proximity to a place with suitable trees that had just the right bark to construct it, as did the making of implements (like boomerangs and shields) or the sourcing of other raw materials, such as stone, ochre or resin (Umwelt 2011). Together with natural resources, a suitable vantage point in case of conflict was often considered when deciding on a camp site (Umwelt 2011).

At other times, social events and obligations also influenced a camp's location. Interaction between different nations and clans was an essential aspect of life for all Wonnarua. It provided them with opportunities to trade goods, participate in important ceremonies and strengthen kinship and trading relationships. During the hot summer months when fish were most plentiful, the Wonnarua visited the cooler coastal lands of the Worimi or Awabakal while in the cooler months, the neighbours journeyed to Wonnarua country and took part in *'ritual'* kangaroo hunts (Brayshaw 1987: 82). Such activities not only provided participants with food but also strengthened social and economic ties between the various groups.

Trading relationships between inland and coastal Indigenous communities provided each group with opportunities to procure items that were unavailable in their traditional lands or were in short supply. The Wonnarua traded possum skins for shells with coastal tribes as neither group could source such materials from their traditional lands. The shells were used for a range of purposes such as sharpening tools to fashioning fishhooks (Brayshaw 1987: 67).

Ceremonies were an important aspect of life for the Wonnarua. They were frequently held when natural resources, like food and water, were plentiful. There is now little evidence detailing where such events took place but it is known that they rotated around various sites, thereby allowing *'the local environment to fully recover from periods of intensive exploitation'* (Umwelt 2011). Initiation ceremonies were important rites of passage for boys having reached puberty. It *'would make them spiritually as well as physically different from women. No longer would they eat the female species of game, or collect fruits and yams or even eat with the women'* (Miller 1985). It was a time when they assumed greater responsibilities as they went from being a boy to a man. The actual ceremony was one occasion when neighbours participated in the event. A messenger would be sent to other clans or nations inviting them to the gathering. Two circular clearings would be prepared with a connecting pathway, creating sacred ground where certain parts of the ceremony would take place. These areas were known as 'Bora' grounds.

Being a hunter and gatherer society, much time was spent procuring food and it was frequently sourced within about five kilometres (or a day's walk) of the campsite. The Wonnarua consumed a diet high in protein and obtained this from kangaroo, emu, bandicoot, possum, native rats, fish, insect lava, lizards, snakes, grubs and caterpillars. The water lily was also a popular item of food (Fawcett 1898: 152). Food gathering was performed according to strict gender roles. Men fished, hunted larger game, like wallaby and kangaroo, and used bark nets knitted by women to catch eels, emus and other animals. Women, on the other hand, gathered fruits, grubs, roots, plants and hunted smaller animals, like lizards (Miller 1985).

The landscape provided the Wonnarua with all the tools and items they required for daily living. Bark was one of the most common materials used by the Wonnarua, possibly because of its adaptability (Brayshaw 1987: 59). It was utilised in the construction of many things, from shelters and transportation to shields and implements. Cord from different types of bark was also made and was used for a variety of purposes, such as in the weaving of nets or the securing of stone points to spear shafts (Brayshaw 1987: 60-63). The manufacture of string by women was a sight of interest and intrigue for some early Europeans:

They twist and roll the bark in a curious manner with the palm of the hand upon the leg; with this string they form nets of curious workmanship. In some the meshes are very small and neat, and the whole knit without a knot, excepting at its completion (Ebsworth in Brayshaw 1987: 63).

With a number of large rivers and creeks in the region, bark canoes were important objects for the Wonnarua. The canoes were usually made from one piece of bark and then shaped with the use of fire which made the material malleable. The Australian Museum's Morrison Collection has two bark canoes from the Hunter Valley region (Nolan 2012: 32). Since the vessels were not built to withstand the rigors of the ocean, Nolan (2012, p. 34) speculates that they were constructed by one of the valley's inland tribes and used for some of the area's calmer waters.



Figure 4-2: A canoe from the Hunter Valley. It is made from one single piece of bark and was designed for the quiet waters of the area's inland rivers (Australian Museum, 2010).

Along with bark, hard wood was also used to create a number of different tools. Women's yam sticks, often left undecorated and used in food gathering and preparation, were constructed from wood and were sometimes up to two metres in length (Brayshaw 1987: 65). Hard wood shields and boomerangs were also made.

Boomerangs were important hunting and fighting implements. Their unique, aerodynamic shape enabled the hunter to kill or wound prey from a great distance and, in the hands of a skilled thrower, with great accuracy. They also served as percussive instruments during ceremonies and as fire lighting aids (Australian Museum, 2010.). The Morrison Collection also contains a number of boomerangs from the Hunter Valley region. Since Alexander Morrison sourced many of his artefacts from the St Clair Mission which accommodated a large number of Wonnarua people, it is possible that some of the boomerangs and other objects were made by the Wonnarua (Gray, 2010; Nolan, 2012).

Animals not only provided food for Indigenous communities but a variety of other items. Kangaroo bone was shaped into sewing implements, such as needles, which were needed for making animal skin capes, mending garments or the repair of other goods (Brayshaw 1987:67). Kangaroo and possum skins provided the Wonnarua with warmth and were often sewn together to create articles of clothing, like cloaks or the 'belts' men wore (Brayshaw 1987: 67). A cloak currently housed in the Smithsonian Institute in the United States of America was made in the Hunter Valley and comprises twenty two possum (*Trichosurus vulpecula*) skins and one grey kangaroo (*Macropus giganteus*) skin (Brayshaw 1987: 72).

Aboriginal people were adept at modifying the landscape to suit their needs (Brayshaw 1987: 20). Fire was one of the tools the Wonnarua people used for 'herding' kangaroos. About a month prior to the hunt, Wonnarua people deliberately burnt areas of grassland, thereby attracting kangaroos when the newly germinated grasses grew some weeks later. One visitor to the region in 1830 observed '*a large flock of kangaroos feeding upon young and tender grass which had sprung up after a fire of the natives*' (Brayshaw 1987: 21). The deliberate lighting of fire also increased an area's biodiversity and facilitated travel by destroying the undergrowth that sometimes made movement through the country more arduous. The Wonnarua also altered waterways by creating weirs and fish traps to assist in the sourcing of fish, eels and other water creatures. This was sometimes achieved by the use of grasses (Brayshaw 1987: 77).

4.12 Post European Settlement

The first official European excursion into the Hunter Valley occurred in 1801 when Lieutenant-Colonel Paterson led a party of men along the Coal River (later Hunter River) to explore the region's coal supplies (Brayshaw 1987: 9). Just over a decade later, Europeans were residing at Patersons Plains and Wallis Plains (now known as Maitland) (Umwelt 2011). The establishment of a penal colony at Port Macquarie from 1804 to 1821 slowed the area's settlement but by 1821, the area near Ravensworth had been occupied by the new arrivals, thereby making James Bowman's Ravensworth property the most northern settlement in the valley. By 1826 surveying of the central Hunter Valley had been completed by Henry Dangar which only served to open it up to further development and

exploitation (Brayshaw 1987: 9). Soon after completing his survey, Dangar commented on the speed of the transformation, writing that

'... this division of country ... which, in 1822, possessed little more than its aboriginal [sic] inhabitants, in 1826-7, more than half a million of acres were appropriated and in a forward state of improvement' (Brayshaw 1987: 10).

The Hunter Valley was one of the first areas in the new colony to be settled outside of Sydney and Newcastle. Land with river frontages along the Goulburn and Hunter Rivers and their larger tributaries were the first properties to be acquired by the new occupants. By 1827, 25% of the valley had been appropriated by Europeans (Daly & Brown 1964: 53). For the new settlers, the region *'seemed [like] a pastoral arcadia of thinly wooded alluvial flats, long grass and abundant game'* where profits could be readily made (Nolan 2012: 15). In 1826, one man commented that *'in all these luxuriant plains there is scarcely a superfluous tree to be seen... [The land is] is only requiring the instrumentality of the plough to produce abundant crop'* (Nolan 2012: 15).

With European settlement, radical changes to the landscape soon followed. Tracts of land were denuded of the already relatively sparse timber to make way for agriculture and livestock and coal was mined to build, develop and power the new colony. According to Dangar, 25,000 horned cattle and 80,000 sheep soon roamed the Valley (Brayshaw 1987: 10). Animals not only damaged native vegetation by eating and stamping on it, but also necessitated the felling of trees and the parcelling of land with fences to contain them and support the people who were entrusted with their care. Such actions affected the habitats and habits of the plants and animals that were central to the day to day existence of the Wonnarua.

As Europeans appropriated the central Hunter Valley for their own purposes, the Wonnarua were forced off their lands. Initially the settlers occupied the best, flat locations along rivers and creeks but soon spread further afield as they appropriated more and more land. This forced Indigenous clans to retreat further and further inland. Consequently, they were driven to seek resources beyond their traditional boundaries in ways that contravened millennia old systems of obligations, customs and responsibilities, and led to conflict with neighbouring groups. As Fawcett (1898: 152) described in 1898:

Their tribal boundaries were both well-defined and clearly understood both by themselves and the members of their neighbouring tribes. So strictly were all rights and privileges understood, that for one tribe to enter into the district of another in pursuit of game was considered an offence of great magnitude and a good ground for a hostile meeting.

As displacement became more widespread, violent disputes between the Wonnarua and European settlers intensified. Initially when Europeans settled in the region *'the natives were acknowledged to be a harmless, inoffensive race of people, and for the first two or three years they continued on the best terms with the colonists. Subsequently, however, quarrels arose through their ignorance of [English] laws relative to the right of property'* (Breton 1833: 218-219). For the Europeans, land ownership equated to rights (such as restricted access) yet for the Wonnarua, it concerned both rights and obligations. While the new settlers saw the taking of their stock as theft, and therefore punishable, the Indigenous community perceived it very differently (Umwelt 2011). Not surprisingly, relations between the two deteriorated.

Some people in the Hunter Valley, like Reverent Lancelot Threlkeld, believed they were *'in a state of warfare'* with the Indigenous population and, in 1826, landowners petitioned Governor Darling for protection from the armed *'tribes of black natives'* as they feared the *'revenge and depredation of these infuriated and savage people'* (Umwelt 2011). Darling's response to the petition *'encouraged the settlers to use 'vigorous measures' to establish ascendancy over the Aboriginal resistance, resulting in the forming of many vigilante groups'* (Umwelt 2011). European arms soon proved too powerful and that resistance by the valley's original occupants had largely ceased by 1830, less than three decades after Europeans arrived in the area.

The ensuing breakdown of Indigenous communities is largely attributed to the dispossession of their land, and the subsequent loss of traditional lifestyle, but this is not the only cause. The onset of new, introduced diseases, such as measles and small pox, and infections such as sexually transmitted syphilis, decimated communities as they had no natural resistance to these ailments. The smallpox epidemic of 1789 killed many even before Europeans had forayed beyond Sydney and this was followed by a second outbreak in 1829-31 (Brayshaw 1987: 49). A submission from the Reverend William Ross, Minister of the Church of Scotland to a Select Committee of Inquiry, established to investigate Aboriginal affairs in the colony in 1846, noted that *'the number [of Indigenous people] has greatly diminished; within the last seven years the decrease has certainly been one-third of the number'*. The writer explained that the camps of between eighty and ninety people he had seen seven years earlier were now no more than twenty five (Select Committee on the Condition of the Aborigines, 1846).

Deaths resulting from disease or sickness frequently effected those most vulnerable - the young and the elderly, which had profound ramifications on Aboriginal communities long into the future. The death of the elderly not only meant that there were fewer and fewer elders to guide and unite communities, but also that the passing

down of important responsibilities, teachings and knowledge from one generation to the next was irrevocably interrupted. The death of the young resulted in smaller communities since births could no longer replace those lost. The inability to produce future generations was further hampered by the spread of sexually transmitted diseases which left a large number of Indigenous adults infertile and increased the number of miscarriages and still births. Fawcett (1898: 153) lamented that '*half a century of British debauchery, disease, and vice and their accompaniments, have almost wiped [the Wonnarua] out altogether. A few years and their land will know them no more*'.

With the loss of their land and lifestyle, the Wonnarua were forced to rely ever more on European settlers. According to Umwelt (2011) the traditional way of life for the Wonnarua, including the continuation of their ceremonies, had all but gone by the 1870s and they began to increasingly adopt the ways of Europeans. Initially, Aboriginal farm labourers and itinerant workers were sought after but this declined from the middle of the 1870s for a variety of reasons, including the introduction of wire fencing (which reduced the number of required farm hands) and the arrival of more white workers in the region.

Others settled on religious or government run reserves or missions. From the 1860s, reserves became increasingly popular in New South Wales as they were perceived as a means of controlling and attending to the welfare of Indigenous populations. The missions also provided Colonial authorities with the opportunity to '*civilise*' Aboriginal people by teaching them the English way of life, from customs and beliefs to daily activities and language [Nolan 2012, p. 24]. Seldom does such civilisation come at such a high price.

From 1890, many of the local Indigenous population, including *Wonnarua, Awabakal, Worimi and Darkinung* people, resided at the St Clair mission. Founded by Reverend J S White, the sixty acre property was established in Carrowbrook, between Muswellbrook and Singleton (Nolan 2012). There the residents farmed the land whilst maintaining some traditional aspects and rituals of their culture. In 1905, the Baptist run Aborigines Inland Mission took over the site and the continuation of traditional ways was no longer acceptable (Gray 2010). In 1918, the site came under the control of the Aborigines Protection Board and was renamed the Mount Olive Reserve. Under the new managers, adherence to strict rules was expected and any breaches resulted in removal (Umwelt, 2011). The reserve remained operational until 1923 when it closed, forcing its residents to move elsewhere. Many of these twice dispossessed people chose to settle around the township of Singleton and the surrounding region.

5 Archaeological Assessment of the Project Area

The archaeological assessment of the Project Area was undertaken by Ozark Environmental & Heritage Management Pty Ltd. The following section is an edited version of the archaeological assessment summary report written by Ben Churcher (OzArk).

Assessment of the Survey Area² took place with the assistance of Registered Aboriginal Parties and Wonnarua Knowledge Holders from March 2015 and has included a 19 day survey program and a test excavation and auger program that ran from 27 July to 11 August 2015.

The assessment of the Survey Area recorded 25 artefact scatters, 34 isolated finds and 20 extensions to previously recorded sites (all artefact scatters). Within the site extensions are a further nine previously recorded sites that have been subsumed into the larger site areas.

In addition, there are a further 49 sites within the Survey Area that are listed on AHIMS as valid or partially destroyed. Of these 49 sites, 36 (73 per cent) are listed as artefact scatters, 11 (22 per cent) as isolated finds and two as PADs.

Therefore, in total, the archaeological assessment considered 128 sites. All of these sites are stone artefact sites as no other site type was recorded during the survey or remains extant from previous recordings.

The results of the test excavation program were surprisingly sparse. 153 0.5m by 0.5m excavation squares were excavated at six separate localities: a total of 38.25 square metres. From this area of excavation, 192 artefacts were recovered; an average of 1.25 artefacts per excavation square. This density of artefacts is extremely low. In addition, 63 auger probes were excavated at nine separate locations. The aim of the auger program was to:

- Verify soil depth at areas where the survey assessed shallow soil depth;
- Verify archaeological potential in areas where low ground surface visibility prevented a full assessment of archaeological potential; and
- To examine landforms away from watercourses to establish archaeological potential across a range of landforms.

As a result of the survey and test excavation results, the majority of sites (n=122; 95 per cent of all 128 sites) have been assessed as having low scientific significance. In most cases this is because the sites are low density artefact scatters or isolated finds located in landforms with thin A horizon soils where further subsurface archaeological deposits are unlikely. In some cases the artefacts may be more numerous but erosion has affected a large percentage of the site and the visible artefacts are displaced and of limited archaeological value. The remaining six sites have been assessed to have a low-moderate scientific significance. Due to the level of disturbance within the Survey Area, no sites have been assessed as having a high or moderate scientific significance.

For the purposes of the assessment it is assumed that 127 sites (80 artefact scatters, 45 isolated finds and two PADs) will be harmed (totally) by the Project. One site (Wambo 202; #37-5-0343) will be partially harmed by the Project. Those sites within the Disturbance Area and would be harmed by the proposed open cut pit, emplacement areas and other axillary infrastructure should the Project be approved.

A series of management options are advanced in the archaeological values report to manage these impacts. Eight sites are recommended for further subsurface investigation and all sites will be salvaged by a surface collection and recording of all visible surface artefacts.

5.1 Effect of disturbance on the archaeological landscape

The major disturbances within the non-mined portions of the Survey Area that have altered the archaeological landscape are:

- Erosion: outside of the previously mined areas, erosion has had the greatest impact across the Survey Area;
- Subsidence: cracking and remedial works have impacted undermined areas; and

² The Survey Area was the focus of the investigation of the Project Area's scientific values. It includes all areas within the Project Area that are not:

- a) Previously modified by approved mining activities, i.e. open cut areas, emplacements, dams and areas modified by buildings/vent shafts/flares and other infrastructure; and
- b) Areas approved for disturbance on the Wambo mine lease.

Thus the Survey Area is 5.6km² within the 27.5km² (approximate) Project Area.

- Farm and mine infrastructure: large portions of the Survey Area have been modified by the historical and on-going land uses.
- The impact to the archaeological landscape from each of these disturbances will be discussed in more detail below.

The effects of erosion and land clearing are clearly visible in Map 2-4 to Map 2-8 (Chapter 2).

5.2 Archaeological Discussion and Management: Summary

Within the Survey Area the current assessment identified 25 artefact scatter sites and 34 isolated finds. In addition, 20 previously recorded sites have had their site boundaries altered to take into account findings from the survey. Beyond these sites there are a further 49 previously recorded sites within the Survey Area.

5.3 Assessment of Scientific Significance

The current assessment of the Survey Area has recorded 25 artefact scatters, 34 isolated finds and 20 extensions to previously recorded sites (all artefact scatters). Within the site extensions are a further nine previously recorded sites that have been subsumed into the larger site area.

In addition, there are a further 49 sites listed on AHIMS as valid or partially destroyed. Of these 49 sites, 36 (73 per cent) are listed as artefact scatters, 11 (22 %) as isolated finds and two as PADs.

Therefore, in total, this assessment considers 128 sites.

While the assessment of scientific significance to the newly recorded sites is straight-forward, this is not the case with many of the previously recorded sites. For example 13 (or 26.5 per cent) of the previously recorded sites outside of 2015 site designations were recorded by Margit Koettig and Phillip Hughes in the early 1980s. At this time it was not the practice to assign significance values to sites. While the survey attempted to locate all previously recorded sites in order to determine significance this was rarely successful given the length of time that has passed since the site's recording and the fact that the AHIMS coordinates are only approximate and that the original recordings were located by means of topographic maps. Subsequent to the survey, OzArk has done much research to try and rectify the AHIMS location of sites which were particularly inaccurate within the Survey Area. As a result of this research of the original reports and site cards, it had to be accepted that the precise location of many previously recorded sites within the Survey Area will never be known beyond assuming that they were somewhere within a general area. Therefore the significance of many previously recorded sites will be done on the basis of an assessment of the general landforms in which they were located rather than on information from the exact site itself.

In short, as these recordings span 34 years and on-going erosion and deposition have continued through this time, it would be a near impossible task to identify each of these sites in the field and complete a separate scientific significance for each site. Instead the approach here will be to group any previously recorded sites and apply an overall scientific significance to the landform as a whole. This overall assessment of scientific significance would then apply to any previously recorded sites within that area. This generalised approach has been cross-referenced to more recent reports (such as Insite Heritage 2010b: 19) where assessments of significance are provided (albeit for sites now salvaged) to ensure that the levels of significance afforded here generally agree with that of previous researchers.

Other areas within the Project Area have existing disturbance, infrastructure or approved mining operations). This shows large areas of the Survey Area having 'no potential' where it can be clearly demonstrated that the landforms have been modified by mining activity, widespread erosion or cropping to the extent that intact archaeological deposits are highly unlikely. Other large areas have been mapped as 'low potential'. These areas are outside of the modified landforms identified as having 'no potential' but are in landforms where soils tend to be thin or in landforms that are distant from water making sites within them likely to be smaller and less complex (and hence less significant) than sites closer to water. Small areas of the Survey Area are mapped as having low-moderate archaeological potential. These areas tend to include landforms that are not heavily disturbed but are closer to water resources.

The mapping of the Survey Area's archaeological potential will be used to determine the current scientific significance of previously recorded sites as mentioned above.

Although the assessment of significance is obviously a subjective task, the use of the guidelines established in Section 2.7, enables a reasonable standard of objectivity, or at least a criterion-based standard of assessment.

The overall scientific significance of sites within the Survey Area has been lowered due to:

- wide-spread gully erosion and soil loss that affects nearly all portions of the Survey Area;

- major disturbances from approved mining activity including roads, dams, drill pad, bulldozed landforms, creek engineering, bund construction and other infrastructure;
- a relatively dense array of farm and civil related infrastructure such as dams, roads, and other features such as electricity lines;
- the archaeological landscape within the Survey Area being fragmented between these disturbances; and
- the varying degrees of archaeological salvage that has been undertaken within the Survey Area.
- As a result, no sites are assessed to have high or moderate scientific significance.

As all sites within the Survey Area are either low density artefact scatters or isolated and/or are located in landforms with depleted A horizon soils and invasive erosion (to varying degrees), they have been assessed as holding low–moderate scientific significance or less.

The majority of sites (n=122; 95 per cent of all 128 sites) have been assessed as having low scientific significance. In most cases this is because the sites are low density artefact scatters or isolated finds located in landforms with thin A horizon soils where further subsurface archaeological deposits are unlikely. In some cases the artefacts may be more numerous but erosion has affected a large percentage of the site and the visible artefacts are displaced and of limited archaeological value.

The high frequency of low scientific significance is directly related to the extensive and long-running previous disturbances within the Survey Area as was summarised in Section 5.1.

5.3.1 Assessment of Scientific significance

Table 5-1 shows the scientific significance of the newly recorded artefact scatters and isolated finds. Under the column ‘Reasons’ a brief explanation is given of those site features that elevate or lower a particular site’s scientific significance.

Table 5-2 shows the scientific significance of all amended previously recorded sites.

Table 5-1: Scientific significance of newly recorded sites

Site Name	Location (GDA94 Zone 56)	Scientific Significance	Reasons
United OS-1	307834E 6398781N	Low	The site today represents an eroded surface scatter of low density artefacts. The site has undergone impacts from agricultural land use and erosion. Shallow A horizon soil depth present. Soil depth tested during auger program: Auger Location 9. Area retains some archaeological potential although the likelihood of there being intact subsurface deposits is low.
United OS-2	308228E 6398037N	Low	The site today is located either side of an eroding ephemeral gully in an area of densely regenerating woodland. No A horizon soil depth present. Likely artefacts are in a secondary context.
United OS-3	309228E 6397244N	Low	The site represents an eroded surface scatter of low density artefacts. The site has undergone impacts from agricultural land use and erosion. No A horizon soil depth present. Likely artefacts are in a secondary context.
United OS-4	309411E 6397262N	Low	Site represents an eroded surface scatter of low density artefacts. The site has undergone impacts from agricultural land use and sheet wash erosion. No A horizon soil depth present. Likely artefacts are in a secondary context.
United OS-5	309931E 6397262N	Low	The site has undergone impacts from agricultural land use and erosion. No A horizon soil depth present. Likely artefacts are in a secondary context.
United OS-6	310432E 6397137N	Low	The site is within a gully which has been subject to extensive erosion where a large percentage of artefacts are displaced. Thin A horizon soil depth is present. Soil depth tested during auger program: Auger Location 1.
United OS-7	311135E 6396836N	Low	The site displays a number of exposures resultant from mining activities, agricultural activities and erosion. A horizon soil depth is present in places but is known not to contain intact subsurface deposits. Subsurface deposits tested during test excavation program: Area 1 and Area 5 that yielded a very low artefact count.
United OS-8	311357E 6396100N	Low	Previous archaeological salvage has taken place within site boundary (AHIMS site #37-5-0075: Red Bank Creek 59). The site has been subject to in-stream gully erosion. Little A horizon soil depth is present.
United OS-9	311438E 6396092N	Low	The site contains a number of very small exposures and has undergone impacts from erosion and nearby mining related activities. A horizon soil depth is present in places but is very thin.
United OS-10	311646E 6396285N	Low	The site contains a small exposure where all the A horizon soils have been removed as a result of erosional processes. Very low artefact density.
United OS-11	312373E 6396137N	Low	The site is a surface scatter of low density artefacts. The site has undergone a high level of disturbances from agricultural land use and is surrounded by regenerating woodland. Limited A horizon soils are present.

United OS-12	312620E 6396290N	Low	The site has undergone impacts from agricultural land use and erosion. No A horizon soil depth is present and gravels are exposed on the surface. Previous archaeological salvage has taken place within the site's boundaries: AHIMS #37-6-1910 (United Collieries 3 [Singleton]); AHIMS #37-6-1614 (Haul Road 6) and AHIMS #37-6-1921 (United Collieries 21 [Singleton]) have all been salvaged in the past.
United OS-13	312378E 6396843N	Low	The site is located within a cleared easement with modern rubbish within a nearby gully. The site has undergone impacts from infrastructure constructions and agricultural land use. A horizon soil depth is limited.
United OS-14	313027E 6396942N	Low	The site is located within an exposed area containing imported gravels. The site has undergone impacts from the installation of mining related infrastructure. No A horizon soil depth is present. Very low density artefact scatter.
United OS-15	312861E 6395961N	Low	The site is low density surface artefact scatter along an access track with exposed gravels. The site has undergone impacts from mining related activities such as road construction and stockpiling as well as erosion. No A horizon soils are present.
United OS-16	312859E 6396231N	Low	The site is a low density artefact scatter visible in a moderately sized exposure that has been subject to erosion. No A horizon soils are present. Site is located on the south east bank of a spillway and the recorded artefacts are in a secondary context. There has also been previous archaeological salvage in the vicinity (AHIMS #37-6-1613; Haul Road 5).
United OS-17	313004E 6395356N	Low	The site is low density surface artefact scatter along an access track with exposed gravels the site has undergone impacts from erosion. No A horizon soils are present. There has also been previous archaeological salvage in the vicinity (AHIMS #37-6-1020; UNITED site 2).
United OS-18	313204E 6395068N	Low–moderate	The site is a low to moderate density artefact scatter visible within an eroded drainage line. Site has been disturbed by sheet wash erosion and mine related infrastructure with an electricity easement running through the north west of the site. A horizon soils are present in places. This site was tested during the test excavation program (Area 4) and while there was generally a very low subsurface artefact density there were one or two pockets of in situ deposits.
United OS-19	313129E 6394943N	Low	The site has undergone impacts from mining infrastructure and mine related activities with buried pipelines, tracks, dams, bunds and set down areas present. A horizon soils are present in places, largely within the northern portion of the site although this area has undergone previous archaeological salvage (AHIMS #37-6-1010 [UC5/1]).
United OS-20	313344E 6395141N	Low	With only two artefacts recorded, United OS-20 represents a very low artefact density scatter. A horizon soils have been lost from across the area and the A horizon is estimated to be thin.
United OS-21	313641E 6395164N	Low	With only two artefacts recorded, United OS-20 represents a very low artefact density scatter. A horizon soils have been lost from across the area and the A horizon is estimated to be thin. Archaeological salvage has taken place in the vicinity (AHIMS #37-6-1923 [United Collieries 24 (Singleton)]).
United OS-22	313521E 6396083N	Low	The site is located on farm dam wall and all artefacts are in a secondary context.
United OS-23	313585E 6396001N	Low	Very low density artefact scatter located along an access track. The site has undergone impacts from erosion and from the construction and use of the access track. Artefacts are likely to be in a secondary context.
United OS-24	313762E 6395944N	Low	The low density artefact scatter is located along an access track. No A horizon soil are present. Very low density artefact scatter.
United OS-25	313508E 6396284N	Low–moderate	The low density artefact scatter is present adjacent to land than has been cropped in the past. A horizon soils are present within densely regenerating Casuarinas. Site tested during the test excavation program (Area 6) which demonstrated a low density of subsurface artefacts.
United IF-1	306963E, 6398215N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-2	307034E, 6398216N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-3	307283E, 6398374N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-4	308042E, 6398409N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-5	306437E, 6396944N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-6	306724E, 6396397N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-7	309192E, 6396998N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-8	309356E, 6397070N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-9	310119E, 6397274N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-10	311776E, 6396718N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-11	312296E, 6395887N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-12	312436E, 6395857N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-13	312524E, 6396079N	Low	No associated subsurface deposits as A horizon soil depth is limited.

United IF-14	312571E, 6395769N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-15	312184E, 6397195N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-16	312478E, 6397253N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-17	312703E, 6397015N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-18	312603E, 6396745N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-19	312734E, 6396857N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-20	313145E, 6396866N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-21	313267E, 6396982N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-22	312874E, 6395349N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-23	313073E, 6395177N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-24	313365E, 6394924N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-25	313190E, 6395321N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-26	313431E, 6395020N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-27	313418E, 6395092N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-28	313494E, 6395072N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-29	313519E, 6395238N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-30	313283E, 6396158N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-31	313313E, 6396222N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-32	313645E, 6395904N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-33	313699E, 6396061N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-34	313828E, 6396242N	Low	No associated subsurface deposits as A horizon soil depth is limited.

Table 5-2: Significance assessment for all amended previously recorded sites

AHIMS ID	Site Name	Location(GDA94 Zone 56)	Scientific significance	Reasons
#37-5-0025	Agip 2 Malabar	311455E, 6396668N	Low	Agip 2 Malabar consists of more than one hundred artefacts on series of erosion scalds between the parallel watercourses of Redbank Creek and an anabranch. Tested during the test excavation program (Area 2) which revealed almost no subsurface artefacts in adjoining landforms. Therefore all visible artefacts are in secondary contexts.
#37-5-0028	Malabar Agip 3	310305E, 6396790N	Low	Malabar Agip 3 is within an artificial drainage line. Only a single artefact was recorded during the survey and it is likely to be in a secondary context.
#37-5-0096	Red Bank Creek 28	310742E, 6396601N	Low–moderate	Red Bank Creek 28 consists of more than ten artefacts located within an eroding area that has previously been ploughed. The site encompasses previously recorded AHIMS site #37-5-0027 (Malabar). The site was investigated by the auger program (Auger Location 7) which demonstrated that the soils to the north of the site consist primarily of clay and that the A horizon within the site is very thin. The low–moderate significance is more applicable to the western portions of the site rather than the eastern portions.
#37-5-0099	Red Bank Creek 31	310921E, 6396810N	Low	Red Bank Creek 31 was recorded along an artificial bund in an area of high general disturbance. Site encompasses previously recorded AHIMS site #37-5-0577 (UCL 12-2).
#37-5-0100	Red Bank Creek 32	310973E, 6396755N	Low	Red Bank Creek 32 was recorded along an artificial bund in an area of high general disturbance including erosion surrounding an old farm crossing of Redbank Creek. Test Excavation Area 1 Tr1 was located within the site boundaries and recorded a very low artefact density.
#37-5-0110	Red Bank Creek 15	311701E, 6396723N	Low	Red Bank Creek 15 consists of five artefacts recorded along an artificial drainage channel. The low density artefact scatter is diffused and due to the high local disturbance artefacts are in a secondary context.
#37-5-0115	Red Bank Creek 8	312119E, 6396619N	Low	Red Bank Creek 8 consists of more than eighty artefacts recorded within a number of large exposures. The new site boundary of Red Bank

				Creek 8 encompasses AHIMS sites #37-5-0023 (Warkworth Agip 8) and #37-5-0512 (United Collieries 13). The site was investigated during the test excavation program (Area 3) which showed that there were almost no subsurface artefacts within the site. Subsequent research shows that this area has been heavily modified by the building of Dam 2 and associated drainage works.
#37-5-0116	Red Bank Creek 5	311209E, 6396747N	Low– moderate	Red Bank Creek 5 consists of more than 120 artefacts recorded within a number of large exposures. The site was investigated during the test excavation program (Area 2 Tr1, Tr2, Tr6, Tr7, Tr8 and Tr9) which showed that there remain pockets of in situ subsurface deposits although these deposits are isolated by areas of very low artefact density.
#37-5-0343	Wambo 202	308850E, 6397962N	Low	Wambo 202 consists of two artefacts recorded within an eroding gully on a lower-slope landform. Very thin A horizon soils.
#37-5-0349	Wambo 190	309204E, 6397081N	Low	Wambo 190 consists of four artefacts located in an upper-slope landform. The artefacts are visible along an access track that has been previously bulldozed. Very thin A horizon soils.
#37-5-0520	United Collieries 23	312357E, 6396285N	Low	United Collieries 23 consists of more than thirty artefacts visible along an access track to the east of Dam 3. The new site boundaries encompass site #37-5-0518 (United Collieries 2). The site was extensively investigated by the auger program (Auger Location 4) which showed that there is very thin A horizon soils remaining on the sloping landform. Artefacts are likely to be in a secondary context.
#37-5-0523	United 6	311879E, 6396514N	Low	United 6 consists of more than thirty artefacts visible along an access track on previously cultivated land. The site was investigated by the auger program (Auger Location 3) which showed the creek flats on either side of the minor drainage line that bisects United 6 (a north flowing tributary to Redbank Creek) have a heavy clay content and little archaeological potential.
#37-5-0576	UCL 12-1	310477E, 6396730N	Low	UC12-1 consists of more than fifteen artefacts recorded within small exposures in a generally cleared landscape (with some pockets of regenerating trees). Thin A horizon soils.
#37-6-0325	Red Bank Creek 47	312878E, 6396647N	Low	Red Bank Creek 47 consists of more than thirty artefacts visible within areas of exposure to the west of Dam 1 and along the eroding banks of Redbank Creek. The site area has been highly modified in the past and is subject to inundation from water in Dam 1. Site encompasses AHIMS site #37-6-0323 Red Bank Creek 45).
#37-6-0326	Red Bank Creek 48	312627E, 6396551N	Low	Red Bank Creek 48 consists of a single artefact in a landform that was highly modified during the construction of Dam 1.
#37-6-1033	UC2/1	313323E, 6396475N	Low– moderate	UC2/1 consists of more than twenty-five artefacts located to the east of Dam 1. The site has varying archaeological potential and it is possible that there are isolated areas of in situ deposits on the western bank of Redbank Creek. The eastern bank has little potential. The site was investigated by the auger program (Auger Location 5) which revealed leached A horizon soils (indicating potential aggrading events) to 20cm in places. Site also includes #37-6-0131 (Agip 6 Warkworth) and #37-6-0275 (Red Bank Creek 10).
#37-6-1777	146	313461E, 6396646N	Low	Consists of more than fifteen artefacts that are visible along a large exposure within an electricity easement. Thin A horizon soils present.
#37-6-1912	United Collieries 5	312882E, 6396331N	Low	United Collieries 5 consists of more than fifty artefacts recorded along an artificial drainage channel within a highly modified landform. Site encompasses AHIMS sites #37-6-1911 (United Collieries 4 [Singleton]).

#37-6-1913	United Collieries 9	312608E, 6396599N	Low	United Collieries consists of less than ten artefacts recorded within small areas of exposure in an electricity easement. The site area has undergone significant modification and A horizon soils are thin.
#37-6-1914	United Collieries 10	312558E, 6396674N	Low	United Collieries 10 consists of more than forty artefacts recorded within small areas of exposure in an electricity easement. The site area has been heavily modified during the construction of Dam 1.

As well as the sites detailed above, there are 49 previously recorded sites that are outside of the designated site boundaries of sites listed in Table 5-3. Using the assessed archaeological potential of the Survey Area, the current scientific significance of these sites can be determined (Table 5-3). As can be seen in the table, only two sites map within the zone of low–moderate archaeological potential: #37-5-0095; Red Bank Creek 27 (artefact scatter) and #37-5-0514; United Collieries 11 (isolated find). It is noted that sites #37-5-0561 (Wambo PAD T) and #37-6-2075 (Wambo PAD B) are recommended below for further subsurface investigation although in Table 5 the sites are currently assessed as having low scientific significance. However, as these sites were not investigated during the test excavation program as sites displaying higher potential were prioritised, the exact significance of these PADs are not precisely known. Therefore, the designation of low scientific significance in Table 5-3 is provisional until such times as the salvage program is enacted.

Table 5-3: Scientific significance of all previously recorded sites outside of sites designated during this assessment

AHIMS number	Site Name	GDA Easting	GDA Northing	Site Status	Scientific significance
37-5-0024	Malabar	311405	6396590	Valid	Low
37-5-0083	Red Bank Creek 51	312455	6396790	Valid	Low
37-5-0085	Red Bank Creek 35	310905	6396640	Valid	Low
37-5-0095	Red Bank Creek 27	310655	6396540	Valid	Low–moderate
37-5-0097	Red Bank Creek 29	310805	6396590	Valid	Low
37-5-0098	Red Bank Creek 30	310755	6396540	Valid	Low
37-5-0101	Red Bank Creek 33	311105	6396740	Valid	Low
37-5-0103	Red bank Creek 22	312105	6396590	Valid	Low
37-5-0105	Red bank Creek 20	312055	6396690	Valid	Low
37-5-0106	Red Bank Creek 19	312055	6396690	Valid	Low
37-5-0109	Red bank Creek 16	311855	6396740	Valid	Low
37-5-0324	Wambo site 183	310069	6397078	Valid	Low
37-5-0387	Wambo site 272	308026	6398319	Valid	Low
37-5-0429	Wambo site 189	309356	6397068	Valid	Low
37-5-0430	Wambo site 188	309369	6397087	Valid	Low
37-5-0432	Wambo site 187	309433	6397085	Valid	Low
37-5-0433	Wambo site 186	309480	6397105	Valid	Low
37-5-0434	Wambo site 185	309534	6397094	Valid	Low
37-5-0435	Wambo site 184	309561	6397098	Valid	Low
37-5-0496	Haul Road 2	313100	6396125	Valid	Low
37-5-0514	United Collieries 11	311916	6396572	Valid	Low (although located in a zone of low–moderate archaeological potential this site type [isolated find] has low archaeological significance).
37-5-0519	United Collieries 8	312411	6396575	Valid	Low
37-5-0561	Wambo PAD T	307254	6398441	Valid	Low
37-5-0669	Wambo Site 328	308993	6397716	Valid	Low
37-6-0130	Agip 7 Warkworth	312689	6396497	Valid	Low
37-6-0132	Agip 10 Warkworth	313234	6396691	Valid	Low
37-6-0133	Warkworth Agip 8	313605	6396423	Valid	Low
37-6-0134	Agip 9 Warkworth	313604	6396515	Valid	Low
37-6-0272	Red Bank Creek 12	313305	6396690	Partially destroyed	Low
37-6-0324	Redbank Creek N0.46	312755	6396690	Valid	Low
37-6-0327	Redbank Creek No.49	312605	6396690	Valid	Low
37-6-0330	Redbank Creek No.42	313205	6396640	Valid	Low
37-6-0711	WB 13	313825	6396790	Valid	Low

37-6-1007	UC1/6	312955	6396820	Valid	Low
37-6-1008	UC1/7	312705	6396840	Valid	Low
37-6-1657	Haul Road 4	313159	6395950	Valid	Low
37-6-1771	140	313617	6396815	Valid	Low
37-6-1773	142	313680	6396725	Valid	Low
37-6-1774	143	313698	6396703	Valid	Low
37-6-1775	144	313725	6396671	Valid	Low
37-6-1776	145	313731	6396646	Valid	Low
37-6-1778	147	313857	6396641	Valid	Low
37-6-1779	148	313859	6396669	Valid	Low
37-6-1780	149	313864	6396708	Valid	Low
37-6-1781	150	313864	6396708	Valid	Low
37-6-1918	United Collieries 18 (Singleton)	312857	6395366	Valid	Low
37-6-1920	United Collieries 20 (Singleton)	313640	6395277	Valid	Low
37-6-1922	United Collieries 22 (Singleton)	313091	6396045	Valid	Low
37-6-2075	Wambo PAD B	313304	6395391	Valid	Low

5.3.2 Assessment of Scientific Significance: Summary

Six sites are assessed as having low–moderate scientific significance: United OS-18; United OS-25; Red Bank Creek 27; Red Bank Creek 28; Red Bank Creek 5 and UC2/1.

The remaining 122 sites were assessed as having low scientific significance.

Low significance sites mainly consist of low density artefact scatters or isolated finds on landforms with thin A horizon soils and little potential for further subsurface archaeological deposits.

5.3.3 Archaeological Management: Summary

The archaeological management proposed for the Survey Area divides all known Aboriginal sites into two categories.

The placing of a site in a particular category depends on its assessed scientific significance as this determines which research questions a particular site is likely to answer based on the site’s size, nature, condition and location in relation to the Disturbance Area.

Category 1 sites include all sites assessed as having low–moderate scientific significance, as well as Wambo PAD B and Wambo PAD T. This category consists of eight sites.

Category 2 sites consist of the remaining 120 sites with an assessed low scientific significance.

Each of these categories will have a particular archaeological strategy applied to the archaeological salvage of the site.

These management recommendations are framed in the knowledge that on-going erosion continues to impact sites in the Survey Area and that a scientifically rigorous salvage programme is the best hope of gathering information before further artefacts, contexts and information are lost due to erosion.

In the face of the proposed works, it is hoped that the archaeological management strategy proposed here will ensure that management not only saves artefacts from direct impact but, within a research framework, our understanding of the archaeological record within the Survey Area will be enhanced.

Table 5-4: Archaeological recommendations for the management of Category 1 sites³

Site Name	AHIMS number	Archaeological Recommendation	Comment
United OS-18	pending	Research Aim 1: Category 1 archaeological salvage on the eastern bank of the drainage line expanding from the test excavation at Area 4 TR4 Sq2.	During the test excavation program, the greatest concentration of artefacts was recorded in Area 4 Tr4 Sq2. This concentration appeared to be in situ. Category 1 excavations should investigate the area surrounding Area 4 Tr4 more comprehensively. Please note Insite Heritage 2010b: 34 for the location of 2009 excavation transects located 20m due east from Tr4 and avoid these areas.
United OS-25	pending	Category 1 archaeological salvage on the western bank of Redbank Creek in the vicinity of the test excavation Area 6 Tr3.	Some artefact concentrations were recorded during the test excavation program at Area 6 Tr3. While there is only a narrow area between the creek bank and disturbed areas to the west (marked by the farm track and dams), this area should be more comprehensively investigated to determine the extent of the deposits. Same landform as UC2/1 (below) although further south.
Red Bank Creek 27	37-5-0095	Category 1 archaeological salvage on the eastern bank of Redbank Creek.	Located in proximity to Red Bank Creek 28 (see below), investigations in both these areas will provide further information on the nature of deposits on the eastern bank of what was the main arm of Redbank Creek.
Red Bank Creek 28	37-5-0096	Category 1 archaeological salvage on the eastern bank of Redbank Creek.	This site is in proximity to Red Bank Creek 27 (see above) and together both sites will add to our knowledge concerning deposits along what was the main arm of Redbank Creek. Investigations should be biased to the western portions of the site as the auger program (Auger location 7) demonstrated that soils become thinner towards the east.
Red Bank Creek 5	37-5-0116	Category 1 archaeological salvage on the southern bank of Redbank Creek.	Although extensively test during the test excavation program (Area 2), further investigation should take place adjacent to the areas investigated by Koettig and Hughes in 1983. These investigations will allow further comparison with the earlier research to be made.
Wambo PAD T	37-5-0561	Category 1 archaeological salvage on the southern bank of Waterfall Creek.	The site was assessed during the survey and it was determined that the area held little archaeological potential and the area was not included in the test excavation program that was devoted to sites with greater potential. However, to ensure that the current assessment of low potential is correct, Category 1 salvage should take place at the site location.
UC2/1	37-6-1033	Category 1 archaeological salvage on the western bank of Redbank Creek.	Located in the same landform as United OS-25 (see above). As this is a large area it is recommended that Category 1 salvage take place as close as is practical to the three previously recorded sites within this site: 37-6-0131: Agip 6 Warkworth: GDA Zone 56 313238E, 6396508N; 37-6-1033: UC2/1: GDA Zone 56 313255E, 6396590N; and 37-6-0275: Red Bank Creek 10: GDA Zone 56 313355E, 6396440N.
Wambo PAD B	37-6-2075	Category 1 excavation at the site location.	The site was assessed during the survey and it was determined that the area held little archaeological potential and the area was not included in the test excavation program that was devoted to sites with greater potential. However, to ensure that the current assessment of low potential is correct, Category 1 salvage should take place at the site location. Site card agrees the AHIMS location for the PAD is correct and also

³ Category 1 sites are all sites assessed with a greater scientific significance than 'low', as well as two PADS where the nature of the subsurface deposits is not precisely known. The remaining 120 sites (Category 2) have been assessed as having low scientific values and will be managed by a surface collection of artefacts only.

			states "recorded in the (Wambo) EIS by Elizabeth White 2003 and was included in the S87/S90 application by Navin Officer Heritage Consultants P/L April 2005 - Consent Application Permit #2222 was approved and dated 20/06/2005." However, as this site is outside of the Wambo Approval Area it is unlikely the site was ever salvaged.
--	--	--	--

Table 5-5: Scientific significance assessment, Project impact and management category of all Aboriginal sites within the Survey Area Click-here-to-type-caption

Site Type	AHIMS Number	Site name	GDA Zone 56	Scientific significance	Project	Management
Newly recorded sites						
Artefact scatter	pending	United OS-1	307834E, 6398781N	Low	Total	Category 2
Artefact scatter	pending	United OS-2	308228E, 6398037N	Low	Total	Category 2
Artefact scatter	pending	United OS-3	309228E, 6397244N	Low	Total	Category 2
Artefact scatter	pending	United OS-4	309411E, 6397262N	Low	Total	Category 2
Artefact scatter	pending	United OS-5	309931E, 6397262N	Low	Total	Category 2
Artefact scatter	pending	United OS-6	310432E, 6397137N	Low	Total	Category 2
Artefact scatter	pending	United OS-7	311135E, 6396836N	Low	Total	Category 2
Artefact scatter	pending	United OS-8	311357E, 6396100N	Low	Total	Category 2
Artefact scatter	pending	United OS-9	311438E, 6396092N	Low	Total	Category 2
Artefact scatter	pending	United OS-10	311646E, 6396285N	Low	Total	Category 2
Artefact scatter	pending	United OS-11	312373E, 6396137N	Low	Total	Category 2
Artefact scatter	pending	United OS-12	312620E, 6396290N	Low	Total	Category 2
Artefact scatter	pending	United OS-13	312378E, 6396843N	Low	Total	Category 2
Artefact scatter	pending	United OS-14	313027E, 6396942N	Low	Total	Category 2
Artefact scatter	pending	United OS-15	312861E, 6395961N	Low	Total	Category 2
Artefact scatter	pending	United OS-16	312859E, 6396231N	Low	Total	Category 2
Artefact scatter	pending	United OS-17	313004E, 6395356N	Low	Total	Category 2
Artefact scatter	pending	United OS-18	313204E, 6395068N	Low-moderate	Total	Category 1
Artefact scatter	pending	United OS-19	313129E, 6394943N	Low	Total	Category 2
Artefact scatter	pending	United OS-20	313344E, 6395141N	Low	Total	Category 2
Artefact scatter	pending	United OS-21	313641E, 6395164N	Low	Total	Category 2
Artefact scatter	pending	United OS-22	313521E, 6396083N	Low	Total	Category 2
Artefact scatter	pending	United OS-23	313585E, 6396001N	Low	Total	Category 2
Artefact scatter	pending	United OS-24	313762E, 6395944N	Low	Total	Category 2
Artefact scatter	pending	United OS-25	313508E, 6396284N	Low-moderate	Total	Category 1
Isolated find	pending	United IF-1	306963E, 6398215N	Low	Total	Category 2
Isolated find	pending	United IF-2	307034E, 6398216N	Low	Total	Category 2
Isolated find	pending	United IF-3	307283E, 6398374N	Low	Total	Category 2
Isolated find	pending	United IF-4	308042E, 6398409N	Low	Total	Category 2
Isolated find	pending	United IF-5	306437E, 6396944N	Low	Total	Category 2
Isolated find	pending	United IF-6	306724E, 6396397N	Low	Total	Category 2
Isolated find	pending	United IF-7	309192E, 6396998N	Low	Total	Category 2
Isolated find	pending	United IF-8	309356E, 6397070N	Low	Total	Category 2
Isolated find	pending	United IF-9	310119E, 6397274N	Low	Total	Category 2
Isolated find	pending	United IF-10	311776E, 6396718N	Low	Total	Category 2
Isolated find	pending	United IF-11	312296E, 6395887N	Low	Total	Category 2
Isolated find	pending	United IF-12	312436E, 6395857N	Low	Total	Category 2
Isolated find	pending	United IF-13	312524E, 6396079N	Low	Total	Category 2
Isolated find	pending	United IF-14	312571E, 6395769N	Low	Total	Category 2
Isolated find	pending	United IF-15	312184E, 6397195N	Low	Total	Category 2
Isolated find	pending	United IF-16	312478E, 6397253N	Low	Total	Category 2
Isolated find	pending	United IF-17	312703E, 6397015N	Low	Total	Category 2
Isolated find	pending	United IF-18	312603E, 6396745N	Low	Total	Category 2

Isolated find	pending	United IF-19	312734E, 6396857N	Low	Total	Category 2
Isolated find	pending	United IF-20	313145E, 6396866N	Low	Total	Category 2
Isolated find	pending	United IF-21	313267E, 6396982N	Low	Total	Category 2
Isolated find	pending	United IF-22	312874E, 6395349N	Low	Total	Category 2
Isolated find	pending	United IF-23	313073E, 6395177N	Low	Total	Category 2
Isolated find	pending	United IF-24	313365E, 6394924N	Low	Total	Category 2
Isolated find	pending	United IF-25	313190E, 6395321N	Low	Total	Category 2
Isolated find	pending	United IF-26	313431E, 6395020N	Low	Total	Category 2
Isolated find	pending	United IF-27	313418E, 6395092N	Low	Total	Category 2
Isolated find	pending	United IF-28	313494E, 6395072N	Low	Total	Category 2
Isolated find	pending	United IF-29	313519E, 6395238N	Low	Total	Category 2
Isolated find	pending	United IF-30	313283E, 6396158N	Low	Total	Category 2
Isolated find	pending	United IF-31	313313E, 6396222N	Low	Total	Category 2
Isolated find	pending	United IF-32	313645E, 6395904N	Low	Total	Category 2
Isolated find	pending	United IF-33	313699E, 6396061N	Low	Total	Category 2
Isolated find	pending	United IF-34	313828E, 6396242N	Low	Total	Category 2
Amended site boundaries						
Artefact scatter	#37-5-0025	Agip 2 Malabar	311455E, 6396668N	Low	Total	Category 2
Artefact scatter	#37-5-0028	Malabar Agip 3	310305E, 6396790N	Low	Total	Category 2
Artefact scatter	#37-5-0096	Red Bank Creek 28	310742E, 6396601N	Low-moderate	Total	Category 1
Artefact scatter	#37-5-0099	Red Bank Creek 31	310921E, 6396810N	Low	Total	Category 2
Artefact scatter	#37-5-0100	Red Bank Creek 32	310973E, 6396755N	Low	Total	Category 2
Artefact scatter	#37-5-0110	Red Bank Creek 15	311701E, 6396723N	Low	Total	Category 2
Artefact scatter	#37-5-0115	Red Bank Creek 8	312119E, 6396619N	Low	Total	Category 2
Artefact scatter	#37-5-0116	Red Bank Creek 5	311209E, 6396747N	Low-moderate	Total	Category 1
Artefact scatter	#37-5-0343	Wambo 202	308850E, 6397962N	Low	Partial	Category 2
Artefact scatter	#37-5-0349	Wambo 190	309204E, 6397081N	Low	Total	Category 2
Artefact scatter	#37-5-0520	United Collieries 23	312357E, 6396285N	Low	Total	Category 2
Artefact scatter	#37-5-0523	United 6	311879E, 6396514N	Low	Total	Category 2
Artefact scatter	#37-5-0576	UCL 12-1	310477E, 6396730N	Low	Total	Category 2
Artefact scatter	#37-6-0325	Red Bank Creek 47	312878E, 6396647N	Low	Total	Category 2
Artefact scatter	#37-6-0326	Red Bank Creek 48	312627E, 6396551N	Low	Total	Category 2
Artefact scatter	#37-6-1033	UC2/1	313323E, 6396475N	Low-moderate	Total	Category 1
Artefact scatter	#37-6-1777	146	313461E, 6396646N	Low	Total	Category 2
Artefact scatter	#37-6-1912	United Collieries 5	312882E, 6396331N	Low	Total	Category 2
Artefact scatter	#37-6-1913	United Collieries 9	312608E, 6396599N	Low	Total	Category 2
Artefact scatter	#37-6-1914	United Collieries 10	312558E, 6396674N	Low	Total	Category 2
Other AHIMS sites						
Artefact scatter	37-5-0024	Malabar	311405E, 6396590N	Low	Total	Category 2
Artefact scatter	37-5-0083	Red Bank Creek 51	312455E, 6396790N	Low	Total	Category 2
Artefact scatter	37-5-0085	Red Bank Creek 35	310905E, 6396640N	Low	Total	Category 2
Artefact scatter	37-5-0095	Red Bank Creek 27	310655E, 6396540N	Low-moderate	Total	Category 1
Artefact scatter	37-5-0097	Red Bank Creek 29	310805E, 6396590N	Low	Total	Category 2
Artefact scatter	37-5-0098	Red Bank Creek 30	310755E, 6396540N	Low	Total	Category 2
Artefact scatter	37-5-0101	Red Bank Creek 33	311105E, 6396740N	Low	Total	Category 2
Artefact scatter	37-5-0103	Red bank Creek 22	312105E, 6396590N	Low	Total	Category 2
Artefact scatter	37-5-0105	Red bank Creek 20	312055E, 6396690N	Low	Total	Category 2
Artefact scatter	37-5-0106	Red Bank Creek 19	312055E, 6396690N	Low	Total	Category 2
Artefact scatter	37-5-0109	Red bank Creek 16	311855E, 6396740N	Low	Total	Category 2
Isolated find	37-5-0324	Wambo site 183	310069E, 6397078N	Low	Total	Category 2
Isolated find	37-5-0387	Wambo site 272	308026E, 6398319N	Low	Total	Category 2
Artefact scatter	37-5-0429	Wambo site 189	309356E, 6397068N	Low	Total	Category 2

Isolated find	37-5-0430	Wambo site 188	309369E, 6397087N	Low	Total	Category 2
Artefact scatter	37-5-0432	Wambo site 187	309433E, 6397085N	Low	Total	Category 2
Artefact scatter	37-5-0433	Wambo site 186	309480E, 6397105N	Low	Total	Category 2
Artefact scatter	37-5-0434	Wambo site 185	309534E, 6397094N	Low	Total	Category 2
Artefact scatter	37-5-0435	Wambo site 184	309561E, 6397098N	Low	Total	Category 2
Artefact scatter	37-5-0496	Haul Road 2	313100E, 6396125N	Low	Total	Category 2
Isolated find	37-5-0514	United Collieries 11	311916E, 6396572N	Low	Total	Category 2
Artefact scatter	37-5-0519	United Collieries 8	312411E, 6396575N	Low	Total	Category 2
PAD	37-5-0561	Wambo PAD T	307254E, 6398441N	Low	Total	Category 1
Artefact scatter	37-5-0669	Wambo Site 328	308993E, 6397716N	Low	Total	Category 2
Artefact scatter	37-6-0130	Agip 7 Warkworth	312689E, 6396497N	Low	Total	Category 2
Artefact scatter	37-6-0132	Agip 10 Warkworth	313234E, 6396691N	Low	Total	Category 2
Artefact scatter	37-6-0133	Warkworth Agip 8	313605E, 6396423N	Low	Total	Category 2
Artefact scatter	37-6-0134	Agip 9 Warkworth	313604E, 6396515N	Low	Total	Category 2
Artefact scatter	37-6-0272	Red Bank Creek 12	313305E, 6396690N	Low	Total	Category 2
Artefact scatter	37-6-0324	Redbank Creek No.46	312755E, 6396690N	Low	Total	Category 2
Artefact scatter	37-6-0327	Redbank Creek No.49	312605E, 6396690N	Low	Total	Category 2
Artefact scatter	37-6-0330	Redbank Creek No.42	313205E, 6396640N	Low	Total	Category 2
Artefact scatter	37-6-0711	WB 13	313825E, 6396790N	Low	Total	Category 2
Artefact scatter	37-6-1007	UC1/6	312955E, 6396820N	Low	Total	Category 2
Artefact scatter	37-6-1008	UC1/7	312705E, 6396840N	Low	Total	Category 2
Artefact scatter	37-6-1657	Haul Road 4	313159E, 6395950N	Low	Total	Category 2
Isolated find	37-6-1771	140	313617E, 6396815N	Low	Total	Category 2
Artefact scatter	37-6-1773	142	313680E, 6396725N	Low	Total	Category 2
Isolated find	37-6-1774	143	313698E, 6396703N	Low	Total	Category 2
Artefact scatter	37-6-1775	144	313725E, 6396671N	Low	Total	Category 2
Artefact scatter	37-6-1776	145	313731E, 6396646N	Low	Total	Category 2
Isolated find	37-6-1778	147	313857E, 6396641N	Low	Total	Category 2
Isolated find	37-6-1779	148	313859E, 6396669N	Low	Total	Category 2
Isolated find	37-6-1780	149	313864E, 6396708N	Low	Total	Category 2
Isolated find	37-6-1781	150	313864E, 6396708N	Low	Total	Category 2
Artefact scatter	37-6-1918	United Collieries 18	312857E, 6395366N	Low	Total	Category 2
Isolated find	37-6-1920	United Collieries 20	313640E, 6395277N	Low	Total	Category 2
Artefact scatter	37-6-1922	United Collieries 22	313091E, 6396045N	Low	Total	Category 2
PAD	37-6-2075	Wambo PAD B	313304E, 6395391N	Low	Total	Category 1
Artefact reburial location						
Non-archaeological	pending	Artefact reburial	310790E, 6397021N	n/a	Total	Non-archaeological

5.3.4 Assessment of Scientific significance

Table 5-6 shows the scientific significance of the newly recorded artefact scatters and isolated finds. Under the column ‘Reasons’ a brief explanation is given of those site features that elevate or lower a particular site’s scientific significance.

Table 5-7 shows the scientific significance of all amended previously recorded sites.

Table 5-6: Scientific significance of newly recorded sites.

Site Name	Location (GDA94 Zone 56)	Scientific significance	Reasons
United OS-1	307834E 6398781N	Low	The site today represents an eroded surface scatter of low density artefacts. The site has undergone impacts from agricultural land use and erosion. Shallow A horizon soil depth present. Soil depth tested during auger program: Auger Location 9. Area retains some archaeological potential although the likelihood of there being intact subsurface deposits is low.
United OS-2	308228E 6398037N	Low	The site today is located either side of an eroding ephemeral gully in an area of densely regenerating woodland. No A horizon soil depth present. Likely artefacts are in a secondary context.

United OS-3	309228E 6397244N	Low	The site represents an eroded surface scatter of low density artefacts. The site has undergone impacts from agricultural land use and erosion. No A horizon soil depth present. Likely artefacts are in a secondary context.
United OS-4	309411E 6397262N	Low	Site represents an eroded surface scatter of low density artefacts. The site has undergone impacts from agricultural land use and sheet wash erosion. No A horizon soil depth present. Likely artefacts are in a secondary context.
United OS-5	309931E 6397262N	Low	The site has undergone impacts from agricultural land use and erosion. No A horizon soil depth present. Likely artefacts are in a secondary context.
United OS-6	310432E 6397137N	Low	The site is within a gully which has been subject to extensive erosion where a large percentage of artefacts are displaced. Thin A horizon soil depth is present. Soil depth tested during auger program: Auger Location 1.
United OS-7	311135E 6396836N	Low	The site displays a number of exposures resultant from mining activities, agricultural activities and erosion. A horizon soil depth is present in places but is known not to contain intact subsurface deposits. Subsurface deposits tested during test excavation program: Area 1 and Area 5 that yielded a very low artefact count.
United OS-8	311357E 6396100N	Low	Previous archaeological salvage has taken place within site boundary (AHIMS site #37-5-0075: Red Bank Creek 59). The site has been subject to in-stream gully erosion. Little A horizon soil depth is present.
United OS-9	311438E 6396092N	Low	The site contains a number of very small exposures and has undergone impacts from erosion and nearby mining related activities. A horizon soil depth is present in places but is very thin.
United OS-10	311646E 6396285N	Low	The site contains a small exposure where all the A horizon soils have been removed as a result of erosional processes. Very low artefact density.
United OS-11	312373E 6396137N	Low	The site is a surface scatter of low density artefacts. The site has undergone a high level of disturbances from agricultural land use and is surrounded by regenerating woodland. Limited A horizon soils are present.
United OS-12	312620E 6396290N	Low	The site has undergone impacts from agricultural land use and erosion. No A horizon soil depth is present and gravels are exposed on the surface. Previous archaeological salvage has taken place within the site's boundaries: AHIMS #37-6-1910 (United Collieries 3 [Singleton]); AHIMS #37-6-1614 (Haul Road 6) and AHIMS #37-6-1921 (United Collieries 21 [Singleton]) have all been salvaged in the past.
United OS-13	312378E 6396843N	Low	The site is located within a cleared easement with modern rubbish within a nearby gully. The site has undergone impacts from infrastructure constructions and agricultural land use. A horizon soil depth is limited.
United OS-14	313027E 6396942N	Low	The site is located within an exposed area containing imported gravels. The site has undergone impacts from the installation of mining related infrastructure. No A horizon soil depth is present. Very low density artefact scatter.
United OS-15	312861E 6395961N	Low	The site is low density surface artefact scatter along an access track with exposed gravels. The site has undergone impacts from mining related activities such as road construction and stockpiling as well as erosion. No A horizon soils are present.
United OS-16	312859E 6396231N	Low	The site is a low density artefact scatter visible in a moderately sized exposure that has been subject to erosion. No A horizon soils are present. Site is located on the south east bank of a spillway and the recorded artefacts are in a secondary context. There has also been previous archaeological salvage in the vicinity (AHIMS #37-6-1613; Haul Road 5).
United OS-17	313004E 6395356N	Low	The site is low density surface artefact scatter along an access track with exposed gravels the site has undergone impacts from erosion. No A horizon soils are present. There has also been previous archaeological salvage in the vicinity (AHIMS #37-6-1020; UNITED site 2).
United OS-18	313204E 6395068N	Low-moderate	The site is a low to moderate density artefact scatter visible within an eroded drainage line. Site has been disturbed by sheet wash erosion and mine related infrastructure with an electricity easement running through the north west of the site. A horizon soils are present in places. This site was tested during the test excavation program (Area 4) and while there was generally a very low subsurface artefact density there were one or two pockets of in situ deposits.
United OS-19	313129E 6394943N	Low	The site has undergone impacts from mining infrastructure and mine related activities with buried pipelines, tracks, dams, bunds and set down areas present. A horizon soils are present in places, largely within the northern portion of the site although this area has undergone previous archaeological salvage (AHIMS #37-6-1010 [UC5/1]).
United OS-20	313344E 6395141N	Low	With only two artefacts recorded, United OS-20 represents a very low artefact density scatter. A horizon soils have been lost from across the area and the A horizon is estimated to be thin.
United OS-21	313641E 6395164N	Low	With only two artefacts recorded, United OS-20 represents a very low artefact density scatter. A horizon soils have been lost from across the area and the A horizon is estimated to be thin. Archaeological salvage has taken place in the vicinity (AHIMS #37-6-1923 [United Collieries 24 [Singleton]]).
United OS-22	313521E 6396083N	Low	The site is located on farm dam wall and all artefacts are in a secondary context.
United OS-23	313585E 6396001N	Low	Very low density artefact scatter located along an access track The site has undergone impacts from erosion and from the construction and use of the access track. Artefacts are likely to be in a secondary context.

United Wambo Open Cut Coal Project

United OS-24	313762E 6395944N	Low	The low density artefact scatter is located along an access track. No A horizon soil are present. Very low density artefact scatter.
United OS-25	313508E 6396284N	Low– moderate	The low density artefact scatter is present adjacent to land than has been cropped in the past. A horizon soils are present within densely regenerating Casuarinas. Site tested during the test excavation program (Area 6) which demonstrated a low density of subsurface artefacts.
United IF-1	306963E, 6398215N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-2	307034E, 6398216N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-3	307283E, 6398374N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-4	308042E, 6398409N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-5	306437E, 6396944N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-6	306724E, 6396397N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-7	309192E, 6396998N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-8	309356E, 6397070N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-9	310119E, 6397274N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-10	311776E, 6396718N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-11	312296E, 6395887N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-12	312436E, 6395857N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-13	312524E, 6396079N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-14	312571E, 6395769N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-15	312184E, 6397195N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-16	312478E, 6397253N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-17	312703E, 6397015N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-18	312603E, 6396745N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-19	312734E, 6396857N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-20	313145E, 6396866N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-21	313267E, 6396982N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-22	312874E, 6395349N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-23	313073E, 6395177N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-24	313365E, 6394924N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-25	313190E, 6395321N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-26	313431E, 6395020N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-27	313418E, 6395092N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-28	313494E, 6395072N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-29	313519E, 6395238N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-30	313283E, 6396158N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-31	313313E,	Low	No associated subsurface deposits as A horizon soil depth is limited.

	6396222N		
United IF-32	313645E, 6395904N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-33	313699E, 6396061N	Low	No associated subsurface deposits as A horizon soil depth is limited.
United IF-34	313828E, 6396242N	Low	No associated subsurface deposits as A horizon soil depth is limited.

Table 5-7: Significance assessment for all amended previously recorded sites.

AHIMS ID	Location (GDA94 Zone 56)	Site Name	Scientific significance	Reasons
#37-5-0025	311455E, 6396668N	Agip 2 Malabar	Low	Agip 2 Malabar consists of more than one hundred artefacts on series of erosion scalds between the parallel watercourses of Redbank Creek and an anabranch. Tested during the test excavation program (Area 2) which revealed almost no subsurface artefacts in adjoining landforms. Therefore all visible artefacts are in secondary contexts.
#37-5-0028	310305E, 6396790N	Malabar Agip 3	Low	Malabar Agip 3 is within an artificial drainage line. Only a single artefact was recorded during the survey and it is likely to be in a secondary context.
#37-5-0096	310742E, 6396601N	Red Bank Creek 28	Low–moderate	Red Bank Creek 28 consists of more than ten artefacts located within an eroding area that has previously been ploughed. The site encompasses previously recorded AHIMS site #37-5-0027 (Malabar). The site was investigated by the auger program (Auger Location 7) which demonstrated that the soils to the north of the site consist primarily of clay and that the A horizon within the site is very thin. The low–moderate significance is more applicable to the western portions of the site rather than the eastern portions.
#37-5-0099	310921E, 6396810N	Red Bank Creek 31	Low	Red Bank Creek 31 was recorded along an artificial bund in an area of high general disturbance. Site encompasses previously recorded AHIMS site #37-5-0577 (UCL 12-2).
#37-5-0100	310973E, 6396755N	Red Bank Creek 32	Low	Red Bank Creek 32 was recorded along an artificial bund in an area of high general disturbance including erosion surrounding an old farm crossing of Redbank Creek. Test Excavation Area 1 Tr1 was located within the site boundaries and recorded a very low artefact density.
#37-5-0110	311701E, 6396723N	Red Bank Creek 15	Low	Red Bank Creek 15 consists of five artefacts recorded along an artificial drainage channel. The low density artefact scatter is diffused and due to the high local disturbance artefacts are in a secondary context.
#37-5-0115	312119E, 6396619N	Red Bank Creek 8	Low	Red Bank Creek 8 consists of more than eighty artefacts recorded within a number of large exposures. The new site boundary of Red Bank Creek 8 encompasses AHIMS sites #37-5-0023 (Warkworth Agip 8) and #37-5-0512 (United Collieries 13). The site was investigated during the test excavation program (Area 3) which showed that there were almost no subsurface artefacts within the site. Subsequent research shows that this area has been heavily modified by the building of Dam 2 and associated drainage works.
#37-5-0116	311209E, 6396747N	Red Bank Creek 5	Low–moderate	Red Bank Creek 5 consists of more than 120 artefacts recorded within a number of large exposures. The site was investigated during the test excavation program (Area 2 Tr1, Tr2, Tr6, Tr7, Tr8 and Tr9) which showed that there remain pockets of in situ subsurface deposits although these deposits are isolated by areas of very low artefact density.
#37-5-0343	308850E, 6397962N	Wambo 202	Low	Wambo 202 consists of two artefacts recorded within an eroding gully on a lower-slope landform. Very thin A horizon soils.
#37-5-0349	309204E, 6397081N	Wambo 190	Low	Wambo 190 consists of four artefacts located in an upper-slope landform. The artefacts are visible along an access track that has been previously bulldozed. Very thin A horizon soils.
#37-5-0520	312357E, 6396285N	United Collieries 23	Low	United Collieries 23 consists of more than thirty artefacts visible along an access track to the east of Dam 3. The new site boundaries encompass site #37-5-0518 (United Collieries 2). The site was extensively investigated by the auger program (Auger Location 4) which showed that there is very thin A horizon soils remaining on the sloping landform. Artefacts are likely to be in a secondary context.
#37-5-0523	311879E, 6396514N	United 6	Low	United 6 consists of more than thirty artefacts visible along an access track on previously cultivated land. The site was investigated by the auger program (Auger Location 3) which showed the creek flats on either side of the minor drainage line that bisects United 6 (a north flowing tributary to Redbank Creek) have a heavy clay content and little archaeological potential.
#37-5-0576	310477E, 6396730N	UCL 12-1	Low	UC12-1 consists of more than fifteen artefacts recorded within small exposures in a generally cleared landscape (with some pockets of regenerating trees). Thin A horizon soils.
#37-6-0325	312878E, 6396647N	Red Bank Creek 47	Low	Red Bank Creek 47 consists of more than thirty artefacts visible within areas of exposure to the west of Dam 1 and along the eroding banks of Redbank Creek. The site area has been highly modified in the past and is subject to inundation from water in Dam 1. Site encompasses AHIMS site #37-6-0323 Red Bank Creek 45).
#37-6-0326	312627E, 6396551N	Red Bank Creek 48	Low	Red Bank Creek 48 consists of a single artefact in a landform that was highly modified during the construction of Dam 1.

#37-6-1033	313323E, 6396475N	UC2/1	Low–moderate	UC2/1 consists of more than twenty-five artefacts located to the east of Dam 1. The site has varying archaeological potential and it is possible that there are isolated areas of in situ deposits on the western bank of Redbank Creek. The eastern bank has little potential. The site was investigated by the auger program (Auger Location 5) which revealed leached A horizon soils (indicating potential aggrading events) to 20cm in places. Site also includes #37-6-0131 (Agip 6 Warkworth) and #37-6-0275 (Red Bank Creek 10).
#37-6-1777	313461E, 6396646N	146	Low	Consists of more than fifteen artefacts that are visible along a large exposure within an electricity easement. Thin A horizon soils present.
#37-6-1912	312882E, 6396331N	United Collieries 5	Low	United Collieries 5 consists of more than fifty artefacts recorded along an artificial drainage channel within a highly modified landform. Site encompasses AHIMS sites #37-6-1911 (United Collieries 4 [Singleton]).
#37-6-1913	312608E, 6396599N	United Collieries 9	Low	United Collieries consists of less than ten artefacts recorded within small areas of exposure in an electricity easement. The site area has undergone significant modification and A horizon soils are thin.
#37-6-1914	312558E, 6396674N	United Collieries 10	Low	United Collieries 10 consists of more than forty artefacts recorded within small areas of exposure in an electricity easement. The site area has been heavily modified during the construction of Dam 1.

As well as the sites detailed above, there are 49 previously recorded sites that are outside of the designated site boundaries of sites. Using the assessed archaeological potential of the Survey Area, the current scientific significance of these sites can be determined (Table 5-8). As can be seen in the table, only two sites map within the zone of low–moderate archaeological potential: #37-5-0095; Red Bank Creek 27 (artefact scatter) and #37-5-0514; United Collieries 11 (isolated find). It is noted that sites #37-5-0561 (Wambo PAD T) and #37-6-2075 (Wambo PAD B) are recommended below for further subsurface investigation although the sites are currently assessed as having low scientific significance. However, as these sites were not investigated during the test excavation program as sites displaying higher potential were prioritised, the exact significance of these PADs are not precisely known. Therefore, the designation of low scientific significance is provisional until such times as the salvage program is enacted.

Table 5-8: Scientific significance of all previously recorded sites outside of sites designated during this assessment.

AHIMS number	Site Name	GDA Easting	GDA Northing	Site Status	Scientific significance
37-5-0083	Red Bank Creek 51	312455	6396790	Valid	Low
37-5-0085	Red Bank Creek 35	310905	6396640	Valid	Low
37-5-0095	Red Bank Creek 27	310655	6396540	Valid	Low–moderate
37-5-0097	Red Bank Creek 29	310805	6396590	Valid	Low
37-5-0098	Red Bank Creek 30	310755	6396540	Valid	Low
37-5-0101	Red Bank Creek 33	311105	6396740	Valid	Low
37-5-0103	Red bank Creek 22	312105	6396590	Valid	Low
37-5-0105	Red bank Creek 20	312055	6396690	Valid	Low
37-5-0106	Red Bank Creek 19	312055	6396690	Valid	Low
37-5-0109	Red bank Creek 16	311855	6396740	Valid	Low
37-5-0324	Wambo site 183	310069	6397078	Valid	Low
37-5-0387	Wambo site 272	308026	6398319	Valid	Low
37-5-0429	Wambo site 189	309356	6397068	Valid	Low
37-5-0430	Wambo site 188	309369	6397087	Valid	Low
37-5-0432	Wambo site 187	309433	6397085	Valid	Low
37-5-0433	Wambo site 186	309480	6397105	Valid	Low
37-5-0434	Wambo site 185	309534	6397094	Valid	Low
37-5-0435	Wambo site 184	309561	6397098	Valid	Low
37-5-0496	Haul Road 2	313100	6396125	Valid	Low
37-5-0514	United Collieries 11	311916	6396572	Valid	Low (although located in a zone of low–moderate archaeological potential this site type [isolated find] has low archaeological significance).
37-5-0519	United Collieries 8	312411	6396575	Valid	Low
37-5-0561	Wambo PAD T	307254	6398441	Valid	Low
37-5-0669	Wambo Site 328	308993	6397716	Valid	Low
37-6-0130	Agip 7 Warkworth	312689	6396497	Valid	Low
37-6-0132	Agip 10 Warkworth	313234	6396691	Valid	Low

United Wambo Open Cut Coal Project

37-6-0133	Warkworth Agip 8	313605	6396423	Valid	Low
37-6-0134	Agip 9 Warkworth	313604	6396515	Valid	Low
37-6-0272	Red Bank Creek 12	313305	6396690	Partially destroyed	Low
37-6-0324	Redbank Creek N0.46	312755	6396690	Valid	Low
37-6-0327	Redbank Creek No.49	312605	6396690	Valid	Low
37-6-0330	Redbank Creek No.42	313205	6396640	Valid	Low
37-6-0711	WB 13	313825	6396790	Valid	Low
37-6-1007	UC1/6	312955	6396820	Valid	Low
37-6-1008	UC1/7	312705	6396840	Valid	Low
37-6-1657	Haul Road 4	313159	6395950	Valid	Low
37-6-1771	140	313617	6396815	Valid	Low
37-6-1773	142	313680	6396725	Valid	Low
37-6-1774	143	313698	6396703	Valid	Low
37-6-1775	144	313725	6396671	Valid	Low
37-6-1776	145	313731	6396646	Valid	Low
37-6-1778	147	313857	6396641	Valid	Low
37-6-1779	148	313859	6396669	Valid	Low
37-6-1780	149	313864	6396708	Valid	Low
37-6-1781	150	313864	6396708	Valid	Low
37-6-1918	United Collieries 18 (Singleton)	312857	6395366	Valid	Low
37-6-1920	United Collieries 20 (Singleton)	313640	6395277	Valid	Low
37-6-1922	United Collieries 22 (Singleton)	313091	6396045	Valid	Low
37-6-2075	Wambo PAD B	313304	6395391	Valid	Low
37-5-0024	Malabar	311405	6396590	Valid	Low

6 Cultural Heritage Values and Significance Assessment

Assessing the cultural significance of places or objects is central to both understanding and managing heritage places, and is a requirement of the Aboriginal Cultural Heritage Assessment reporting process. This section briefly describes the process and presents the cultural significance assessment for the Aboriginal heritage places in the Project Disturbance Area.

This section of the report specifically recognises that Aboriginal people are the primary determinants of information in regard to the significance of cultural heritage objects, places or values. Indeed, this primacy is explicitly recognised by the Office of Environment and Heritage:

OEH recognises and acknowledges Aboriginal people as the primary determinants of the cultural significance of their heritage. In recognising these rights and interests, all parties concerned with identifying, conserving and managing cultural heritage should acknowledge, accept and act on the principles that Aboriginal people:

- *Are the primary source of information about the value of their heritage and how this is best protected and conserved,*
- *Must have an active role in any Aboriginal cultural heritage planning process,*
- *Must have early input into the assessment of the cultural significance of their heritage and its management so they can continue to fulfil their obligations towards their heritage, and*
- *Must control the way in which cultural knowledge and other information relating specifically to their heritage is used, as this may be an integral aspect of its heritage value.*

6.1 Definition of Cultural Significance

Cultural significance can be associated with or attached to any place, concept or object by any group or groups of people, and is embodied in the place itself (i.e. its fabric, use, associations, and meanings, relationship to other concepts, places or objects). Place means any geographically defined area, and may include features, elements, objects, spaces and views. The place may have tangible (physically identifiable) or intangible (conceptual ideas or spiritual beliefs) values or a combination of both, or a range of values held by different individuals or groups. Places can be large or small, discrete or widespread. The concept of place can embody all of the physically identifiable elements of a landscape (i.e. historical, indigenous or natural heritage values). Place may also exist in the intangible realm, where conceptual or spiritual values are held over places or landscapes with little observable physical evidence or fabric (Australia ICOMOS, 2013).

6.2 Nature of Cultural Significance

The nature of cultural significance is determined by understanding the interrelationship of the following core values, and the constituent factors assessed. These values are:

6.2.1 Aesthetic Value

A concept, place or object can have cultural significance if it is significant in exhibiting particular aesthetic characteristics. Such as:

- Importance to a community for aesthetic characteristics.
- Importance for its creative, design or artistic excellence, innovation or achievement.
- Importance for its contribution to the aesthetic values of the setting demonstrated by a landmark quality or having impact on important vistas or
- Otherwise contributing to the identified aesthetic qualities of the cultural environs or the natural landscape within which it is located.

6.2.2 Historic Value

A concept, place or object can have cultural significance if it is significant in exhibiting particular historic characteristics. Such as:

- It is significant in the evolution or pattern of the history of a locality, region, state, nation or people.
- Importance for the density or diversity of cultural features illustrating the human occupation and evolution of the locality, region, state or nation.
- Importance in relation to an event, phase or activity of historic importance in the region, state or nation

- Importance for close association with an individual or individuals whose life, works or activities have been significant within the history of the region, state or nation
- Importance as an example of technical, creative, design or artistic excellence, innovation or achievement in a particular period.

6.2.3 Scientific Value

A concept, place or object can have cultural significance if it is significant in exhibiting particular scientific characteristics. Such as:

- It has demonstrable potential to yield information that will contribute to an understanding of the natural or cultural history of the region, state or nation
- Importance for information contributing to a wider understanding of natural or cultural history by virtue of its use as a research site, teaching site, type locality, reference or benchmark site.
- Importance for its potential to yield information contributing to a wider understanding of the history of human occupation of the locality, region, state or nation.
- It is significant in demonstrating a high degree of technical innovation or achievement.

6.2.4 Social Value

A concept, place or object can have cultural significance if it is significant in exhibiting particular social characteristics. Such as:

- Association with a community or cultural group for social, cultural, educational or spiritual reasons.
- Importance as a concept, place or object highly valued by a community or cultural group for reasons of social, cultural; religious, spiritual, aesthetic or educational associations.
- Importance in contributing to a community's sense of place and/or identity.

6.2.5 Spiritual Value

The Draft 2013 ICOMOS practice note '*Understanding and Assessing Cultural Significance*' defines 'spiritual value' as the '*intangible values and meanings embodied in or evoked by a place which give it importance in the spiritual identity, or the traditional knowledge, art and practices of a cultural group. Spiritual value may also be reflected in the intensity of aesthetic and emotional responses or community associations, and be expressed through cultural practices and related physical structures*' (ICOMOS, 2013: 1).

The physical qualities of the place may inspire a strong and/or spontaneous emotional or metaphysical response in people, expanding their understanding of their place and purpose in the world, particularly in relation to the spiritual realm. The term spiritual value was recognised as a separate value in the 1999 Burra Charter (ICOMOS, 1999). It is still included in the definition of social value in the Commonwealth and most state jurisdictions. Spiritual values may be interdependent on the social values and physical properties of a place and its surrounding landscape.

A place may exhibit spiritual values if:

- The place contributes to the spiritual identity or belief system of a cultural group
- The place is a repository of knowledge, traditional art or lore related to spiritual practice of a cultural group
- The place is important in maintaining the spiritual health and well-being of a culture or group
- The physical attributes of the place play a role in recalling or awakening an understanding of an individual or group's higher purpose and place in relation to the spiritual realm.
- The spiritual values of the place find expression in cultural practices or human-made structures, or inspire creative works.

6.3 Degree of Cultural Significance

Once the nature of the cultural significance of a place or object is understood, it is essential to understand the extent or degree of that cultural significance. This is typically established by considering:

6.3.1 Rarity

A concept, place or object can have cultural significance if it:

- Demonstrates or possesses rare, uncommon or endangered aspects of the cultural heritage of a locality, region, state or nation.
- Demonstrates or possesses rare, endangered or uncommon structures, landscapes or phenomena.
- Demonstrates or possesses a distinctive way of life, custom, process, land-use, function or design no longer practiced in, or in danger of being lost from, or of exceptional interest to, the region, state or nation.

6.3.2 Representativeness

A concept, place or object can have cultural significance if it:

- Is significant in demonstrating the characteristics of a class of cultural concepts, objects, places or environments in the State.
- Is important in demonstrating the principal characteristics of a range of concepts, objects, landscapes or environments, the attributes of which identify it as being characteristic of its class.
- Is important in demonstrating the principal characteristic of the range of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the locality, region, state or nation.

6.3.3 Condition, Integrity and Authenticity

- Condition refers to the current state of the concept, place or object in relation to each of the values for which that concept, place or object has been assessed. Condition reflects the cumulative effects of management and environmental events.
- Integrity is a measure of the likely long-term viability or sustainability of the values identified, or the ability of the concept, place or object to restore itself or be restored, and the time frame for any restorative process.
- Authenticity refers to the extent to which the fabric of the concept, place or object is in its original state.

6.4 United Cultural Heritage Values

This section of the ACHAR presents the results of cultural values consultation with the Knowledge Holder groups and the RAPs associated with this project.

6.4.1 Limitations

There have been few limitations on the effective completion of this ACHAR. Notably, the resources below have been incorporated into this report:

- The ACHAR from the PCWP was fully disclosed to ACHM, so there has been no restriction on ACHM's ability to report on the cultural values presented by PCWP;
- A disclosed ACHAR was provided by the WNAC to ACHM, so there has been no restriction on ACHM's ability to report on the cultural values presented in that report by WNAC. WNAC also produced a non-disclosed version of their report, which has not been reviewed for this report;
- Information from the WTC workshop is fully disclosed and included in this report; and
- Information from the Community RAP's is fully disclosed and included in this report.

The proponent, OEH and DP&E will have access to all of the non-disclosed cultural values material prepared by WNAC, but as mentioned, that information has not been reviewed by the author, and is not able to be included in this report.

All Knowledge Holder groups have provided general statements of cultural values applicable to the Project Area (alongside the relevant disclosed materials) and have also provided extensive sets of recommendations (either verbally or in their ACHAR) which have been disclosed to ACHM and are included in this ACHAR.

Consolidated recommendations are presented in Section 8.

If there are cultural heritage sites and/or cultural values included in the non-disclosed WNAC report, then those matters are not able to be addressed here, and ACHM has only been able to assess the cultural significance of sites or places based on the information disclosed or publically available information (such as data from the Archaeological Values Assessment Report). As a result, the assessment of extant cultural values (and the significance of those values) presented in this section of the ACHAR is limited to an assessment of the archaeological sites within the Project Area, and any cultural values disclosed by the Knowledge Holder Groups and/or RAPs.

6.5 Cultural Values of the Wonnarua Nation Aboriginal Corporation (WNAC)

A version of the WNAC report was fully disclosed, allowing ACHM to present both cultural values and recommendations from that report. The following section features extracts from the WNAC cultural values report (2015).

The WNAC report concentrates almost exclusively on the 'loss' experienced by those consulted by WNAC. There is very little discussion of any cultural values held by the WNAC over the specific Project Area.

In this section the cumulative loss and harm experienced by Wonnarua people will be explored to give the harm resulting from 211 years (from 1804) of coal mining of their country some context. Within this section there will be an additional consideration of the harm caused to the Wonnarua people as a result of having no power to stop the process of the mining and the ongoing, and seemingly endless (into perpetuity), process of destruction of their traditional country. There has been to date no guarantee made to the Wonnarua people that their country will not eventually be mined away, because it contains a highly valued non-renewable power source, coal. Mining leases hold primacy over all other land uses in Australia. However, the principle of inter-generational equity holds that the present generation should make every effort to ensure the health, diversity and productivity of the environment – which includes cultural heritage – is available for the benefit of future generations. This section includes comments from the participants of a two day workshop in July and a site walk over in August.

The loss of country

Aboriginal people have different concepts about country from the Europeans who invaded Australia. The invaders held a possessive and exploitative notion of land, whereas the Wonnarua held the relational notion that the land is a nurturing mother that provides all that a people need in exchange for a spiritual respect and adherence to laws promoting conservation. It was very important for law holders to conduct ceremonies at the right time and place to ensure the continuation of the health of communities of spirits, waters, plants, animals and people. The country was the source of all that gives meaning to Wonnarua culture including laws, language, stories and customs. The privatization of lands and their access, stole roles from law holders, travel routes from the people, access to health giving foods and medicines and opportunity to practice traditional customs ensuring health.

Although Wonnarua lands have been privatized, the Aboriginal custodians are still obligated to look after the land. Nevertheless, their Aboriginal artefacts are all owned by the Federal Government.

MH: What we have lost. This is the thing we have to tell [the mining companies]. I'm a Sydney black fellow. I never grew up on this country. Our father took us to Sydney to make sure he got employment. This is how I lost my connection to country. Through living in Sydney. And that goes still today. If we didn't work we would have had time- or even now— have time to come up here and reconnect to our mob. It's a vicious cycle because we have to work now.

JWM: The whole Hunter Valley is a traditional land. [Discussion. Lots of discussion on loss and traditional right across country.]

The loss of role and purpose

The processes of colonization overlaid the laws, customs, language and naming systems of the invaders on Aboriginal land. When these new rules were not obeyed, Wonnarua people were killed, incarcerated, their children were taken from them, they were given unhealthy foods and other substances to eat and drink and forced into the company of people of often corrupt morals and language, inhabiting the lowest social strata of the invader's social system. Everything that had given meaning to the Wonnarua law holders and community leaders was under question and their authority was difficult, if not impossible, to maintain.

The loss of power and control

In a sweeping land grab process Wonnarua country was deemed to formally belong to the foreign invaders and their foreign legal processes then held sway. Children were removed from their families, governance power was taken from men and women, and nurturance and control of children was taken. Wonnarua children could no longer be raised according to tradition but did the best they could with or without their families in institutions without enough caring adults. Continuity of culture was disrupted by forcible removal from country, including the sites that make sense of resource knowledge, stories and customary law. Elders were often separated from children, and therefore knowledge holders had only limited opportunities to pass on traditions to succeeding generations. Many mission managers forbade the use of traditional Aboriginal languages.

JWM: Disconnectedness – removal from land. Some left to get work; others were taken away by force. But we don't have to stand here and say who was treated the worse. We are family. We discuss things as a whole. You can't compensate for pain. Who has the most pain here? The mines are forcing us to agree or disagree with us. Every report says we lost our language etc. We know people on this list [of Registered Aboriginal Parties] shouldn't be on the list. Our [WNAC] footprints have been proven.

LP: We discussed our Ancestors; we talked about our Spirituality and we talked about Sarah Madoo; we talked about first contact. Our change to our homeland and this time we have to talk about what really happened to our mob because they don't know anything about the Stolen Generation. So what happened to our mob when they were taken away and relocated? And what does that mean to our mob? That's dispossession and Government control. And we have only come back together again because of Native Title. That's when all these people came back. [Discussion about what "we will say to this government". [The importance of including] social values. Discussion about Stolen Generation: questioned who was involved in the Stolen Generation; Jean Miller and Kathleen Miller. Everyone was affected and the debate on if everyone had been affected by it. Descendants of people – were they affected?]

The loss of economic autonomy

Another effect of becoming reliant on European foodstuffs was a loss of economic autonomy and the necessity for becoming involved with barter and monetary systems in order to access exotic (non-Australian) resources. With dependence on monetary systems came a necessity for employment to obtain the staples of a European way of life. Employment often took Aboriginal men away from their families, leaving women and children to do the best they could on their own.

The loss of cultural autonomy and meaning

Throughout the world a culture is defined by its language and customs. The unique practices of any group of people make it recognizable to outsiders. In other words, people are partly defined by what they do differently from others. Colonial processes have stripped away this cultural definition and autonomy from Wonnarua people, as elsewhere in Australia.

TS: Most of our, what we are guided by, is white man's legislation and policies, that we have to run by, to do with heritage and culture. These cultural values reports are something new in the valley, which is ideal for our people because no archaeologist can give that information. Except for Aboriginal people that are in this area, the Traditional Owners and that. Hopefully one day we'll have an impact to the policies and legislations because it's all scientific based whereas we'd like to turn it around and make it more cultural.

The loss of spiritual connection and purpose

Wonnarua were presented with spiritually hierarchical Christianity as an alternative to their holistic spiritual world view. Christianity places white people at the apex of spiritual evolution, black people somewhere lower and all animals lower still. Aboriginal religions understand all aspects of the physical and spiritual worlds to be interconnected and valued. Mission environments not only imposed Christian values on Aboriginal people, but taught them to be ashamed of their own people and their spiritual values. People who had been brainwashed in this way struggled to continue to respect the traditional law holders and their worldview. Colonisation was not just a takeover of the lands of the Wonnarua but a psychological and psychic takeover of systems of spiritual meaning and understanding.

The loss of cultural context

Access to country for the Wonnarua was denied with the privatization and annexing of prime resource lands in the Hunter and adjacent valleys. Thus regeneration ceremonies could not be practiced and the country began the process of dying to Wonnarua tradition, which acknowledges the spirits of place and their role in the Cosmos. Knowledge holders were unable to pass on the knowledge of resource use, history, traditional ancestral stories which teach about morals, landscape formation, and political alliances. When traditions of place are not communicated in situ their meaning is lost from both the place and succeeding generations of Wonnarua. Country makes sense of culture. Without country people grieve and fall into psychological depression as their lives, as Wonnarua cultural citizens, no longer make sense.



Figure 4: Tracey Skene explains the purpose of back blade design at the site walkover in August 2015.

LP: What has been proved then? Some of our mob have been there [Jerry's Plains]—by working there. But the majority haven't, so that is lost. Loss of stories; loss of land; loss of everything. So it's lost.

AF: I'm a proud Wonnarua man, spiritually and culturally as much as I can be. First up, it's a good viewing platform. What we see out there today is not a natural occurrence ... You can see the power stations running [the power] out to the communities, to the cities. I personally feel that being part of this process, it rips the guts out of myself as a cultural man, as a spiritual man. To be part of this process, to salvage as much as we can under the circumstances. Now I'm on the inside as a Sites Officer and we do the best we can with the people that we have to deal with. As I walked up the hill, our highest totem, the wedge tail [eagle] appeared and gave, as I felt, a welcome, to say that our totem is looking at us, and acknowledging us as we come up here. I get very emotional in these kind of places, because of what I am part of and I just try to do the best I can with what resources we have.

AF: As a Sites Officer it's devastating when we are asked to give value to an artefact or a knapping event, to that local area. The thing is that each site over many acres, hectares, kilometres, whatever, are all connected. Our culture is not a pinpoint here and a pinpoint there. We belong to the country and the whole country not to a site specific [area]; a scarred tree, a knapping event. Its total, what we belong to.

The loss of community standing

Aboriginal societies, including Wonnarua, were meritocracies in that senior knowledge holders earned community standing through their skill and discipline in a particular area of knowledge. The invader culture assigned status to people having money and connections in government or with wealthy landowners. When the invader culture was imposed on Aboriginal people, women and men who had held above average community standing were patronized and often ridiculed by the settlers in order to drive home their low status in the new order.

The harm of racism

Wonnarua people, in common with Aboriginal and Torres Strait Islander people throughout Australia, suffer the effects of racism which describe one group of people, based on skin colour, ethnicity, religion and lifestyle as more worthy, more highly evolved and more intelligent. To compound this situation Aboriginal people now judge one another for their degree of assumed suffering, the colour of their skin, their education and occupation and their family loyalties. Although now illegal in its expression, racism is a widespread low-grade presence in Australia. It limits personal expression, power and opportunity. It is vile and fear inducing and serves to contract the lives of all Indigenous Australians, not least when they direct it at other Indigenous Australians. Shame is toxic and leads people into addictions, disease and early death.

GR: [He told his story about how his mum was in Cootamundra and how it affected him. Told of his pain from losing his father. Eldest of 5 kids; alcohol problem; slowly destroying us; came to Singleton and was given to his grandmother, Beatie then later to Uncle Harry and Auntie Elsie]. Being passed around the family ruined my life and when I had a child with a woman when I was 20—I did the same thing. I left my own son and don't know how to show him any love. I hardly knew him. It was 30 years before I put my arms around him and gave him a hug. He had trouble at the medical centre because they thought he was white.

TS: Another area going back to Jerry's Plain is where grandmother met our grandfather. He was the Aboriginal. Nana was a white European and her husband taught her a lot. She was disowned after getting involved with an Aboriginal man. So she was not allowed to have anything to do with her family after marrying him and being with him. So that was at the property named Plachette Valley, a property out at Jerry's Plains. They obviously moved this way, spread themselves over to the Kurri [Kurri], and Singleton and surrounding areas. So that's our connection, as a Gringai Wonnarua person.

The harm of lost potential

Wonnarua people do not know what their country might have been able to offer them anymore, nor what succeeding generations of Wonnarua might have been able to achieve, learn, produce, access, balance and commune with in their country. Every time a piece of that country is damaged or modified the loss of potential is compounded. Wonnarua country resources may have become tourist ventures, teaching opportunities, bush tucker ventures, traditional medicine industries, healing places and sanctuaries.

SM: These creek areas, the landscape, the animals, the birds, they're all a part of our culture. What we can see when we look into it, we look at our past. We also see the present and what's going to be there in the future. So if you take that away from us, then you take away everything from our connection to this country. Although it's a physical thing that we're looking at, our sites are all over here and they're not being protected. So ... the resource that's there is disappearing with the landscape. When you take that landscape away, you take the resource. Even though the country needs to make a sacrifice, which it has done for the last 30 years of mining. In that case I think we've contributed quite a lot to the Australian resources, as far as making money for this country. We don't actually get a part of that. But I think the Government, and the mining company, which is an international company, should hear and be a bit fair and think about us as well.

The harm of coal mining in Wonnarua country

Under Australian law, Wonnarua people have no right to stop the processes of mining. Mining takes legal primacy over every other land use in Australia apart from government sanctioned Defence purposes. Coal mining is increasingly being seen throughout the world as a dirty fuel and many countries are embracing the use of renewable power sources such as solar and wind. Many of the power companies in the Hunter are owned by non-Australian companies, which compounds the injury to concerned Aboriginal people. The resources of their country are being sold off overseas to benefit other, non-

Australian, communities. Wonnarua people have no certainty about the future of their country, in fact it seems likely that their lands will continue to be mined for coal until there is none left. If current trends continue they are likely to become the custodians of a moonscape. This position is unimaginably distressing and psychologically harming for a people who have already suffered invasion, the stripping of human dignity, and separation from their children so that their children were raised without proper care and love (which extended into future generational problems with parenting skills and emotional scarring). Aboriginal people throughout Australia have lost control and power in all aspects of their lives. The Wonnarua are in the impossible situation of also losing the landscape that defines them as Wonnarua, through the processes of mining.



Figure 5: WNAC members at United Collieries Mine overlooking the proposed mine extension site, August 2015.

VP: The [privatization] started in 1826. That's when total possession of the Hunter was lost. We lost contact and control from 1826. But we have just seen that in the last 20 years when we have been allowed to come back and know what we have lost. And it's this process that has allowed us to come back. If we have been locked out then so has everyone else. Are we going to say to the Government that we don't have any connection, our connections are lost, or are we going to say, yes we do have connection prior to the colonisation of our lands? We have only been allowed access because of this [mining] process; because we didn't have access for the past 20 years. So people, who are saying they have connection, are lying because they didn't have access. I would like to see their report if they say they have connections, better connections than we do, because no one had access.

JWM: Can I say something—this is going to happen. But do we have to be so compliant – without giving over? Do we have to give over the destruction of our country so easily? I'm sick of being part of it. I know some groups are showing care for country and if we can't better that well I think we are a lost cause.

MH: ... but if we didn't get the dollars someone else would. And at least we do something with dollars.

RhP: [Discussion about being 'in the pocket' of the mining company because there is no choice. Being alienated from the land.]

JWM: You've changed the topography of the original lands. That's what [mining processes] do. You make no attempt to deal with the voids [holes left in the ground after open cut quarries have been filled in and revegetated]. It doesn't stop it from happening.

TS: [Rehabilitation of open cut mines] is a band-aid.

Matt: Ultimately there will be environmental disturbance. The final void will be there for good.

PM: Coming back to country, its my first time here [at this site]. I'm not real happy with the whole situation, but I do understand it's the 21st century and we have to get involved with the 21st century, but me myself personally you know I do have an affinity with this place. Coming back here it elates me and excites me at the same time and I'm not happy and I'm not sad because it is the 21st century and we have to go forward. Beyond that, well what can I say?

AB: My connection to country hasn't been that I was born here. My father was actually born in Campbell St, Singleton and father's description of the country was always that the land was undulating. When I get up here and I think, what beautiful country. And then I look at the parts where they've mined and it makes me feel really sad to see what has happened to the landscape. However, because I haven't been brought up on Wonnarua land I totally feel a connection to this, I suppose more than my mother's land. My mother comes from over that way, Kamilaroi. However I identify with my

father's side of the family a weeny bit more, because of historical connections. This is the first time I've been able to see a mining site. I find it is a bit of a shock to see what's happened to the landscape.

Auntie PS: I am sitting here looking at the destruction of our country and it doesn't make me happy one little bit. But as I've been told many a time it is Progress and I hate that word. Over this other side there is untouched Wonnarua country. And I'd like to see it not be touched. But I know it will be. So that's all I would like to say.

MH: I've got something to say then. I know that we're not able to stop the mining but the mining companies around this area know that we are Wonnarua people and that they treat us like junk. They don't give us value for what they're doing to our country and I believe that they should be. Because what they are doing is appalling. And if my Dad was alive he would die, lookin' at this country.

Auntie PS: I'm thinking of my children, my grandchildren and my great-grandchildren. To me, the [mining companies are] doing wrong by the land. They're doing wrong by my children, my descendants. So I think they should stop. I think, you know, we've done enough for Australia. As far as I'm concerned they've destroyed enough of our country.

SEJ: Our participation in this process, does not mean that we support this process, nor do we support the mines. That's it from me.

MH: The thing is that we don't have the say. If we had the say, we would say no more [mining]. But we don't have the say, but we get treated like Goonah anyway.

6.6 Cultural Values of the Plains Clan of the Wonnarua People (PCWP)

The cultural values report for the PCWP was disclosed to ACHM. The PCWP report was the most exhaustive received by the project, however the majority of the content is a discussion of the archaeology and geomorphological history of the Project Area. It is noted that these are important matters which directly inform the scientific values of the Project Area.

The PCWP provided the following summary and recommendations which were to be incorporated in the ACHAR.

The Heads of Family of the PCWP collectively support the following overview statement in relation to the cultural significance of the Project Area to them :

We need to look at the landscape from a position of duty, responsibility, and focus on the achievement of inter-generational equity. We do not own the land, in terms of European concepts of ownership. Our ownership is in the context of the use of the land and its various animals and plants to sustain our bodies and we gave/give homage to them by creating ceremonial dances for them. The importance of this process should not be underestimated, for it is how our people worked with the environment, the landscape, our neighbours and how we all from different Aboriginal language groups, worked as one with Mother Nature. We were practising land management thousands of years before European invaded our country.

The study area is in an area with close proximity to places that have been used by our people since the time of creation. The location of ceremonial sites in the general area as well as pathways between them, known today as song lines, indicates that the cultural landscape of the study area and its environs holds significant values to the PCWP. The path was placed there by our creator Baiami, which in the beginning would have been sheltered from prying eyes and onlookers who were not supposed to know or see what was going on, unless invited. This pathway contains site for initiations and religious practises (Dream Time).

These same lands that may have interaction with this mine are places that represent what our people are about. The landscape (and its environs: my addition) has present ceremonial places (bora grounds) scarred trees, fishing holes, teaching and birthplaces and places to camp and prosper. In today's terms this is our home and our community. Even today you can talk to any member of our claim group and all will have some type of association with this area.

Having Glencore work with our people to understand its importance is a great step forward but at this stage it is a very small one as almost all reports that have been undertaken in the Hunter Valley and elsewhere, in the past regarding Aboriginal Cultural Heritage Values are centred solely on the identification of stone objects within a given location. The normal stakeholder incentive for involvement in this process is for paid fieldwork participation and often their expertise is in stone materials and identification only.

Consideration in the past, by those in the archaeological industry is that Aboriginal people had more to say about the landscape than just stones and bones. This has never been fully canvassed which has been a fundamental flaw in almost all previous reports. There has not been an inclusion of the values that Aboriginal people place on the fauna and flora within a given study area. This is a major issue, not only for Aboriginal people but for the wider community. The history of this country is for all to protect. As the human race we learn from or past and our history to better understand the future.

The Hunter Valley has been heavily impacted on for decades from both coal mining and the agricultural industries. The Plains Clans of the Wonnarua People's {PCWP's} country only has approximately 7.5% of our lands left untouched. Our own traditional lores and customs need to be able to protect this remaining pristine country for our people to live in

harmony and for all future generations to learn from. We need to continue teaching our people and all future generations about who we are and where we are from. Most surveys focus tend on the artefacts that are found on the day and invariably no real effort is taken to understand why they are there, what is happening or where the artefacts are located. Most are recorded as isolated finds when in fact it is a series of sites that make up a complex camping ground being a recognised Aboriginal site. We were taught from these lands as we grew up. It is a place where our families lived, hunted and learnt to interpret the lands. To a non-Aboriginal person in this area is your house, school, hospital, church, shopping centre, doctors, police station, your whole community or society. That is why most reports do not reflect this; it is very complex for a non-Aboriginal to understand and interpret the lands and put into words.

The land around the project is extremely important to our people. Today, the lands, as in most other areas, are one of many pages in a book and allow us look back in time. It gives our people a better understanding of the stories we were told, when we were young, what they were about and about why. The land still has the footprints of our people from the beginning of time and allows our people to have direct contact with our lands and our elders.

As we looked around the landscape, and participated in surveys or test excavations we found many artefacts. Each time we encountered these objects we felt the presence of our people and the excitement that we were now standing in one of our people's houses. It is a firsthand experience and shows where our people lived, hunted, fought to defend their lands, thrived and were happy and cried. This part of the Hunter Valley makes us feel like we are coming home. The reality is though that this is a place that will not be here in the future. Just as what has happened to the other homes of our people it will be lost. To try and put in words exactly what this place is worth is beyond comprehension.

We believe that if Glencore is willing and able to commit to working with our people on these lands that the mine is to operate on, the land will continue to reveal more stories and information. But the work needs to continue as the timeframes sought by approval for the project in no way allows our lands to be fully explained and understood (Heads of Family of the PCWP, September 2015).'

6.7 Cultural Values of the Wonnarua Traditional Custodians (WTC)

The WTC did not produce a final report for the ACHAR. As such a workshop was held with them in February 2016 to extract any cultural values information which was considered relevant by the WTC at the meeting. Little cultural values data was forthcoming, other than generally agreed positions that there was an ancestral attachment to the wider Hunter Valley and that the united Project Area had been subjected to extensive previous modification and disturbance through mining which had diminished any residual cultural values considerably.

WTC Cultural Values

WTC members felt that the Project Area is important in the context of it being another part of Wonnarua country which would be further lost to mining.

WTC members felt that the presence of artefacts (archaeological sites) across the Project Area showed that their ancestors had been present in that landscape in the past, which was significant to the WTC members, even if the scientific values of those archaeological sites was considered to be low.

WTC members felt that whilst there had been a lot of disturbance across the United and Wambo sites over the years, the work at the sites had provided the current generation with an opportunity to meet and discuss Cultural heritage and to work / walk on country.

One WTC member felt that the all Wonnarua country was special to him, but that he got little feeling from the Project Area because it was so highly disturbed. There was a general consensus that the Project Area was 'already bugged'.

6.8 Cultural Values of the Community RAP's

Cultural Values information was collected during Community RAP a cultural values workshop and site visit held July 2015 and November 2014 respectively. During these activities, ACHM discussed the importance of including any 'cultural values' in the ACHAR in order to both demonstrate connection to the places concerned but also to preserve any cultural knowledge which might exist regarding the Project Area. The majority of the outcomes from the cultural values workshops were more management oriented than an exposition of any cultural values.

Over the course of the cultural values workshop and site visit very little traditional or cultural knowledge was forthcoming, despite considerable efforts being applied to elicit any such knowledge or values. The majority of participants felt that this knowledge had generally been lost largely through historical circumstance (i.e. dispossession and forced resettlement) and through the passage of time (i.e. loss of elders and distance of contemporary people to past events).

In general, the participants in the workshop and site visit expressed a strong contemporary '*connection to country*' and were generally opposed to mining and the environmental damage which this may entail, but did not demonstrate any traditional lore, ritualised usage or customary connection to the Project Area.

Community RAPs themes

The Community RAP's expressed a sense of loss due if Redbank Creek was to be permanently removed from the landscape by the Project.

The Community RAP's expressed some concern that this area was in relative proximity to the Warkworth bora ground, although many had not visited that place.

The Community RAP's believed that the last 'traditional' Wonnarua person lived in and around Wollombi Brook in the very early 1900's.

The Community RAP's generally considered the Glencore fieldwork roster system to place them at an unfair disadvantage in comparison to other members of the Knowledge Holder Groups.

The Community RAP's were concerned about employment opportunities within the development phase of the Project or with any rehabilitation opportunities at a later date.

The Community RAP's felt that the Glencore Reconciliation Plan had not delivered any tangible benefit(s) to the community to date.

6.8.1 Dominant Themes

There can be little doubt that the region surrounding the United Project Area is an area that holds high cultural value(s) for Wonnarua people. The wider landscape surrounding the Project Area is also one deeply imbued with meaning to Wonnarua people.

Many of the values expressed by those consulted throughout this project related to the wider region rather than the Project Area specifically. Senses of loss and longing, a variety of expressions of 'connectedness' and 'belonging' to landscapes, waterways, vegetation and animal communities, connection to other known significant places within the region (i.e. Warkworth bora ground or Wollombi Brook) were expressed by those consulted. Alongside the loss and longing, there is also an element of celebration in that those who are speaking for country today have survived for nearly 200 years since first settlement, and have adapted to and overcome much adversity.

Many of the RAPs present at the workshop and site visit were deeply anti-mining, which is not an uncommon sentiment among many Aboriginal communities Australia-wide. Almost all of the RAPs expressed strong connections to the archaeological sites which occur throughout the Project Area (and the wider region in general) even though some were highly critical of archaeologists and archaeological practices through time. Again, it is not uncommon for archaeologists to be criticised for their role in Aboriginal cultural heritage management. Often, archaeologists are seen as the facilitators of cultural destruction by Aboriginal people, and have been criticized for many years for having too much 'power' in the assessment of Aboriginal cultural heritage (*c.f.* Fourmille, 1989). Extensive consultation with Aboriginal communities about their '*cultural values*' is a way of attempting to balance this practice and perception, as well as restricting the archaeological assessment to questions of scientific and not cultural values.

Any destruction of landscapes, including the physical, spiritual, and natural values imbued in it are seldom condoned by Aboriginal people. One theme often repeated in Aboriginal communities is the concern that contemporary Aboriginal communities have for the opinion of future generations and the overwhelming fear that people in the future will think the people of today stood by and watched their 'country' being 'destroyed' without defending it (i.e. sense of guilt).

6.8.2 Summary Opinion

Some of the material presented by the participants evokes the trauma of early European settlement and the lasting effects of frontier violence, dispossession and cultural survival through time. These effects are discussed within the context of contemporary Aboriginal society, and the attempts by Aboriginal communities today to preserve remnants of cultural landscapes, places, lore, culture and belonging. This is in no way denying the bona fides of the individuals involved or their life experiences, but is merely a comment on the events of the shared history of the Hunter Valley which has seen much of that past destroyed.

The submissions made during the RAP workshops and collated in the separate ACHAR submissions clearly communicate a deep contemporary attachment to place, although in common with most of the more urbanised regions of Australia, the understanding of 'place' and the cultural lore and traditions associated with it exist in a somewhat fragmentary state.

From the reports received there is discussion of connection to apical ancestors who originate from within Wonnarua country. Members of the different knowledge holder groups claim connection to some (or all) of these apical ancestors (e.g. Sarah Madoo). In the disclosed material however, there is little evidence of any continuing traditional practices or observances of ritual or ceremony within the Project Area, which can be directly attributed to the post-European settlement disruption and dislocation of traditional Aboriginal culture throughout the Hunter Valley. Knowledge of some of these practices still exists.

There was some discussion of creation or ancestral beings (i.e. Biamie) in one of the reports and discussion of ritual practices or ritualised places, named landscape features or places within or in proximity to the Project Area where ritual or lore was physically practiced. There is also a Bora ground thought to exist in the area surrounding the Project Area, but not within its boundaries. Much of the material submitted in the majority of the disclosed reports is descriptive and relates to generalised Aboriginal lifeway's at the time of first settlement, and the historical impact of white settlement on Aboriginal people, and is common to many Aboriginal groups throughout Australia. The evidence presented in most of the disclosed reports is largely (but not entirely) anecdotal material regarding events purported to be (a) historical events and (b) within or near the Project Area.

The disclosed material seeks to demonstrate cohesive group ownership and control of the Project Area by the Wonnarua people, albeit through the auspices of different knowledge holder groups. This exertion of group ownership from all RAPs extends to all aspects of the natural and cultural environment, as well as to the spiritual and mythical realms. However, the level of direct knowledge of traditional ancestral lifeway's (i.e. creation myths, ongoing ceremonial activities, ritualised lore, custom and practices and language) existing prior to white settlement is generally limited, and detailed information about these matters only appears in one of the three disclosed reports.

6.9 Consolidated Cultural Values

To the extent possible, given the information provided by the RAP's, ACHM have constructed the following table of cultural values. These tables also include all information gathered by ACHM through the workshop(s) and site visit with the Community RAPs and a workshop with WTC.

The following section presents a table of consolidated cultural values for the proposed Project Area.

Value / Theme	From Community RAP Workshops	From WNAC Cultural Values Report	From WTC Cultural Values Workshop	From PCWP Cultural Values Report
Ancestral Connections to Places	Expressed Verbally	Strongly Expressed	Expressed Verbally	Strongly Expressed
Contemporary Connection to Country	Strongly Expressed Verbally	Strongly expressed, particularly being disconnected by circumstances.	Expressed Verbally	Strongly Expressed
'Cultural Values' over the Proposed Project Area	None Expressed	Strongly Expressed in disclosed ACHAR Sections	None Expressed	Strongly Expressed
Connection to Archaeological sites	Strongly Expressed Verbally	Expressed	Expressed Verbally	Strongly Expressed
Song lines	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area
Traditional Knowledge	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area
'Special' or Named Places	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area
'Dreaming Tracks'	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area
Creation Myths	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area
Mythological Associations	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area
Lore Grounds	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area
Resource Procurement / Extraction and Use - (i.e. Stone Quarry)	None identified in the Project Area	Generic comments, but none identified in the Project Area.	None identified in the Project Area	Generic comments, but none identified in the Project Area.
Resource Procurement / Extraction and Use - (i.e. Flora and Fauna)	None identified in the Project Area	Generic comments, but none identified in the Project Area.	None identified in the Project Area	Generic comments, but none identified in the Project Area.
Massacre Sites	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area
Contact History	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area
Mission Period	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area	None identified in the Project Area

Table 6-1: Consolidated Cultural Values

6.10 Consolidated Statement of Significance

The assessment of cultural significance presented in this section relates primarily to the *Project Area*, but also includes an assessment of the cultural significance of the wider region.

It is noted that the numerous Aboriginal stakeholders who participated in this cultural values assessment process hold values which relate to the wider Hunter Valley region generally, and less directly to the Project Area specifically. There was very little information presented in the disclosed material or cultural values workshops which relate specifically to the Project Area.

A common theme in many Aboriginal cultural heritage assessments is the proprietary interest members of the relevant Aboriginal communities hold in regard to the wider cultural landscape including archaeological sites or places within any given area. The Project is no exception in this regard. Within the context of the current assessment, there are strong on-going connections to places created and used by ancestors alongside demonstrably strong interests in the manner in which those places are managed or harmed as a result of this Project. These sentiments are not unique, and must certainly be considered in the overall assessment of the significance of the places in question. The connection to these places is noted as often being relatively unspecific and generally do not appear to relate to any surviving traditional knowledge or customary cultural practices, apart from one of the Knowledge Holder groups who express a strong connection to on-going cultural knowledge and customary lore in this location.

The cultural values expressed by the participants in this assessment have been consistent in voicing an over-arching concern for the wider landscape and criticism of the negative impact of mining on that landscape. Consistent in the material disclosed is a sense of 'loss' or 'outrage' and grief at the treatment of Aboriginal people since First Settlement (dispossession and genocide are mentioned repeatedly) through to more contemporary experiences (i.e. the Stolen Generation).

There is also a consistent theme in the submissions of the 'powerlessness' Aboriginal people often feel when confronted by situations where they feel disempowered or unable to exercise influence on decision makers. There is a sense of loss and lament for what once was, but with a very strong expression of 'corporate' ownership of the wider region by the Wonnarua people (regardless of the variety of ways in which those groups represent their own interests). There is also an element of celebrating the survival of those who are now speaking for country. While the entire estate of the Wonnarua people is significant to those concerned, there is little direct evidence (anecdotal or otherwise) of any particular or specific places or values of significance within the Project Area.

For many of the informants, the contemporary attachment to place appears based on the linkage to archaeological places which were created by 'the ancestors' and thereby constituting a connecting thread to a cultural world from another time.

This general lack of disclosed direct or specific cultural knowledge in no way diminishes the strength of connection to the places within the Project Area. However, the attachment to place is one which is predominantly of contemporary association rather than traditional knowledge, custom, lore or practice.

It is noted that the surrounding area is held to be of higher significance to many members of the Wonnarua community, however the sites and/or places within the Project Area were considered to be of lower significance.

Significantly, many of the submissions received have highlighted the benefits of this ACHAR process to the RAPs. Participants describe the process as having empowered the groups concerned by having provided the opportunity for the Knowledge Holder groups to write their own cultural values assessments, and discuss how this process has benefited the group(s) as a whole.

6.11 Conclusions

This ACHAR has ascertained that there are only very limited deeper *cultural values* associated with the Project Area (directly and specifically) held by a limited number of participants in the ACHAR process. The landscape within the Project Area is highly disturbed and fragmented, resulting in much of the archaeological record already having been disturbed. Much of the natural landscape no longer exists, as the history of agriculture and coal mining has irreversibly altered the landscape. It is the opinion of the author that the remnant cultural landscape within the Project Area has undergone considerable modification since European settlement and is therefore of lower cultural significance than the surrounding region. This is also consistent with the archaeological assessment, which has determined that the overwhelming majority of archaeological sites of low scientific significance.

7 Avoidance of harm

7.1 Project Rationale

The OEH (2011) guidelines state that an ACHA report must include *'Justification for any likely harm, including a discussion of any alternatives considered for the proposal. This must demonstrate how all feasible options to avoid or minimise harm were considered'*.

the following:

Any Aboriginal cultural heritage impacts and issues of the Project that were identified through engagement with stakeholders, including the RAPs during the assessment process and have been incorporated in the Project's final designs.

The United presented information on the Project to the RAPs during all stages of the ACHA consultation process, and undertaken an ongoing review of designs.

In developing the footprint and the design of the disturbance of the proposed Project, the United has considered mining options, layouts, overburden emplacements and infrastructure arrangements to optimise the Project's final design consideration the constraints and the impacts.

7.2 Opportunities to avoid impact

The Project has maximised resource recovery in the JV held mining tenements and with infrastructure (roads and powerlines), water courses (Wollombi Brook) and adjacent mining tenements not owned by the JV, the Project has had very little opportunity to design the mine so as to avoid Redbank Creek, which is the location of most of the archaeological materials. Consequently, there are few opportunities to avoid impacts within the current Project design.

A view held by the Community is that underground mining has less impact than open cut mining (which involves complete disturbance). United has operated underground mining at the site since the early 1990's. However, the underground mine suspended operations in 2010, and has since been sealed. There are currently no opportunities for safe, economic recovery of the coal by underground methods in the United Mining Lease area.

While Open Cut mining leads to the complete disturbance of the surface and landform, it is noted that the Project Area is already heavily disturbed by past activity. This represents an opportunity for over 20 years of significant coal recovery from this disturbed landscape, as opposed to development of similar capacity at a new, undisturbed location.

7.3 Sustainable Development Principles

This ACHAR has considered the impact of the proposed Project on the known Aboriginal objects of the Project Disturbance Area and places external to it, and the range of cultural significance values associated with the Project Area.

Impact assessment has included consideration of proposed activity and direct impacts, indirect impacts and cumulative impacts to archaeological and /or cultural places and ecologically sustainable development (ESD).

OEH (2011) requires that proposed development activities be discussed in the context of ESD, in particular the principles of precautionary approach and intergenerational equity.

As stated by OEH (2011):

1. The precautionary principle states that where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation
2. The principle of inter-generational equity holds that the present generation should make every effort to ensure the health, diversity and productivity of the environment – which includes cultural heritage – is available for the benefit of future generations.

The Project's RAPs have been involved in a formal and structured program of consultation, participation and workshops.

The RAPs undertook Inception Briefings, Walks on Country and Induction prior to any archaeological or cultural survey, focusing on providing a clear understanding of the Project and its description, the Project Area, and the area proposed to be disturbed for the Project. The briefings described the types of activities proposed and their potential impacts, being the extension of the mining area, and the area required for the construction of associated infrastructure.

The following opportunities for consultation and site access were provided by the Project:

- Cultural site visits (which were well attended).
- Archaeological survey results and the sub-surface testing results were sent by letter to all RAPs.
- Field trips were organised and attended by Elders during the assessment phase of the ACHAR, and this included some oral recording and filming.
- Feedback sessions were provided to all RAPs to understand the direct impacts, and they were given formal opportunities to comment on, and provide feedback on indirect and cumulative harm.

The United consultation process allowed the knowledge holders to write their own reports, and this process required them as knowledge holders to consider, both a project approval and a no-approval scenario, and provide clarity in recommending intergenerational and conservation programs commensurate with the harm caused by the Project.

The Project's proposed management measures including conservation, care and control and intergenerational equity were derived from the input and suggestions of the RAPs.

8 Recommendations

8.1 Introduction

As discussed in detail in Section 6, the proposed Project will totally impact 127 sites (80 artefact scatters, 45 isolated finds and two PADs). One site (Wambo 202; #37-5-0343) will be partially harmed by the Project. These sites will be harmed by the proposed open cut pit, emplacement areas and other axillary infrastructure should the Project be approved.

The Project would also result in indirect impacts on Aboriginal cultural heritage values and add to the cumulative loss in cultural heritage in the Hunter Valley.

The Aboriginal cultural heritage management process consulted with the RAPs to seek input and then feedback into the development of management options and recommendations should the Project be approved or not approved.

For the Project, all Aboriginal registrants were afforded opportunities to identify mitigation and management, care and control considerations and intergenerational equity options to inform the consolidated management options presented in this ACHA report.

8.2 Management Measures

To be consistent with other recent Glencore Aboriginal Cultural Heritage Assessment processes in the Hunter Valley, such as ACHA's undertaken for the Bulga Optimisation Project, and Mount Owen Continued Operations (under assessment) Cultural, Historic and Aesthetic values have greater focus in the assessment process and both the management measures committed to by Glencore.

There are two types of management measures as a result of the assessment process:

1. On-Site Management Measures, and
2. Off-Site Management Measures

On-site management measures may include actions such as archaeological salvage, protective fencing, artefact analysis, curation arrangements, induction programmes and the development or updating of an ACHMP.

Off-site management measures may include actions such as community development programmes, scholarships, educational activities or elder's camps.

In these projects, management measures have aligned to the Aboriginal Community Wellbeing Toolkit and criterion from OEH, in particular the elements that focus on 'Culture'. For the United Project, of the 8 key principals of the toolkit, the following three are the basis of the management measures proposed:

- Sense of Community;
- Education and learning, and
- Cultural identity.

Some of the principals of the Toolkit (such as Infrastructure and services, economic strength and development, and community health and safety) are more closely aligned with the existing and ongoing Glencore Australia Reconciliation Action Plan process which includes consultation with a working group that includes local Aboriginal community Representatives.

The proposed management measures have been developed for the Project based on the assessment outcomes including recommendations from the disclosed reports (WNAC and PCWP) and workshops held with the WTC and Community RAP's. Whilst a range of different views and recommendations were provided some common themes were presented which strongly aligned with 'Sense of Community', 'Education' and 'Learning and Cultural Identity' principals. This led the Project to propose funding projects in the area of:

- **Caring for Land** – This was a common theme raised by the community. The program proposed focuses on Education and Learning from the Wellbeing Toolkit;
- **Bringing People Together** – There were a range of management measures raised that involved bringing people together for community and/or Cultural purposes and activities. The program proposed focuses on the Sense of Community and Cultural Identity aspects of the Wellbeing Toolkit, and.

- **Cultural Awareness/Education** – There were a range of management measures raised that involved Cultural Awareness/Education/Training, especially for younger people (both for Aboriginal and non-Aboriginal youth). The program focus on Education and Learning with potential flow on effects of Cultural Identity and Sense of Community aspects of the Wellbeing Toolkit.

In addition to aligning management recommendations with the Wellbeing tool kit, the proposed programs offer flexibility for the community to propose other projects, so that the implementation will be contemporary with the community's requests at the time.

The proposed management measures will also include:

- a. Alignment to the principles of the Aboriginal Community Wellbeing Toolkit (OEH 2012) that the project focuses on;
- b. Alignment with findings from this ACHA and the Archaeological assessment;
- c. the need to be achievable for practical implementation;
- d. Provision of sustainable outcomes to promote intergenerational equity;
- e. Able to show value for money.

Table 8-6 contains the proposed management and mitigation measures which will be implemented should the Project be approved.

8.2.1 Aboriginal Cultural Heritage Management Plan

United Collieries has an existing Aboriginal Cultural Heritage Management Plan which will be significantly revised to reflect the results of the archaeological assessment undertaken for the Project and this ACHAR.

8.2.2 The proposed management measures from the Knowledge Holder Groups and RAPs

As noted in this Section the ACHAR process included an '*if approved*' set of care and control, conservation and intergenerational equity management measures.

These measures are described in the following tables and have been summarised by themes and 'areas of commonality'. This has allowed the Project to formulate a set of common recommendations to mitigate or offset harm.

Table 8-1: Community RAP recommendations.

Rec No.	Community RAPs Recommendation
RAP01	Ensure mine staff and contractors undergo cultural awareness training conducted by Wonnarua Elders
RAP02	Ensure equal participation in all cultural heritage work for all RAPs
RAP03	Return all cultural materials held by archaeological consultants to the Project Area immediately, with materials to be stored on-site by Glencore.
RAP04	Establish culturally appropriate 'Keeping Place'
RAP05	Develop a management plan for the material being held in the Keeping Place, which includes access protocols and future research options
RAP6	Glencore fund cultural heritage training for interested Wonnarua people. Such training to include more advanced skills in archaeological site recording and excavation skills than are currently expected of fieldworkers.
RAP7	Glencore facilitate training and employment of young people in the mine other than through engagement in cultural heritage work
RAP8	Glencore to facilitate regular 'whole of (Wonnarua) community' meetings

Table 8-2: Recommendations made by the Wanaruah Local Aboriginal Land Council.

Rec. No.	Wanaruah LALC Recommendations
WLALC01	Any further (archaeological) work undertaken at the United in relation to this project, be carried out as a 'Cultural Salvage' and the Aboriginal stakeholders be given the opportunity to gather as much of their significant cultural heritage material as they can - with the work only completed when the Aboriginal stakeholders are satisfied with what has been salvaged and are happy with the final determination of a keeping place.
WLALC02	Aboriginal stakeholders (other than the umbrella groups should be acknowledged in the archaeological report and ACHAR.

Table 8-3: Recommendations made by the Plains Clan of the Wonnarua People

Rec. No.	Plains Clan of the Wonnarua People
PCWP01	Commitment in all current and future mine plans to positive communication of Aboriginal cultural values across the Project Area.
PCWP02	Commitment to and support for the leverage of funding from the NSW Minerals Council (from the apparently largely inactive Upper Hunter Cultural Heritage Trust) to enable the consolidated return of Aboriginal cultural heritage objects collected across the mine site. The PCWP has already sort assistance for this in regard to the Glencore Bulga Optimisation project (see Tocumwal 2012); and sees that it is of vital importance that such a keeping place is found for all cultural materials removed from PCWP lands; and in the returning of their PCWP specific cultural heritage to 'Country'.
PCWP03	Commitment to and support for the use of some of the previously agreed funding (i.e. for the establishment of a Keeping Place or Wonnarua Cultural Teaching and Learning Centre) by Glencore to investigate and implement culturally appropriate and, in perpetuity arrangements, for the repatriation of Aboriginal objects to the Wonnarua People. The PCWP do not want objects returned to Wonnarua Country if they are not going to be properly curated and/or protected and/or conserved in a place that will not be subject to any development pressures into the future. Strategic support also sought from Glencore to access suitable funding from other of the mines in the Valley via the NSW minerals Council, would be seen as appropriate to help achieve recompense for the loss of the cultural landscape of the PCWP and would be one measure that would afford appropriate redress of cumulative impact and allow for some achievement of intergenerational equity.
PCWP04	The development of contractual arrangements for employment of PCWP members in on-ground works such as erection of signage, fencing, tree planting, management of revegetation, feral animal and weed control, earthworks and landscaping, fire mitigation and hazard reduction management. The PCWP recognises that Tocumwal has the capacity to manage such contractual arrangements and has the support of the PCWP to do so within the Hunter Valley.
PCWP05	Further systematic assessment and/or recording of PCWP cultural resource values within the Project Area prior to mine clearance works. This should be conducted with the view of establishing 3D digital models of the existing physical landscape including archaeological sites, cultural mapping and geomorphology) and/or photographic record of the landform and vegetation communities within at as an archival record. This would be expected to be able to be used as a future resource for development of interactive teaching materials for young Wonnarua without past, current or likely future access to the mine site.
PCWP06	Realistic evaluation of the current and future landscape contexts of in-situ Aboriginal cultural resources within the Project Area. This should include dynamic 3D landform modelling of all likely future mine induced landform modifications in and around all archaeological sites of Aboriginal cultural value. Conservation of all known Aboriginal objects and their associated physical settings should be assessed in the context of their ongoing position within the active mine site so as to reduce any potential to cause incidental and/or incremental compromise of the cultural value of retained sites
PCWP07	A commitment from Glencore to establish a long-term research project that incorporates intangible and tangible values within the PCWP area.
PCWP08	If located and repatriated to the Wonnarua Country the stone artefact assemblages that have been collected and removed from the Project via various AHIPs should be systematically analysed to achieve a synthesis of data across the Project. This analysis should be funded by Glencore as a research program by the PCWP. The research should be collaborative and designed to answer specific questions that the PCWP have with respect to their heritage.
PCWP09	The PCWP have demonstrated a significant and ongoing connection to the Project area, the core of which has been related to oral history, archival and genealogical research on their traditional, historical and ongoing connection to this country. The PCWP seeks funding and/or logistic support to continue this research with the view to understanding the past involvement of their ancestors with the area and linking it with the historic and contemporary stories of this place. Ultimately the PCWP desire to prepare technical and popular information in a variety

	of media about their story of survival, connection and ongoing custodianship of the cultural landscape within which the Project Area occurs.
PCWP10	<p>Active open cut mining is perceived by the PCWP to have a wholly negative and intrusive effect on their Aboriginal cultural landscape, including the Project Area. These negative and intrusive effects include:</p> <ul style="list-style-type: none"> • Compromised aesthetic and/or amenity values. PCWP members describe the Project Area as having been relatively flat to moderately undulating - valley like, with more rugged areas towards the western boundary (the headwaters of Redbank Creek) - until the advent of mining activities within their lifetimes. Hence the actively mined landforms of the Project Area (with or without obvious erosional control and/or re-vegetation) are immediately recognised by them as being artificial, and out of context; and simply not capable of effectively supporting and/or sustaining any of their cultural reference points. This is likewise for all existing and future mining voids that are perceived by the PCWP to effectively 'delete' all cultural reference points from the existing landscape. • Fragmented and isolated Aboriginal archaeological sites; both from each other and also from their wider cultural landscape contexts; and finally • Reduced and/or limited access to known and valued Aboriginal archaeological or cultural sites as a result of the vagaries of mine site activities. <p>Consequently the PCWP considers it imperative that the complete salvage of Aboriginal archaeological and cultural sites within the Project Area - including all minor and major infrastructure intensive areas - should be considered in the context of the proposed impacts, i.e. open cut mining. This needs to include a detailed analysis of landscape evolution against a backdrop of climatic change and ancillary studies such as hydrological and vegetation changes.</p>
PCWP11	The production and development of a primary school reader series aimed at the NSW Schools K-6 Human Society and Its Environment (HSIE) syllabus that introduces primary school children within the Upper Hunter (and beyond) to the concepts, contents and values of Wonnarua cultural and ecological knowledge. A targeted focus would be on the use of these materials to enhance the relevance of literacy aids for Aboriginal schools within the Hunter region.
PCWP12	The development of novel Aboriginal cultural awareness training packages that allow for the focused use of materials and knowledge provided by the PCWP. A key component of this training would be their development, implementation and delivery by Tocumwal (as support for the PCWP). The employment of an Aboriginal cultural awareness officer as part of the HR management system across the mine is a warranted component of any ongoing support for this type of training.
PCWP13	The development of horticultural extension programs that enable Aboriginal people to be trained and actively participate in mine rehabilitation and revegetation works
PCWP14	Support for investigations of the potential horticultural use of plant species of known Aboriginal use and or value for cultural landscape rehabilitation as an integrated component of mine site rehabilitation across the Project. This would include pre-emptive retrieval of seed at the time of and/or before vegetation clearance works occur. Likewise, it should comprise intensive research on the effective soil inoculation rates for germination of the mid and understorey components of this native vegetation, as it is plants in these storeys that use and knowledge of by the PCWP is most focused. This warrants development of horticultural/greenhouse spaces for managing seed collection and propagation and the development of trial sites within the mined landscape for this testing. This activity would effectively build on the already significant body of scientific research achieved on this mine site in regard to native plant rehabilitation; and by incorporating PCWP specific knowledge - and co-locating it within those previously designated voluntary conservation areas where known Aboriginal objects have been retained - would further enhance these zones; and enable a positive and ongoing involvement of the PCWP within their cultural landscape.

Table 8-4: Recommendations made by the Wonnarua Traditional Custodians.

Rec No.	Wonnarua Tradition Custodians
WTC01	WTC recommended that Glencore fund a Keeping Place for Wonnarua cultural materials impacted through mining.
WTC02	WTC recommended Glencore fund a range of community gatherings whereby members of the Wonnarua community could gather outside of any mining related activities to share cultural knowledge and experience.
WTC03	WTC recommended that Glencore fund a range of rehabilitation and revegetation programs with the direct involvement of Wonnarua people.
WTC04	WTC interested in further research about flora and fauna of the region
WTC05	WTC recommended that Glencore fund cultural heritage training opportunities and/or Tertiary scholarships in cultural heritage management or closely related disciplines (i.e. environmental science) for Wonnarua people.

Table 8-5: Recommendations made by the Wonnarua Nation Aboriginal Corporation.

Rec No.	Wonnarua Nation Aboriginal Corporation
WNAC01	Women's cultural week - An opportunity for women to spend time together focusing on their experiences, healing issues, cultural knowledge and understandings.
WNAC02	Cultural healing reunion camp - For Wonnarua people to spend time on country together with extended family focusing on healing processes and sharing experiences. These camps will; deal with intergenerational trauma, have activities, share stories, use facilitators, talk about health and life balance, occur once every year over two days.
WNAC03	Reconnection to Country healing/Bringing Them Home - For Wonnarua people who have been separated from country for one or more generations to spend time on country with Wonnarua elders focusing on healing processes and sharing experiences.
WNAC04	Elders Place for spending time on country and healing - A place within Wonnarua country that is dedicated to providing Wonnarua elders with an opportunity to take time out of everyday life to heal.
WNAC05	Cultural Men's shed - A place for Wonnarua men to meet, share stories, knowledge and experiences and undertake cultural activities.
WNAC06	Language Centre - Within the proposed cultural centre, museum and keeping place at the St Clair site, a language centre will be developed to

	retrieve, store, develop teaching tools and teach Kattung language for descendants of those who spoke this language.
WNAC07	Arts and Crafts Camp - A week-long celebration of dance, stories, crafts, rug making, basket weaving and implement making held annually at Pioneer Road and the St Clair site, visiting other sites of significance to Wonnarua people to gather resources and tell stories.
WNAC08	Retrieval of traditional stories - Document stories from Elders, stories that were written down and new stories to be passed on to succeeding and current generations of Wonnarua people. Stories support Wonnarua identity and sense of belonging.
WNAC09	Morrison Collection - The Morrison Collection consists of 124 Aboriginal cultural objects gathered at the turn of the 20th century by Alexander Morrison in the Hunter Valley region. This collection is of interest to the Wonnarua people whose families lived at the St. Clair mission where many of the objects were made. WNAC propose to develop a museum, cultural centre and keeping place to return these objects to the Hunter Valley region. The Morrison Collection will be housed in the museum and keeping place at the St Clair site.
WNAC10	Scholarships - Develop scholarships for WNAC young people to enable them to study at University meeting their fees and some of their living costs.
WNAC11	Tracking designs on possum skin cloaks - A project to determine the symbolic meaning and provenance of the designs on the existing Wonnarua possum skin cloaks. These designs are replicated on scarred trees and require gender specific cultural sensitivity in their interpretation.
WNAC12	Genealogy Project - Develop the timeline into CD format. Develop the genealogies into CD format. Provide education to the wider Wonnarua community about the project. Run family history workshops with Wonnarua people to assist them in the recording and tracing of family history. Develop a Wonnarua genealogist role with facilities and office space.
WNAC13	Diorama - Further develop the three scenes (traditional fishing, St Clair and Redbourneberry) to provide touch screens and interpretation.
WNAC14	Culture and Heritage Officer - Develop a Culture and Heritage Officer position to manage the retrieval, storage and coordination of records and objects (physical, digital, oral, archival, printed) and culture and heritage programs, run workshops, inform the Wonnarua community, advice and consult with Elders groups, teach younger generations and the wide public about Wonnarua culture, and confer and negotiate with developers. This role would require training in records management and conservation.
WNAC15	Restaurant - Develop a commercial business selling an eating experience which incorporates Australian bush foods. This business will sit within the cultural hub including the museum, cultural centre, keeping place, and language centre.

Action Area	Action Number	Theme	WTC Rec. Number	WNAC Rec. Number	PCWP Rec. Number	Community RAP Rec. Number	WLALC Rec. Number
ACHMP	A1	Cultural Awareness Induction / Training			PCWP01, PCWP12	RAP01	
	A2	Cultural Signage and Education			PCWP01		
ACHAR	A3	Recognition of Stakeholders in ACHAR			PCWP01		WLAC02
Survey, Collection and Analysis	A4	Cultural Heritage equity				RAP02	
	A5	Archaeological Methodology and protocols			PCWP10		WLAC01
	A6	Archaeological Interpretation			PCWP01		WLAC02
Care and Control	A7	Establish Artefact Storage facility / Keeping Place	WTC01		PCWP02, PCWP03	RAP03, RAP04, RAP05	
	A8	Learning and Land Access					
	A9	3D Scan / Modelling of Project Area			PCWP05, PCWP06		
	A10	Final landform and revegetation involvement					
	A11	Mine site land management contracts					
Research and Additional Assessment	A12	Wonnarua Cultural Mapping and recording			PCWP05, PWCP09		
	A13	Museum Collections		WNAC09			
	A14	Cultural Heritage Research		WNAC08	PCWP07, PCWP08, PWCP09		
	A15	Flora and Fauna Research	WTC04	WNAC11, WNAC12, WNAC13	PCWP14		
Intergenerational Equity	A16	Cultural Heritage training				RAP06, RAP07	
	A17	Employment Opportunities		WNAC14, WNAC15	PCWP04		
	A18	Regular Community Meetings / Meeting Place	WTC02	WNAC01, WNAC02, WNAC03, WNAC04, WNAC05, WNAC06, WNAC07		RAP09	
	A19	Research on Wonnarua horticulture					
	A20	Wonnarua lore and custom training		WNAC08, WNAC11			
	A21	Wonnarua Educational materials funding			PCWP11		
	A22	Horticultural & Revegetation Training	WTC03		PCWP13, PCWP14		
	A23	Rehabilitation / Land Management & Training	WTC03		PCWP13, PCWP14		
A24	Scholarships	WTC05	WNAC10				

Table 8-6: This table is a consolidated management recommendations table based on the preceding management recommendations tables from the PCWP, WTC, WNAC and Community RAPs. Each management action item is cross-referenced to its source (i.e. the 4th recommendation made by the Wonnarua Nation Aboriginal Corporation is shown as WNAC04).

8.2.3 Proposed Management Measures

The following Cultural Heritage Management and Conservation Measures have been developed from the management and conservation measures proposed by RAPs and Knowledge Holder groups during the Aboriginal Cultural Heritage Assessment undertaken for the United project and have been derived by assessing each and every RAPs management and mitigation suggestions.

By providing common themes to the RAPs management and mitigation suggestions, United is better able to review and respond to the RAPs care and control, conservation and intergeneration equity recommendations.

United proposes management measures which address specific RAP derived issues. United have drawn out the consistent themes from the RAPs and have developed measures to be undertaken in the event of approval, which address these key themes.

Proposed On Site Cultural Heritage Management Measures			
	Action No	Action Item	United Proposed Management Measure
Aboriginal Cultural Heritage Management Plan (ACHMP)	R01	Update ACHMP	The existing United Collieries Aboriginal Cultural Heritage Management Plan (ACHMP) will be reviewed for the Project within 12 months of Project Approval to outline all Aboriginal heritage management measures for the Project, responsibilities of all parties and the timeframe for required heritage works. The ACHMP will include a staged approach to the required research and salvage works to ensure that areas required for earliest disturbance are completed as a priority.
	R04	ACHMP Dispute Resolution process	The revised ACHMP will include specific provisions regarding ongoing engagement with the RAPs and would include mechanisms for dispute resolution and communications protocols.
	R05	Survey, collection and Analysis	Salvage (excavation, analysis and collection) as per the recommendations of the OzArk Archaeological Values Assessment Report for the salvage of the 128 sites to be harmed within the Project Disturbance Area. See the OzArk report - Management and Mitigation of Recorded Aboriginal Sites for further details.
Survey, collection and analysis	R06	Discovery of previously unknown cultural heritage items	The Project agrees to follow all relevant NSW Government guidelines regarding the location of human skeletal remains. The Project will apply the precautionary principle to the development of management measures for the Project Disturbance area. This approach will include the development of culturally appropriate management measures for the management of human remains, should this occur during the Project life. Protocols and approach will be developed in consultation with RAPs and updated in the revised ACHMP
	R07	Recording of Archaeological Sites	The ACHMP will be revised to include the new sites identified in the Aboriginal Archaeological Values Assessment Report completed for the Project
	R09	Care and Control Measures regarding Aboriginal Objects	Care and control management measures will be developed and included in the ACHMP for Aboriginal objects recovered through the Archaeological research and salvage program implemented for the Project and for long term storage of artefacts recovered from previous research and salvage programs. The care and control management measures will have regard to cultural considerations. United acknowledge the desire for a regional Wonnarua Keeping Place. However, this facility does not currently exist. United propose to store artefacts from the salvage program at the nearby Wollombi Brook conservation area of the neighbouring Bulga Coal Operations. Should a regional Keeping Place be developed, subject to community support, United would support the relocation of cultural heritage material to that place. United will consider the repatriation of artefacts across rehabilitation areas as part of a closure planning process at the cessation of mining.
Care and Control	R10	Repatriation of artefacts from United Complex	United acknowledge the desire for a regional Wonnarua Keeping Place. However, this currently does not exist. United propose to store artefacts from the salvage program at the nearby Wollombi Brook conservation area of the neighbouring Bulga Coal Operations. Should a regional Keeping Place be developed, subject to community support, United would support the relocation of artefacts. United will consider the repatriation of artefacts across rehabilitation areas as part of a closure planning process at the cessation of mining.
	R11	Sites Not To Be Impacted	The Project will implement the Aboriginal archaeological management measures program for sites in the Project Area that will not be impacted by the Project as recommended in the Aboriginal Archaeological Values Assessment report for the Project. These measures will be further outlined in the updated ACHMP.

Table 8-7: Proposed On Site Management Measures

Proposed Off Site Cultural Heritage Management Measures			
	Action No	Action Item	United Proposed Management Measure
Intergenerational Equity	R13	Caring for Land	Knowledge Holders and RAPs have expressed a desire to be involved in rehabilitation activities and conservation area management. The RAPs have also commented on the importance of understanding plant and animal resources in the region. United acknowledge the desire for stakeholders to be involved in the caring for and 'healing' of the land. United believes that education forms a significant role in achieving this outcome. United would be pleased to offer 3 x 3 year scholarships of \$10,000 each for tertiary education in Environmental Science, Ecology, Cultural Heritage or other related fields for member(s) of the Wonnarua community selected via an agreed application process.
	R14	Bringing people together	Knowledge Holders and RAPs raised a range of issues and potential mitigation strategies with regards to cultural loss, these included: <ul style="list-style-type: none"> • A desire for community (or groups) to come together outside of development application/disturbance processes; • A Desire for a range of cultural experiences (such as Cultural Camps, Elders Camps, teaching to younger generations), and • Assistance to help Wonnarua people who may live outside the region visit Wonnarua Country. United propose to support a program of activities to assist in bringing people together for cultural purposes. Glencore supports NAIDOC week activities in the Upper Hunter including organising bus tours to significant sites and art programs.
	R15	Cultural Awareness and Education	The RAPs raised a range of potential mitigation strategies in relation to promoting cultural awareness in young people. These included: <ul style="list-style-type: none"> • School based awareness/education programs; • Youth and elder camps, and • Development of teaching materials accessible to young people. • United propose to support a program of activities to assist in promoting cultural awareness and education for young people.
	R16	Wonnarua Research	Knowledge Holders groups expressed a desire for Wonnarua led research to be undertaken in the region, with a focus on cultural, archaeological, ecological and social values, with the ultimate goal of providing outcomes and information that Wonnarua people can use and pass on to future generations. United propose to support a program of activities to assist Wonnarua led research with outcomes in <i>Caring for Land</i> and/or <i>Cultural Awareness and Education</i> and/or <i>Bringing People Together</i> for the purposes of building cultural knowledge.
	Timing and Support for the Research, Caring for Land, Bringing People Together and Cultural Awareness and Education Programs		

Table 8-8: Proposed Off-Site Management Measures.

8.3 Management Measures - No Project Approval Scenario

Should the proposed Project not be approved the potential impacts would not occur, and there would be no risk to the cultural values and archaeological sites identified in this ACHAR.

In this scenario, United would update the existing ACHMP and continue to monitor and manage the identified Aboriginal archaeological and cultural heritage values through that management plan.

9 Bibliography

Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cmth).

Aborigines. Replies to a Circular Letter, addressed to the Clergy, of all Denominations, By Order of the Select Committee on the Condition of the Aborigines. Ordered, By the Council, 31st October 1846. Sydney: Printed by W.W. Davies, At the Government Printing Office.

Australia ICOMOS 1999, The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance Australia ICOMOS Incorporated Burwood

Australia ICOMOS 2013 Draft Practice Note: Understanding and Assessing Cultural Significance Australia ICOMOS Incorporated Burwood

Australia ICOMOS. 2000. The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 1999, with associated Guidelines and Code on the Ethics of co-existence.

Australian Heritage Commission (AHC), 2001. Significance Assessment of Heritage Places. Australian Heritage Commission, Canberra.

Australian Museum, 2010, Morrison Collection: boomerangs from the Hunter Valley region, viewed 26 June 2013, <<http://australianmuseum.net.au/Morrison-Collection-Boomerangs-from-the-Hunter-Valley-Region>>

Blyton, G, D. Heitmeyer and J. Maynard. 2004. A history of Aboriginal and European contact in Muswellbrook and the Upper Hunter Valley. Umulliko Centre for Indigenous Higher Education, The University of Newcastle. A Project of the Muswellbrook Shire Council Aboriginal Reconciliation Committee.

Brayshaw, H. 1987. Aborigines of the Hunter Valley. A study of Colonial Records. Scone and Upper Hunter Historical Society, Scone, NSW.

Breton, W. H. 1833. Excursions in NSW, WA & Van Diemens Land (1830-33). London.

Corporations (Aboriginal and Torres Strait Islander) Act 2006 (Cmth).

Cunningham, P. 1825. Two years in New South Wales. London.

Daly, M & Brown, J 1964. The Hunter Valley Region NSW Hunter Valley Research Foundation, Newcastle.

Dangar, H 1824 Field Book 220 2/4860 and Field Book 221 2/4861 in Brayshaw, H 1987 Aborigines of the Hunter Valley: a study of colonial records, Scone and Upper Hunter Historical Society, Scone.

Dean-Jones, P. and Mitchell, P. 1993. New South Wales Department of the Environment and

Conservation. Hunter Valley Aboriginal Sites Assessment Project: Environmental Modelling for Archaeological Site Potential in the Central Lowlands of the Hunter Valley. Report to NSW National Parks and Wildlife Service.

Department of Environment and Conservation (DEC) 2005 Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation. Sydney.

Department of Environment Climate Change and Water (DECCW) NSW 2010 Aboriginal cultural heritage consultation requirements for proponents 2010: Part 6 National Parks and Wildlife Act 1974. Sydney.

Dunne, A. 2012. From Brook to Broke: A History of Broke, *Fordwich*.

Ebsworth. H T 1826 A letter book, kept at Sydney and Port Stephens ML MS B852 in Brayshaw, H 1987 Aborigines of the Hunter Valley: a study of colonial records, Scone and Upper Hunter Historical Society, Scone.

Environment Planning and Assessment Act 1979 (NSW).

Environment Protection and Biodiversity Conservation Act 1999 (Cmth).

Fawcett, J W, 1898 'Notes on the customs and dialect of the Wonnah-Ruah', Science, August 22, pp/ 152-154 and 180-181 <<http://www.newcastle.edu.au/resources/divisions/academic/library/cultural%20Collections/pdf/fawcett1898.pdf>>

Fourmille, H (1989) Who Owns the Past?: Aborigines as Captives of the Archives [online]. Aboriginal History, Vol. 13, 1989: 1-8.

Gray, A 2010 St Clair Mission, viewed 26 June 2013 <<http://australianmuseum.net.au/St-Clair-Mission>>

Heritage Act 1977 (NSW).

Heritage Office and Department of Urban Affairs and Planning (DUAP), 1996. Regional Histories. Department of Urban Affairs and Planning and Heritage Council of New South Wales.

Horton, D (ed.) 1994, The encyclopaedia of Aboriginal Australia, Aboriginal Studies Press for the Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra.

Howe, J 1819 Windsor Papers ML MS 106 in Brayshaw, H 1987 Aborigines of the Hunter Valley: a study of colonial records, Scone and Upper Hunter Historical Society, Scone.

Journal of the Royal Australian Historical Society 1953.

- Koettig, M 1990 Regional Study of Heritage Significance Central Lowlands Hunter Valley', Electricity Commission Holdings, July 1990, Vol 3: Assessment of Aboriginal Sites
- Kovac, M. and Lawrie J.W., 1991. Soil Landscapes of the Singleton 1:250,000 Sheet. Soil Conservation Service of New South Wales, Sydney.
- Lucas, Stapleton and Partners Pty Ltd 2013. Hunter Estates: A Comparative Study of pre 1850s Homestead Complexes in the Hunter Region. Volume 1: Historical Context and Survey of Sites.
- Macquarie University 2009, Australian Aboriginal tribes, viewed 26 June 2013, <<http://www.libmq.edu.au/all/journeys/related/tribes.html>>.
- McDonald. 1878. cited in Australian Languages and Traditions. Journal of the Anthropological Institute of Great Britain and Ireland. 7: 255-258.
- Miller J 1985, Koori: A will to win, viewed 26 June 2013, <<http://www.wonnarua.org.au/images/about%20the%20wonnarua%202.pdf>>.
- National Parks & Wildlife Act 1974 (NSW).
- Native Title Act 1993 (Cmth).
- Needham, B 1981 Burrigurra: where the spirit walked – Aboriginal sites in the Cessnock-Wollombi region of the Hunter Valley, NSW, Cessnock.
- Nolan, R 2012 'We want to do what they did' History at St Clair', BA (Hons), University of Sydney, Sydney
- Office of Environment and Heritage (OEH) 2010 Guide to Investigating, assessing, and reporting on Aboriginal Cultural Heritage in New South Wales.
- Office of Environment and Heritage (OEH) 2012 Strengthening Aboriginal Community Wellbeing Toolkit.
- OzArk Environmental and Heritage Management (OzArk) 2016 Aboriginal Archaeological Values Assessment: United Wambo Project Hunter Valley, NSW. Report for Glencore.
- Protection of Movable Cultural Heritage Act 1986 (Cmth).
- Rappoport (2006). Edderton, 1477 Edderton Road, Muswellbrook. Conservation Management Plan.
- Recording. Unpublished report to Glencore.
- Road. For United Collieries Pty Limited.
- Singleton Argus. 1966. Centenary of the Municipality of Singleton 1866-1966. Singleton Argus, Singleton.
- Threatened Species Conservation Act 1995 (NSW).
- Tindale, N B 1940 'Map showing the distribution of the Aboriginal tribes of Australia' [cartographic], in Digital Collections Maps, National Library of Australia, viewed 3 July 2012, <<http://www.nla.gov.au/apps/cdview/?pi=nla.map-gmod91-e>>.
- Tindale, N. B. 1974 Aboriginal tribes of Australia: their terrain, environmental controls, distribution, limits, and proper names. Australian National University Press. Canberra.
- Turner, J 1995. Historical Themes of the Shire of Muswellbrook, unpublished.
- Umwelt (Australia) Pty Ltd. 2005. Statement of Environmental Effects for Realignment of Internal Haul
- Umwelt (Australia) Pty Ltd. 2012. Historic Heritage Assessment Bulga Optimisation Project
- Umwelt (Australia) Pty Ltd. 2015. Broke RAAF Landing Ground and McNamara's Dairy Cottage Archival
- Wood, W. Allan. 1972. Dawn in the Valley. Wentworth Books, Sydney.

10 Glossary

Absolute Dating: Is the process of determining a specific date for an archaeological or paleontological site or artefact. Some archaeologists prefer the terms chronometric or calendar dating, as use of the word "absolute" implies a certainty and precision that is rarely possible in archaeology. See also relative dating.

Adze: A stone tool made on flakes with steep flaking along the lateral margins and hafted for use as a wood working tool.

Alluvial Terrace: A terraced embankment of loose material adjacent to the sides of a river valley.

Amorphous: Showing no definite crystalline structure.

Angle Of Applied Force: The angle at which the force of flaking is applied to a core.

Angular fragment: A piece of stone that is blocky or angular.

Anisotropic: Having some physical properties which vary in different directions.

Anvil: A portable stone, used as a base for working stone tools. Anvils most frequently have a small circular depression in the centre which is the impact damage from where cores were held while being struck by a hammer stone. An anvil may be a multi-functional tool also used as a grindstone and hammer stone.

Archaeological Context: The situation or circumstances in which a particular item or group of items is found.

Archaeological site types: The archaeological site types encountered in Australia can be divided into three main groups:

Historical archaeological site: An archaeological site formed since the European settlement containing physical evidence of past human activity (for example a structure, landscape or artefact scatter).

Aboriginal contact site: A site with a historical context such as an Aboriginal mission station or provisioning point, or a site that shows evidence of Aboriginal use of non-traditional Aboriginal materials and technologies (e.g. metal or ceramic artefacts).

Aboriginal prehistoric archaeological site: A site that contains physical evidence of past Aboriginal activity, formed or used by Aboriginal people before European settlement.

These sites may be:

Artefact scatters	Scarred Trees
Isolated artefacts	Mounds
Rock shelters	Rock art
Burial Structures	Hearths
Shell middens	Quarries
Ethnographic Items	Grinding Patches

Archaeology: The study of the past through the systematic recovery and analysis of material culture. Archaeology relies heavily upon science and cognate disciplines to provide interpretations of the past life ways of the peoples under investigation.

Artefact: any movable object that has been utilised modified or manufactured by humans.

Artefact scatter: A surface scatter of cultural material. Aboriginal artefact scatters are often defined as being the occurrence of five or more items of cultural material within an area of about 10m x 10m.

Australian Height Datum: The datum used to determine elevations in Australia. The AHD is based on the mean coastal sea level being zero metres AHD.

Australian Small Tool Tradition: Stone tool assemblages found across Australia, with the exception of Tasmania, dating between 8000 BP to European contact. The tool types include hafted implements (e.g. Bondi points), bifacial and unifacial points, geometric microliths, and blades. The assemblage is named for its distinct lack of larger 'core tools' which characterised earlier assemblages.

Axe: A stone-headed axe or hatchet or the stone head alone, characteristically containing two ground surfaces which meet at a bevel.

Backed Artefact: Backed artefacts are flakes retouched until they have one or more steep and relatively thick surfaces that are covered with negative scars. Since the backing retouch was accomplished with a bipolar and/or anvil-rested knapping technique, these retouched surfaces typically show negative scars originating from two directions, a pattern that is sometimes described as "double backing". Backed pieces are a feature of the 'Australian small tool tradition', dating from about 8000 BP in southern Australia.

Bearing: An angle measured clockwise from a north line of 0° to a given surveyed line.

Bevelled Edge: An edge which has had its angle altered.

Biface: A flaked stone artefact which has flake scars on both ventral and dorsal surfaces.

Bipolar: Technique of knapping where a core is rested on an anvil and force applied to the core at an angle close to 90° in the direction of the core's contact with the anvil.

Blade: A flake at least twice as long as it is wide.

Blaze: A mark carved in a tree trunk at about breast height. This type of mark was traditionally used by explorers or surveyors to indicate a route of passage in a certain direction, or a particular camp location.

Bulb of Percussion: Is a convex protuberance located at the proximal end of the ventral surface of a flake, immediately below the ring crack.

Bulbar Scar: The negative scar on a core that results from the bulb of percussion on the extracted flake.

Burial site: Usually a sub-surface pit containing human remains and sometimes associated artefacts. Human burials can also occur above the ground surface within rock shelters or on tree platform burials.

Burin: A stone implement roughly rectangular in shape with a corner flaked to act as a point for piercing holes.

Cadastral: From the Latin, a cadastre is a comprehensive register of the real property of a country, and commonly includes details of the ownership, the tenure, the precise location (some can include GPS coordinates), the dimensions (and area), the cultivations if rural and the value of individual parcels of land.

Chert: Is a fine-grained silica-rich microcrystalline, cryptocrystalline or microfibrinous sedimentary rock that may contain small fossils. It varies greatly in colour (from white to black), but most often manifests as gray, brown, greyish brown and light green to rusty red. Its colour is an expression of trace elements present in the rock, and both red and green are most often related to traces of iron (in its oxidized and reduced forms respectively).

Cleavage Plane: A plane of weakness or preferred fracture in a rock.

Composite: An artefact made up of two or more parts joined together.

Conchoidal Fracture: describes the way that brittle materials break when they do not follow any natural planes of separation. Materials that break in this way include flint and other fine-grained minerals, as well as most amorphous solids, such as obsidian and other types of glass. Conchoidal fractures often result in a curved breakage surface that resembles the rippling, gradual curves of a mussel shell; the word "conchoid" is derived from the word for this animal. A swelling appears at the point of impact called the bulb of percussion. Shock waves emanating outwards from this point leave their mark on the stone as ripples. Other conchoidal features include small fissures emanating from the bulb of percussion.

Conjoin: A physical link between artefacts broken in antiquity. A conjoin set refers to a number of artefacts which can be been refitted together.

Contours: Lines joining points of equal height on a topographic map. Contour lines that are relatively close together depict an area of steep terrain on the earth's surface; whereas lines depicted a distance apart represent flat areas on the earth's surface.

Core: An artefact from which flakes have been detached using a hammer stone. Core types include single platform, multi-platform, and bipolar forms.

Cortex: Weathered outer surface of rock, usually chemically altered.

Crazing: Production of visible surface cracks by uncontrolled heating of rock.

Crown land: Technically belonging to the reigning sovereign, is a class of public land, provided for the enjoyment and benefit of the people.

Crushing: Abrasion, small fracturing and the formation of ring cracks, usually along an artefacts edge.

Cryptocrystalline: Rock in which the crystal structure is too fine for clear resolution with an optical microscope.

Cultural significance: Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations (Australia ICOMOS Burra Charter Article 1.2).

Cultural Materials: The products of human behaviour, such as stone artefacts or food debris.

Datum: In surveying and geodesy, a datum is a reference point or surface against which position measurements are made, and an associated model of the shape of the earth for computing positions. Horizontal datum's are used for describing a point on the earth's surface, in latitude and longitude or another coordinate system. Vertical datum's are used to measure elevations or underwater depths. The previous datum used in Australia was known as the Australian Geodetic Datum (AGD). However, this was restricted because it was defined to best fit the shape of the earth in the Australian region only. The change in datum's had a major consequence to all coordinates. Both latitudes/longitudes and eastings/northings were shifted by approximately 200 metres in a north-easterly direction.

Debitage: The term debitage refers to the totality of waste material produced during lithic reduction and the production of chipped stone tools. This assemblage includes, but is not limited to, different kinds of lithic flakes, shatter, and production errors and rejects.

Decortication: Removal of cortex from a stone artefact.

Dendrochronology: Is the method of scientific dating based on the analysis of tree-ring growth patterns.

Denticulated: Describes a stone tool which has one edge worked into a series of notches giving a toothed or serrated cutting edge.

Discard: The movement of an object from its systemic context to an archaeological context.

Distal: The end of a flake opposite the bulb; the area of a flake containing its termination.

Direct Freehand Knapping: A method of holding the material to be flaked in the unsupported hand and directing the hammer stone with the other hand.

Dorsal Surface: The face of a flake which was the core surface prior to flake removal and may therefore retain negative flake scars or cortex.

Edge ground implement: A tool, such as an axe or adze which has been flaked to a rough shape and then ground against another stone to produce a sharp edge.

Edge modification: Irregular small flake scarring along one or more margins of a flake, flaked piece or core, which is the result of utilisation/retouch or natural edge damage. Edge damage refers to the removal of small flakes from the edge of an artefact.

Elevation: The height above mean sea level.

Eraillure Flake: A flake formed between the bulb of force and the bulbar scar. Sometimes the eraillure flake adheres to the core in the bulbar scar. The eraillure flake leaves no scar on the core, but always leaves a scar on the ventral surface of the flake. The eraillure flake is convex / concave (like a meniscus lens), has no distinct features on the "dorsal face", but may contain compression rings on the bulbar face.

Ethno-archaeology: The study of human behaviour and of the material culture of living societies in order to learn how items enter the archaeological record, thus allowing the formation of hypotheses as to how items of material culture entered the archaeological record in pre-history.

Ethnographic Site: Often overlooked in cultural heritage management, an ethnographic site is one which has particular spiritual or ritual significance to a particular group of people. They are more commonly referred to as 'dreaming sites' in Australia, and most appropriately recorded by someone with anthropological qualifications.

Excavation: The systematic recovery of archaeological data through the exposure of buried sites and artefacts. Excavation is a destructive process, and hence it is accompanied by comprehensive recording of every aspect.

Excavation Report: Once an excavation has finished, a report outlining the reasons, aims, methods used and findings from the excavation as well as some conclusions drawn from interpreting the artefacts.

Faceted Platform: A platform which is created by the removal of a number of flake scars.

Feather Termination: A termination of the fracture plane that occurs gradually (i.e. there are no sharp bends in the plane), producing a thin, low angled distal margin.

Feature: In excavations, a feature is something that a human made in the past that has not been or cannot be moved. Examples of this would be a house floor or a hearth (fire pit). When archaeologists are excavating, they often come across features.

Flake: A piece of stone removed from a core during the process of knapping by the application of external force, which characteristically shows traces of the processes of removal: concentric fracture ripples and a bulb of percussion. Flakes with a length: breadth ratio of 2:1 or more are usually referred to as blades. In some cases flakes are the result of shaping a block of stone into a tool of some kind. When removed from a prepared core, however, they were usually used as blanks for making tools. Primary flakes (also called decortication flakes) are large, thick flakes struck off a core when removing the cortex and preparing it for working. Secondary flakes (also called reduction flakes) are large flakes struck off a piece to reduce its size or thickness. Tertiary flakes are small flakes struck off when shaping the detail of a piece to make a specific tool. Retouching flakes are tiny, extremely thin flakes pinched or pushed off a piece to finish it, to fine-shape part of the surface, sharpen it, or resharpen it. Notching flakes are produced when putting hafting notches in stone tools.

Force: The quantity of energy exerted by a moving body; power exerted; energy exerted to move another body from a state of inertia.

Formal tool: an artefact that has been shaped by flaking, including retouch, or grinding to a predetermined form for use as a tool. Formal tools include scrapers, backed pieces, adzes and axes.

Fracture: Irregular surface produced by breaking a mineral across rather than along cleavage planes.

GDA94: Geocentric Datum of Australia. A spatial reference system which is universally implemented across Australia. The Geocentric Datum of Australia (GDA) is a coordinate reference system that best fits the shape of the earth as a whole. It has an origin that coincides with the centre of mass of the earth, hence the term 'geocentric'

Geodesy: The science and mathematical calculations of the shape and size of the Earth.

Geographic coordinates: a geographic coordinate system enables every location on the earth to be specified, using mainly a spherical coordinate system. There are three coordinates: latitude, longitude and geodesic height.

Geographic Information Systems: Is any system for capturing, storing, analysing, managing and presenting data and associated attributes which are spatially referenced to Earth. GIS is a system or tool or computer based methodology to collect, store, manipulate, retrieve and analyse spatially (georeferenced) data.

Geometric microlith: A small tool that has been fashioned from breaking apart a microblade. The piece is then retouched or backed and a small tool formed.

Gilgai soils: Soils with an undulating surface, presenting as a pattern of mounds and depressions. Gilgai soils contain swelling clays, which shrink and swell with alternate drying and wetting cycles. They display strong cracks when dry. Elements of the soil circulate and move during the shrink-swell process.

Global Positioning System: GPS is a satellite based navigation system originally developed by the United State's Department of Defence. A GPS receiver calculates a position by measuring distances to four or more satellites of a possible 24. These orbit the Earth at all times.

Grain: A description of the size of particles or crystals in rocks or sand. Coarse grained rocks have particles or crystals which are large (1mm or more), and fine grained rocks have particles which are small (0.1mm or less).

Greywacke: Hard fine-grained rock of variable composition containing some quartz and feldspar but mostly very fine particles of rock fragments.

Graticule: A network of crossing lines on a map representing parallels of latitude and meridians of longitude as defined by the projection.

Grid: The division of an archaeological site into small squares that denote different areas of excavation, making it easier to measure and document the site.

Grid coordinates: A point on a map given as an easting and northing reading. The values are given in metres.

Grindstone: The abrasive stone used to abrade another artefact or to processes food. Upper and lower grind stones used to grind plants for food and medicine and/or ochre for painting. A hammer stone sometimes doubles as a hammer stone and/or anvil.

Hammer stone: a piece of stone, often a creek/river pebble/cobble, which has been used to detach flakes from a core by percussion. During flaking, the edges of the hammer stone become 'bruised' or crushed by impact with the core. Hammer stones may also be used in the manufacture of petroglyphs.

Hand-Held: Description of the method used to immobilize the rock during knapping, it which it is held in one hand and struck by a hammer stone held in the other hand.

Hardness: Resistance of material to permanent deformation.

Hearth: Usually a sub-surface feature found eroding from a river or creek bank or a sand dune – it indicates a place where Aboriginal people cooked food. The remains of hearth are usually identifiable by the presence of charcoal and sometimes clay balls (like brick fragments) and hearth stones. Remains of burnt bone or shell are sometimes preserved with a hearth.

Heat treatment: The thermal alteration of stone (including silcrete) by stone workers to improve its flaking qualities.

Heritage: The word 'heritage' is commonly used to refer to our cultural inheritance from the past that is the evidence of human activity from Aboriginal peoples through successive periods of later migration, up to the present day. Heritage can be used to cover natural environment as well, for example the Natural Heritage Charter. Cultural heritage can be defined as those things and places associated with human activity. The definition is very broad, and includes Indigenous and historic values, places and objects, and associated values, traditions, knowledge and cultures.

Heritage Place: A place that has aesthetic, historic, scientific or social values for past, present or future generations – 'this definition encompasses all cultural places with any potential present or future value as defined above'. Heritage place can be subdivided into Aboriginal place and historical place, for the purposes of this document.

Hinge Termination: A fracture plane that turns sharply toward the free surface of the core immediately prior to the termination of the fracture. The bend of the ventral surface is rounded and should not be confused with a step termination.

Historic place: A place that has some significance or noted association in history.

Homogeneous: Uniform structure and property throughout the material.

Hunter-gatherer: A member of a society who gains their subsistence in the wild on food obtained by hunting and foraging.

Hydrology: Is the study of the movement, distribution, and quality of [water](#) throughout the Earth.

ICOMOS (International Council on Monuments and Sites): ICOMOS is a nongovernment professional organisation closely linked to UNESCO, with national committees in some 100 countries with the headquarters in France. ICOMOS promotes expertise in the conservation of cultural heritage. It was formed in 1965, and has a responsibility to advise UNESCO in the assessment of sites proposed for the World Heritage List. Australia ICOMOS was formed in 1976. Its fifteen member executive committee is responsible for carrying out national programmes and participating in decisions of ICOMOS.

Incipient Crack: A crack or line of weakness in the rock.

Inclusion: An impurity or foreign body in the stone that reduces the homogeneity of the rock.

Indirect Percussion: Punch technique.

Interpretation: The process of explaining the meaning or use of an artefact.

Inward Force: Force applied to the platform, and directed into the body of the core.

Isolated artefact: The occurrence of less than five items of cultural material within an area of about 100 sq. metres. It/they can be evidence of a short-lived (or one-off) activity location, the result of an artefact being lost or discarded during travel, or evidence of an artefact scatter that is otherwise obscured by poor ground visibility.

Knapper: A person who creates stone artefacts by striking rocks and causing them to fracture.

Knapping Floor: The debris left on one spot and resulting from the reduction of one block of raw material. A knapping location is a site comprised of one or more knapping floors.

Koori: Koori is an Aboriginal term used to describe Indigenous people from Victoria and southern New South Wales.

Lateral Margins: The margins of a flake either side of the percussion axis.

Latitude: The angular distance along a meridian measured from the Equator, either north or south.

Layer: The layer is the level in which archaeologists dig. All excavation sites have different numbers of layers. Archaeologists try to work out when they are moving to a new layer by cultural or man-made clues like floors, but sometimes they will go by changes in soil colour or soil type.

Longitude: The angular distance measured from a reference meridian, Greenwich, either east or west.

Longitudinal Cross Section: The cross-section of a flake along its percussion axis.

Magnetic north: The direction from a point on the earth's surface to the north magnetic pole. The difference between magnetic north and true north is referred to as magnetic declination.

Maintenance: The process of keeping an artefact in a particular state or condition. An edge which is being used is maintained by flaking off blunted portions. A core is maintained by keeping its characteristics within the limits required for certain types of flaking.

Manufacture: The process of making an artefact.

Manuport: Foreign fragment, chunk or lump of stone that shows no clear signs of flaking but is out of geological context and must have been transported to the site by people.

Map scale: The relationship between a distance on a map and the corresponding distance on the earth's surface.

Margin: Edge between the ventral and dorsal surfaces of a flake.

Material culture: A term that refers to the physical objects created by a culture. This could include the buildings, tools and other artefacts created by the members of a society.

Mercator projection: A conformal cylindrical projection tangential to the Equator. Rhumb lines on this projection are represented as straight lines.

Meridian: A straight line connecting the North and South Poles and traversing points of equal longitude.

MGA94: The Universal Transverse Mercator coordinates of eastings, northings, and zones generated from GDA94 are called Map Grid of Australia 1994 coordinates.

Microblade: A very small narrow blade.

Microcrystalline: Rocks in which the crystals are very small but visible in an optical microscope.

Microwear: Microscopic use-wear.

Moiety: A moiety is a half. Tribes were composed of two moieties (halves) and each clan belonged to one of the moieties.

Mound: These sites, often appearing as raised areas of darker soil, are found most commonly in the volcanic plains of western Victoria or on higher ground near bodies of water. The majority were probably formed by a slow buildup of debris resulting from earth-oven cooking: although some may have been formed by the collapse of sod or turf structures. It has also been suggested some were deliberately constructed as hut foundations.

Morphology: The topographical characteristics of the exterior of an artefact.

Mosaic: A number of continuous aerial photographs overlapped and joined together by way of 'best fit' to form a single non-rectified image.

Negative Bulb of Force: The concave surface left after a flake has been removed. See Bulbar Scar.

Notched: Serration or series of alternating noses and concavities.

Obtrusiveness: How visible a site is within a particular landscape. Some site types are more conspicuous than others. A surface stone artefact scatter is generally not obtrusive, but a scarred tree will be.

Overhang: The lip on a core or retouched flake, caused by the platform being undercut by the bulb on the flake removed.

Overhang Removal: The act of brushing or tapping the platform edge in order to remove the overhang in a series of small flakes.

Overlays: The Victorian Planning Provisions establish a number of different Overlays to show the type of use and development allowed in a municipality. Heritage Overlays will list places of defensible cultural heritage significance.

Patina: An alteration of rock surfaces by molecular or chemical change (but not by attrition, hence not to be confused with sand blasting).

Pebble/cobble: Natural stone fragments of any shape. Pebbles are 2-60 mm in size and cobbles are 60-200 mm in size.

Percussion: The act of hitting a core with a hammer stone to strike off flakes.

Percussion Flaking: The process of detaching flakes by striking with a percussor.

Percussion Length: The distance along the ventral surface from the ring crack to the flake termination.

Place: Place means a site, area, land, landscape, building or other works, group of buildings or other works, and may include components, contents, spaces and views. (Australia ICOMOS Burra Charter Article 1.1)

Plane of Fracture: The fracture path which produces the ventral surface of a flake.

Planning scheme: The legal instrument that sets out the provisions for land use, development, and protection in Victoria. Every municipality in Victoria has a planning scheme.

Platform: Any surface to which a fabricator is applied when knapping.

Platform Angle: 1. The angle between the platform and core face on a core. 2. The angle between the platform and dorsal surface on a flake. 3. The angle between the platform and flaked surface on a retouched flake.

Platform Preparation: Alteration of the portion of the platform which receives the fabricator by grinding, polishing or flaking. Removal of small flake scars on the dorsal edge of a flake, opposite the bulb of percussion. These overhang removal scars are produced to prevent a platform from shattering.

Platform removal flake: A flake which contains a platform on the dorsal surface.

Point of force application: The area of the platform in contact with the indenter during knapping. Also known as point of contact.

Positive Bulb of Force: Bulb of force.

Post-depositional processes: The natural or cultural processes which may differentially impact upon archaeological sediments after they deposited.

Potlids: A concave-convex or plano-convex fragment of stone. Potlids never have a ringcrack or any other feature relating to the input of external force. They often have a central protuberance which indicates an internal initiation to the fracture. Potlids are the result of differential expansion of heated rock.

Pre-contact: Before contact with non-Aboriginal people.

Post-contact: After contact with non-Aboriginal people.

Pressure Flaking: The process of detaching flakes by a pressing force. Also Static Loading.

Primary decortication: The first removal of cortex from a core, creating a primary decortication flake. The flake will have a dorsal surface covered entirely by cortex.

Procurement: Obtaining raw materials.

Provenance: The location of an artefact or feature both vertically and horizontally in the site. Archaeologists record the provenance of artefacts and features in their field books and on the artefact bag. Provenance is important because it gives archaeologists the history and context of an object, i.e., exactly where it was found on the site.

Punch: An object which is placed on a core or retouched flake and receives the blow from the percussor.

Quarry: A place where humans obtained stone or ochre for artefact manufacture. A place where stone or ochre is exposed and has been extracted by Aboriginal people. The rock types most commonly quarried for artefact manufacture in Victoria include silcrete, quartz, quartzite, chert and fine-grained volcanics such as greenstone.

Quartz: A form of silica.

Quartzite: Sandstone in which the quartz sand grains are completely cemented together by secondary quartz deposited from solution.

Radiocarbon Dating: Also called carbon dating and C-14 dating. It is used to work out the approximate age of an artefact by measuring the amount of carbon 14 it contains. This dating technique is not perfect. It can only be used on organic remains (typically wood or charcoal). Also radiocarbon is only accurate to ± 50 years, and cannot accurately date objects more than 50,000 years old.

Redirecting Flake: A flake which uses an old platform as a dorsal ridge to direct the fracture plane.

Redirection: Rotation of a core and initiation of flaking from a new platform situated at right angles to a previous platform. It produces a redirecting flake.

Reduction: Process of breaking down stone by either flaking or grinding.

Reduction Sequence: A description of the order in which reduction occurs within one block of stone.

Rejuvenate: The process of flaking in such a way that further reduction is possible or is easier. This usually involves removing unwanted features, such as step terminations, or making unsuitable characteristics more favourable, for example changing the platform angle. A Rejuvenation flake is a flake that has been knapped from a core solely for the purpose of preparing a new platform and making it easier to get flakes off a core, as it reduces that angle between platform and core surface.

Relative Dating: A general method of dating objects, which uses their relation to other objects. For example, artefacts found in lower layer are typically older than artefacts in higher layer.

Relic: Deposit, object or material evidence of human past.

Replica: A copy of a prehistoric artefact made by a modern investigator for research purposes.

Replicative Systems Analysis: A method of analysing prehistoric artefacts by creating exact replicas of all the manufacturing debris.

Reserves: The word 'reserve' derives from the land being reserved for a particular public use. Crown land retained in public ownership, but not reserved is termed unreserved Crown land.

Resharpener: The process of making a blunt edge sharper by grinding or flaking.

Retouched Flake: A flake that has subsequently been re-flaked. A flake, flaked piece or core with intentional secondary flaking along one or more edges.

Retouching: The act of knapping a flake into a retouched flake.

Ridge: The intersection of two surfaces, often at the junction of two negative scars.

Ring Crack: A circular pattern of micro-fissures penetrating into the artefact around the Point of Force Application and initiating the fracture. It appears on the ventral surface usually as a semi-circular protuberance on the edge of the platform.

Rock art: Paintings, engravings and shallow relief work on natural rock surfaces. Paintings were often produced by mineral pigments, such as ochre, combined with clay and usually mixed with water to form a paste or liquid that was applied to an unprepared rock surface.

Run: A large area of land in which squatters could pasture their stock without a lot of fencing necessary. Employed shepherds looked after various areas of the runs. Runs became consolidated pastoral holdings. Many of the runs were about 25 sq miles in area and later became parishes.

Sand: Quartz grains with only a small content of other materials. Grain size 2.00 mm to 0.05 mm.

Sandstone: A sedimentary rock composed of sand, and with only a small amount of other material, which has been consolidated by argillaceous or calcareous bonding of grains.

Sahul: This is the name given to the continent when Australia and New Guinea were a single landmass during the Pleistocene era. During this period, sea levels were approximately 150 metres lower than present levels.

Scar: The feature left on an artefact by the removal of a flake. Includes negative bulb, negative ring crack and negative termination.

Scarred tree: Scars on trees may be the result of removal of strips of bark by Aborigines e.g. for the manufacture of utensils, canoes or for shelter; or resulting from small notches chopped into the bark to provide hand and toe holds for hunting possums and koalas. Some scars may be the result of non-Aboriginal activity, such as surveyors' marks.

Scraper: A flake, flaked piece or core with systematic retouch on one or more margins.

Screen: A screen is used by an archaeologist to sift excavated soil in search of small artefacts like nails, ceramic fragments, and organic material like seeds, shell, and bone. Can be either manual (hand held) or mechanical.

Secondary Decortication: The removal of cortex from a core after the primary decortication flake. A secondary decortication flake is one that has both cortex and flake scars on the dorsal surface.

Selection: Runs were subdivided into selections for farming, agriculture and grazing homesteads. After a period of yearly rental payments, the selector could often obtain freehold ownership.

Shell midden: A surface scatter and/or deposit comprised mainly of shell, sometimes containing stone artefacts, charcoal, bone and manuports. These site types are normally found in association with coastlines, rivers, creeks and swamps – wherever coastal, riverine or estuarine shellfish resources were accessed and exploited.

Sieve: See Screen.

Significance: Significance is a term used to describe an item's heritage value. Values might include natural, Indigenous, aesthetic, historic, scientific or social importance.

Silica: Silicon dioxide.

Silcrete: A silicified sediment.

Siliceous: Having high silica content.

Site: An area designated for archaeological exploration by excavation and/or survey usually due to the presence of a concentration of cultural material.

Step Termination: A fracture plane that turns sharply towards the free surface of the core immediately prior to the termination of the fracture. The bend of the ventral surface is sharp, often a right angle.

Stratification: Over time, debris and soil accumulate in layers (strata). Colour, texture, and contents may change with each layer. Archaeologists try to explain how each layer was added--if it occurred naturally, deliberately (garbage), or from the collapse of structures--and they record it in detailed drawings so others can follow. Stratigraphy refers to the interpretation of the layers in archaeological deposits. Usually, the artefacts found on top are the youngest (most recent), while those on the bottom are the oldest.

Structures (Aboriginal): Can refer to a number of different site types, grouped here only because of their relative rarity and their status as built structures. Most structures tend to be made of locally available rock, such as rock arrangements (ceremonial and domestic), fish traps, dams and cairns, or of earth, such as mounds or some fish traps.

Surface Site: A site where artefacts are found on the ground surface.

Taphonomy: The study of the depositional and preservation processes which produce archaeological or paleontological material.

Termination: The point at which the fracture plain reaches the surface of a core and detaches a flake.

Tertiary Flake: A flake without cortex.

Theodolite: Instrument used by a surveyor for measuring horizontal and vertical angles.

Thermal Treatment: Alteration of siliceous materials by controlled exposure to heat.

Thickness: Measurement of the distance between the dorsal and ventral surfaces of a flake.

Thumbnail scraper: A convex edged scraper that is small, generally the size of a thumbnail.

Tool: Any object that is used.

Topographic map: A detailed representation of cultural, hydrographic relief and vegetation features. These are depicted on a map on a designated projection and at a designated scale.

Transverse Cross Section: The cross section of a flake at 90° to the length.

Transverse Mercator projection: A projection similar to the Mercator projection, but has the cylinder tangent at a particular meridian rather than at the equator.

True north: The direction to the Earth's geographic North Pole.

Tula: A flake with a prominent bulb, large platform and platform/ventral surface angle of about 130°, which is retouched at the distal end. Not to be confused with a Tula Adze.

Tula Adze: A composite tool observed ethnographically, consisting of a stone artefact (often a Tula), a wooden handle and resin.

Unidirectional Core: Core from which flakes were removed from one platform surface and in only one direction.

Unifacial: Artefact flaked on only one side.

Unit: Archaeologists lay out a grid over a site to divide it into units, which may vary in size, and then figure out which units will be dug. Archaeologists dig one unit at a time. Keeping track of specific measurements between artefacts and features gives archaeologists the ability to draw an overall map looking down on the site (called a floor plan), to get the bigger picture of the site.

Use-wear: Damage to the edges or working surfaces of tools sustained in use.

Ventral Surface: The surface of a flake created when it is removed and identified mainly by the presence of a ring crack.

Visibility: The degree to which the surface of the ground can be seen. This may be influenced by natural processes such as wind erosion or the character of the native vegetation, and by land-use practices, such as ploughing or grading. Visibility is generally expressed in terms of the percentage of the ground surface visible for a Project Area.

11 Appendices

11.1 Table of all Consultation Activities

Date	Consultation Type	OEH Requirements	Consultation Stage	Registered Aboriginal Party / Agency	Contact Person	Description
08/12/14	Letter	4.1.2	1	Hunter Local Land Services		Letter to Agency to identify Aboriginal parties
08/12/14	Letter	4.1.2	1	National Native Title Tribunal		Letter to Agency to identify Aboriginal parties
08/12/14	Letter	4.1.2	1	NTSCORP		Letter to Agency to identify Aboriginal parties
08/12/14	Letter	4.1.2	1	Office of Environment and Heritage		Letter to Agency to identify Aboriginal parties
08/12/14	Letter	4.1.2	1	Office of Registrar		Letter to Agency to identify Aboriginal parties
08/12/14	Letter	4.1.2	1	Singleton Council		Letter to Agency to identify Aboriginal parties
08/12/14	Letter	4.1.2	1	Wanaruah Local Aboriginal Land Council	Noel Downs	Letter to Agency to identify Aboriginal parties
16/12/14	Letter	4.1.2	1	NTSCORP		Forwarded information to known RAPs to contact United directly but did not provide contact details due to privacy policy
16/12/14	Letter	4.1.2	1	Hunter Local Land Services		No response to request for RAPs
16/12/14	Letter	4.1.2	1	National Native Title Tribunal		No response to request for RAPs
16/12/14	Letter	4.1.2	1	Wanaruah Local Aboriginal Land Council	Noel Downs	No response to request for RAPs
16/12/14	Email	4.1.2	1	Office of Environment and Heritage		Receiving information regarding RAPs
16/12/14	Letter	4.1.2	1	Office of Registrar		Receiving information regarding RAPs
08/01/15	Letter	4.1.2	1	Singleton Council		Receiving information regarding RAPs
13/01/15	Letter	4.1.7, 4.1.8	1	Lower Hunter Wonnarua Cultural Services	Thomas Miller	Aboriginal party registered an interest in United Wambo Project
16/01/15	Public Notice	4.1.3	1	All Registered Aboriginal Parties		Public Notice in Muswellbrook Chronicle Newspaper
16/01/15	Public Notice	4.1.3	1	All Registered Aboriginal Parties		Public Notice in Singleton Argus Newspaper
19/01/15	Letter	4.1.3, 4.1.4, 4.1.5, 4.2.1	1	All Registered Aboriginal Parties		Formal letter of interest for registration to 66 RAPs for the United Wambo Project, with a closure date of the 6 February 2015. Letter requesting registration of interest in the United Project information regarding project, Site briefing Meeting, United Induction session details
20/01/15	Email	4.1.7, 4.1.8	1	Ungooroo Cultural and Community Services	Rhonda Ward	Aboriginal party registered an interest in United Wambo Project
21/01/15	Public Notice	4.1.3	1	All Registered Aboriginal Parties		Public Notice in Hunter Valley News Newspaper
23/01/15	Email	4.1.7, 4.1.8	1	Jarban & Mugrebea	Les Atkinson	Aboriginal party registered an interest in United Wambo Project
28/01/15	Email	4.1.7, 4.1.8	1	A1	Carolyn Hickey	Aboriginal party registered an interest in United Wambo Project
28/01/15	Email	4.1.7, 4.1.8	1	Ungooroo Aboriginal Corporation	Allen Paget	Aboriginal party registered an interest in United Wambo Project
29/01/15	Email	4.1.7, 4.1.8	1	Huckada Dreamin Heritage Group	Richard Slater	Aboriginal party registered an interest in United Wambo Project
29/01/15	Letter	4.1.7, 4.1.8	1	Wanaruah Local Aboriginal Land Council	Noel Downs	Aboriginal party registered an interest in United Wambo Project
29/01/15	Email	4.1.7, 4.1.8	1	Widescope Indigenous Group	Amanda Hickey	Aboriginal party registered an interest in United Wambo Project
02/02/15	Email	4.1.7, 4.1.8	1	Bawurra Consultants	Kevin Sampson	Aboriginal party registered an interest in United Wambo Project
02/02/15	Email	4.1.7, 4.1.8	1	Culturally Aware	Tracey Skene	Aboriginal party registered an interest in United Wambo Project
02/02/15	Email	4.1.7, 4.1.8	1	Curindi Consultants	Rona Anne Slater	Aboriginal party registered an interest in United Wambo Project
02/02/15	Email	4.1.7, 4.1.8	1	Wallangan Cultural Services	Maree Waugh	Aboriginal party registered an interest in United Wambo Project
03/02/15	Email	4.1.7, 4.1.8	1	Amanda Hickey Cultural Services	Amanda Hickey	Aboriginal party registered an interest in United Wambo Project
03/02/15	Email	4.1.7, 4.1.8	1	Divine Diggers ACC	Gary Perkins	Aboriginal party registered an interest in United Wambo Project
03/02/15	Email	4.1.7, 4.1.8	1	JLC Cultural Services	Jenny-Lee Chambers	Aboriginal party registered an interest in United Wambo Project
04/02/15	Email	4.1.7, 4.1.8	1	Aboriginal Native Title Consultants	Margaret Matthews	Aboriginal party registered an interest in United Wambo Project
04/02/15	Email	4.1.7, 4.1.8	1	Gomery Cultural Consultants	David Horton	Aboriginal party registered an interest in United Wambo Project
04/02/15	Email	4.1.7, 4.1.8	1	Heilamon Cultural Consultants	Clifford Johnson	Aboriginal party registered an interest in United Wambo Project
04/02/15	Email	4.1.7, 4.1.8	1	Hunter Valley Aboriginal Corporation	Rhonda Griffiths	Aboriginal party registered an interest in United Wambo Project
04/02/15	Email	4.1.7, 4.1.8	1	Hunter Valley Cultural Consultants	Christine Archibald	Aboriginal party registered an interest in United Wambo Project
04/02/15	Email	4.1.7, 4.1.8	1	Upper Hunter Heritage Consultants	Darrel Matthews	Aboriginal party registered an interest in United Wambo Project
06/02/15	Email	4.1.7, 4.1.8	1	HSB Heritage Consultants	Patricia Hampton	Aboriginal party registered an interest in United Wambo Project
06/02/15	Email	4.1.7, 4.1.8	1	Lower Hunter Aboriginal Incorporated	Jill Green	Aboriginal party registered an interest in United Wambo Project
06/02/15	Email	4.1.7, 4.1.8	1	Lower Wonnaruah Tribal Consultantancy Pty Ltd	Barry Anderson	Aboriginal party registered an interest in United Wambo Project
06/02/15	Email	4.1.7, 4.1.8	1	Upper Hunter Wonnarua Council	Rhoda Perry	Aboriginal party registered an interest in United Wambo Project
06/02/15	Email	4.1.7, 4.1.8	1	Wattaka Wannarua	Des Hickey	Aboriginal party registered an interest in United Wambo Project
06/02/15	Email	4.1.7, 4.1.8	1	Wonnarua Cultural Heritage	Gordon Griffiths	Aboriginal party registered an interest in United Wambo Project
08/02/15	Meeting	4.2.1, 4.2.2	1	Wonnarua Traditional Custodians	Des Hickey	Meeting Wonnarua Traditional Custodians (WTC) to discuss the Scope of works for ACHA, project description and methodology for Arch survey
09/02/15	Email	4.1.7, 4.1.8	1	Wurrumay Consultants	Kerrie Slater	Aboriginal party registered an interest in United Wambo Project
09/02/15	Meeting	4.2.1, 4.2.2	1	Wonnarua Nation Aboriginal Corporation		Meeting Wonnarua Nation Aboriginal Corporation (WNAC) to discuss the Scope of works for ACHA, project description and methodology for Arch survey
13/02/15	Meeting	4.2.1, 4.2.2	2	Plains Clan of the Wonnarua People	Scott Franks	Meeting Plains Clan of the Wonnarua People (PCWP) to discuss the Scope of works for ACHA, project description and methodology for Arch survey
15/02/15	Email	4.1.7, 4.1.8	1	Wonn 1 Contracting	Arthur Fletcher	Aboriginal party registered an interest in United Wambo Project
17/02/15	Email	4.1.7, 4.1.8	1	Giwirr Consultants	Rodney Matthews	Aboriginal party registered an interest in United Wambo Project
17/02/15	Email	4.1.7, 4.1.8	1	Yinarr Cultural Services	Kathleen Steward Kinchella	Aboriginal party registered an interest in United Wambo Project
17/02/15	Meeting	4.2.2, 4.2.3, 4.2.4, 4.3.1	2	All Registered Aboriginal Parties		Public Meeting in Singleton - Project Description, Arc Survey Methodology Presented, CH Assessment scope delivered

17/02/15	Meeting	4.2.4	2	All Registered Aboriginal Parties		Site Tour - United Collieries
19/02/15	Letter	4.3.1, 4.3.2, 4.3.3	3	Wonnarua Nation Aboriginal Corporation	Laurie Perry	ACHAR Scope of Works mailed to WNAC
19/02/15	Letter	4.3.1, 4.3.2, 4.3.4	3	Plains Clan of the Wonnarua People	Scott Franks	ACHAR Scope of Works mailed to PCWP
19/02/15	Letter	4.3.1, 4.3.2, 4.3.5	3	Wonnarua Traditional Custodians	Des Hickey	ACHAR Scope of Works mailed to WTC
19/02/15	Letter	4.3.1, 4.3.2, 4.3.6	3	All Registered Aboriginal Parties		Draft Survey Methodology sent to RAPs
20/02/15	Email	4.1.7, 4.1.8	1	Hunter Traditional Owner Management Services	Paulette Ryan	Aboriginal party registered an interest in United Wambo Project
20/02/15	Email	4.1.7, 4.1.8	1	Myland Cultural & Heritage Group	Warren Schillings	Aboriginal party registered an interest in United Wambo Project
22/02/15	Email	4.1.7, 4.1.8	1	Hunter Valley Cultural Surveying	Luke Hickey	Aboriginal party registered an interest in United Wambo Project
27/02/15	Email	4.1.7, 4.1.8	1	AGA Services	Adam Sampson	Aboriginal party registered an interest in United Wambo Project
27/02/15	Email	4.1.7, 4.1.8	1	Hunters & Collectors of Aboriginal History	Tania Matthews	Aboriginal party registered an interest in United Wambo Project
05/03/15	Email	4.1.7, 4.1.8	1	Aliera French Trading	Aliera French	Aboriginal party registered an interest in United Wambo Project
05/03/15	Email	4.1.7, 4.1.8	1	Cacatua Culture Consultants	George Sampson	Aboriginal party registered an interest in United Wambo Project
06/03/15	Email	4.1.6	1	Office of Environment and Heritage		Email to OEH supplying the records of Registered Aboriginal Parties (RAPs) for the United Project.
06/03/15	Letter	4.1.6	1	Wanaruah Local Aboriginal Land Council	Noel Downs	Letter to WLALC supplying the records of Registered Aboriginal Parties (RAPs) for the United Project.
10/03/15	Email	4.1.7, 4.1.8	1	Bullen Bullen	Brent Matthews	Aboriginal party registered an interest in United Wambo Project
11/03/15	Letter	4.3.2, 4.3.4	3	Plains Clan of the Wonnarua People	Scott Franks	Proposal for PCWP to undertake United Project ACHAR
23/03/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
24/03/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
25/03/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
26/03/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
27/03/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
30/03/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
31/03/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
01/04/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
02/04/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
08/04/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
09/04/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
10/04/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
15/04/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
16/04/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
17/04/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
29/04/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
19/05/15	Letter	4.3.5	3	All RAPs		Survey summary report mail out to all parties
19/05/15	Letter	4.3.5	3	HVAC	Rhonda Griffiths	Survey summary report mail out to all parties
19/05/15	Letter	4.3.5	3	Plains Clan of the Wonnarua People	Scott Franks	Survey summary report mail out to all parties
19/05/15	Letter	4.3.5	3	Wanaruah Local Aboriginal Land Council	Noel Downs	Survey summary report mail out to all parties
19/05/15	Letter	4.3.5	3	Wonnarua Nation Aboriginal Corporation	Laurie Perry	Survey summary report mail out to all parties
19/05/15	Letter	4.3.5	3	Wonnarua Traditional Custodians	Des Hickey	Survey summary report mail out to all parties
19/05/15	Letter	4.3.5	3	All RAPs		Draft additional survey methodology mail out to all parties
19/05/15	Letter	4.3.5	3	HVAC	Rhonda Griffiths	Draft additional survey methodology mail out to all parties
19/05/15	Letter	4.3.5	3	Plains Clan of the Wonnarua People	Scott Franks	Draft additional survey methodology mail out to all parties
19/05/15	Letter	4.3.5	3	Wanaruah Local Aboriginal Land Council	Noel Downs	Draft additional survey methodology mail out to all parties
19/05/15	Letter	4.3.5	3	Wonnarua Nation Aboriginal Corporation	Laurie Perry	Draft additional survey methodology mail out to all parties
19/05/15	Letter	4.3.5	3	Wonnarua Traditional Custodians	Des Hickey	Draft additional survey methodology mail out to all parties
28/05/15	Meeting	4.3.3, 4.3.4, 4.3.5	3	Plains Clan of the Wonnarua People	Scott Franks	PCWP Cultural Values assessment site visit and meeting
28/05/15	Meeting	4.3.3, 4.3.4, 4.3.5	3	Wonnarua Traditional Custodians	Des Hickey	WTCNTAC Cultural Values assessment site visit and meeting
04/06/15	Letter	4.3.3, 4.3.4, 4.3.5	3	Community RAPs		Invitation to site tour and cultural values workshop for Community RAPs
18/06/15	Letter	4.3.1, 4.3.2	3	All RAPs		Draft test excavation methodology mail out
18/06/15	Letter	4.3.1, 4.3.2	3	HVAC	Rhonda Griffiths	Draft test excavation methodology mail out
18/06/15	Letter	4.3.1, 4.3.2	3	Plains Clan of the Wonnarua People	Scott Franks	Draft test excavation methodology mail out
18/06/15	Letter	4.3.1, 4.3.2	3	Wanaruah Local Aboriginal Land Council	Noel Downs	Draft test excavation methodology mail out
18/06/15	Letter	4.3.1, 4.3.2	3	Wonnarua Nation Aboriginal Corporation	Laurie Perry	Draft test excavation methodology mail out
18/06/15	Letter	4.3.1, 4.3.2	3	Wonnarua Traditional Custodians	Des Hickey	Draft test excavation methodology mail out
22/06/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
23/06/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
24/06/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area

08/07/15	Meeting	4.3.3, 4.3.4, 4.3.5	3	Community RAPs		Site tour and Workshop to determine the cultural values of the Project area
08/07/15	Letter		4	Plains Clan of the Wonnarua People	Scott Franks	Letter from PCWP commenting on draft test excavation methodology.
23/07/15	Letter	4.3.1, 4.3.2	4	Plains Clan of the Wonnarua People	Scott Franks	Letter responding to Tocumwal comments on the draft Test Excavation methodology.
27/07/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
28/07/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
29/07/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
30/07/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
31/07/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
01/08/15	Meeting	4.3.3, 4.3.4, 4.3.5	3	Wonnarua Nation Aboriginal Corporation	Laurie Perry	WNAC Cultural Values workshop and site visit at United
03/08/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
04/08/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
05/08/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
05/08/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
06/08/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
10/08/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
11/08/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
02/09/15	Meeting	4.3.3, 4.3.4, 4.3.5	3	Wonnarua Traditional Custodians	Des Hickey	WTCNTAC Cultural Values assessment site visit #2
17/09/15	Site Survey		3	All Registered Aboriginal Parties		Rostered Archaeology Survey with OzArk for Archaeological Values of the United Wambo Project disturbance area
25/09/15	Report	4.3.5, 4.3.6	3	Plains Clan of the Wonnarua People	Scott Franks	Draft Aboriginal Cultural Heritage Assessment Report received from PCWP
25/09/15	Report	4.3.5, 4.3.6	3	Wonnarua Nation Aboriginal Corporation	Laurie Perry	Draft Aboriginal Cultural Heritage Assessment Report received from WNAC
30/09/15	Letter	4.3.5	3	All RAPs		Sub Surface Survey program summary report mail out to all parties
30/09/15	Email	4.3.5	3	HVAC	Rhonda Griffiths	Sub Surface Survey program summary report mail out to all parties
30/09/15	Email	4.3.5	3	Plains Clan of the Wonnarua People	Danny Franks	Sub Surface Survey program summary report mail out to all parties
30/09/15	Letter	4.3.5	3	Wanaruah Local Aboriginal Land Council	Noel Downs	Sub Surface Survey program summary report mail out to all parties
30/09/15	Email	4.3.5	3	Wonnarua Nation Aboriginal Corporation	Laurie Perry	Sub Surface Survey program summary report mail out to all parties
30/09/15	Email	4.3.5	3	Wonnarua Traditional Custodians	Des Hickey	Sub Surface Survey program summary report mail out to all parties
16/10/15	Report	4.3.5, 4.3.6	3	Wonnarua Nation Aboriginal Corporation	Laurie Perry	Final Aboriginal Cultural Heritage Assessment Report received from WNAC
21/10/15	Report	4.3.5, 4.3.6	3	Plains Clan of the Wonnarua People	Scott Franks	Final Aboriginal Cultural Heritage Assessment Report received from PCWP
17/11/15	Letter	4.3.3	3	Community RAPs		Invitation to Cultural Heritage Impact Management and Mitigation Measures Workshop
25/11/15	Meeting	4.3.3, 4.3.4, 4.3.5, 4.3.6	3	Community RAPs		Cultural Heritage Impact Management and Mitigation Measures Workshop
08/01/16	Email	4.4.1, 4.4.2, 4.4.3	4	All Registered Aboriginal Parties		Email sent to all RAPs who had supplied an email address with link to download report
08/01/16	Letter	4.4.1, 4.4.2, 4.4.3	4	All Registered Aboriginal Parties		Letter and hard copy of report sent to all RAPs without a supplied email address
08/01/16	Letter	4.4.1, 4.4.2, 4.4.3	4	All Registered Aboriginal Parties		Letter sent to all RAPs for comment on draft Archaeology Report
20/01/16	Email	4.3.3	3	Wonnarua Traditional Custodians	Des Hickey	Email to WTC spokespersons informing of workshop
27/01/16	Letter	4.3.3	3	Wonnarua Traditional Custodians	Des Hickey	Letter to all RAPs aligned with WTC inviting to workshop
09/02/16	Phone Call	4.3.5, 4.3.7	3	Wonnarua Nation Aboriginal Corporation	Suzie Worth	Comments on Draft Archaeological Values Assessment Report received from WNAC
10/02/16	Email	4.3.5, 4.3.8	3	Plains Clan of the Wonnarua People	Scott Franks	Comments on Draft Archaeological Values Assessment Report received from PCWP
16/02/16	Meeting	4.3.3, 4.3.4, 4.3.5, 4.3.6	3	Wonnarua Traditional Custodians	Des Hickey	Workshop held at Singleton Bowling Club to discuss cultural values of project sites and potential mitigation and management measures.
16/02/16	Email	4.1.6	1	Office of Environment and Heritage		Email from OEH confirming receipt of RAPs for United Project
16/02/16	Email	4.1.7, 4.1.8	1	Kawal Cultural Services	Vicky Slater	Aboriginal party registered an interest in United Wambo Project
16/02/16	Email	4.1.7, 4.1.8	1	Lower Hunter Wonnarua Council Incorporated	Thomas Miller	Aboriginal party registered an interest in United Wambo Project
16/02/16	Email	4.1.7, 4.1.8	1	Plains Clan of the Wonnarua People	Scott Franks	Aboriginal party registered an interest in United Wambo Project
16/02/16	Email	4.1.7, 4.1.8	1	Smith Dhagaans Cultural Group	Tim Smith	Aboriginal party registered an interest in United Wambo Project
16/02/16	Email	4.1.7, 4.1.8	1	Wonnarua Nation Aboriginal Corporation	Laurie Perry	Aboriginal party registered an interest in United Wambo Project
16/02/16	Email	4.1.7, 4.1.8	1	Wonnarua Traditional Custodians	Zachary Laker	Aboriginal party registered an interest in United Wambo Project
23/02/16	Email	4.3.5, 4.3.7	3	Wonnarua Nation Aboriginal Corporation	Suzie Worth	Comments on Draft Archaeological Values Assessment Report received from WNAC
14/03/16	Email	4.3.5, 4.3.7	3	Plains Clan of the Wonnarua People	Scott Franks	Email to PCWP regarding comments on the draft Arch Report. PCWP was notified of intention for Peer Review to be undertaken.
14/03/16	Email	4.3.5, 4.3.7	3	Plains Clan of the Wonnarua People	Scott Franks	Email from PCWP responding to Peer Review recommendation.
04/04/16	Email	4.3.5, 4.3.7	3	Plains Clan of the Wonnarua People	Scott Franks	Email from PCWP regarding status of peer review and cultural values report.
18/04/16	Meeting	4.3.5, 4.3.7	3	Plains Clan of the Wonnarua People	Scott Franks	Meeting with PCWP to discuss comments on Arch report and the findings of the peer review.
29/04/16	Email	4.4.1, 4.4.2, 4.4.3	4	All Registered Aboriginal Parties		Email sent to all RAPs who had supplied an email address with link to download draft Aboriginal Cultural Values Assessment Report. 28 day comment period from 29 April until 27 May 2016.
29/04/16	Letter	4.4.1, 4.4.2, 4.4.3	4	All Registered Aboriginal Parties		Letter and hard copy of Aboriginal Cultural Values Assessment Report sent to all RAPs without a supplied email address. 29 April until 27 May 2016.
29/04/16	Letter	4.4.1, 4.4.2, 4.4.3	4	All Registered Aboriginal Parties		Letter sent to all RAPs for comment on draft Aboriginal Cultural Values Assessment Report. 28 day comment period from 29 April until 27 May 2016.
04/05/16	Email	4.4.2, 4.4.3	4	Hunters & Collectors of Aboriginal History	Tania Matthews	Email from RAP regarding the ability to comment on ACHAR despite not taking part in field works.
10/05/16	Email	4.4.2, 4.4.3	4	Hunters & Collectors of Aboriginal History	Tania Matthews	Email to RAP stating that all RAPs have ability to comment on ACHAR.
18/05/16	Email	4.4.2, 4.4.3	4	Wanaruah Local Aboriginal Land Council	Noel Downs	Email requesting hard copies of draft ACHAR

18/05/16	Letter	4.4.2, 4.4.3	4	Wanaruah Local Aboriginal Land Council	Noel Downs	Hard copy of ACHAR posted to WLALC as requested
24/05/16	Email	4.4.2, 4.4.3	4	All Registered Aboriginal Parties		Email to all RAPs reminding that the comment period for the ACHAR ends on 27 May.
25/05/16	Email	4.4.2, 4.4.3	4	Hunter Valley Aboriginal Corporation	Rhonda Griffiths	Email stating that in relation to providing comments on the ACHAR, that HVAC supports the WLALC.
26/05/16	Email	4.4.2, 4.4.3	4	Wanaruah Local Aboriginal Land Council	Noel Downs	Email asking for extension of comment period until 7 May.
26/05/16	Phone Call	4.4.2, 4.4.3	4	Plains Clan of the Wonnarua People	Scott Franks	Phone call to PCWP reminding to get comments in by 27 May. Extension of time was requested.
26/05/16	Phone Call	4.4.2, 4.4.3	4	Wonnarua Traditional Custodians	Des Hickey	Phone call to WTC reminding to get comments in by 27 May. Extension of time was requested.
27/05/16	Email	4.4.2, 4.4.3	4	All Registered Aboriginal Parties		Email to all RAPS extending comment period 7 days until 3 June 2016.
30/05/16	Email	4.4.2, 4.4.3	4	Wonnarua Nation Aboriginal Corporation	Laurie Perry	Email from WNAC stating that they have no issues with report and were supportive.C173A174:G174
01/06/16	Letter	4.4.2, 4.4.3	4	Plains Clan of the Wonnarua People	Scott Franks	Letter from PCWP commenting on ACHAR and peer review of Arch report.
07/06/16	Email	4.4.2, 4.4.3	4	Plains Clan of the Wonnarua People	Scott Franks	Email from PCWP following up on comments on ACHAR
07/06/16	Email	4.4.2, 4.4.3	4	Plains Clan of the Wonnarua People	Scott Franks	Email to PCWP responding to query. Response to comments on ACHAR will be coming soon.
12/07/16	Email	4.4.2, 4.4.3	4	Wonnarua Nation Aboriginal Corporation	Laurie Perry	Email from WNAC stating that they have no issues with report and were supportive.C173A174:G174
14/07/16	Meeting	4.4.2, 4.4.3	4	Plains Clan of the Wonnarua People	Scott Franks	Meeting with PCWP to discuss comments on ACHAR
18/07/16	Letter	4.4.2, 4.4.3	4	Plains Clan of the Wonnarua People	Scott Franks	Letter to PCWP responding to comments to ACHAR, and how their comments will be incorporated into the ACHAR
22/07/16	Email	4.4.2, 4.4.3	4	Plains Clan of the Wonnarua People	Scott Franks	Email from PCWP supporting recommendations for changes to ACHAR

11.2 List of 83 RAPs for the Project

RAP	Group
Adam McSweeney	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group
Adam Sampson	AGA Services
Aliera French	Aliera French Trading
Allen Paget	Ungooroo Aboriginal Corporation
Amanda Hickey	Amanda Hickey Cultural Services
Andrew Ferguson	Curindi Consultants
Andrew Jones	Jarban & Mugrebea
Andrews Hampton	Lower Hunter Aboriginal Incorporated
Annastazia Stocks	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group
Arthur Fletcher	Wonn 1 Contracting
Ashley Sampson	AGA Services
Barry Anderson	Lower Wonnaruah Tribal Consultantancy Pty Ltd
Blake Griffiths	Hunter Valley Aboriginal Corporation
Brent Matthews	Bullen Bullen
Briana Anne Matthews	Upper Hunter Heritage Consultants
Brodie Matthews	Hunters & Collectors of Aboriginal History
Carolyn Hickey	A1
Clifford Johnson	Heilamon Cultural Consultants
Colleen Stair	Giwirr Consultants
Danny Franks	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group
Darrel Matthews	Upper Hunter Heritage Consultants
David Ahoy	Lower Hunter Aboriginal Incorporated
David Horton	Gomery Cultural Consultants
Dean Creighton	Wanaruah Local Aboriginal Land Council
Deidre Perkins	Divine Diggers ACC
Des Hickey	Wattaka Wannarua
Geoffrey Sampson	Hunter Valley Aboriginal Corporation
George Sampson	Cacatua Culture Consultants
Georgina Berry	Upper Hunter Wonnarua Council
Gordon Griffiths	Wonnarua Cultural Heritage
Jacinda Wilkinson	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group
Jakub Czastka	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group
Jennifer Norfolk	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group
Jenny-Lee Chambers	JLC Cultural Services
Jill Green	Lower Hunter Aboriginal Incorporated
John Smith	Hunter Valley Cultural Consultants
John Matthews	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group
John Phillips	Lower Hunter Aboriginal Incorporated
Joshua Hickey	Wattaka Wannarua
Kathleen Stewart Kinchella	Yinarr Cultural Services
Kerrie Slater	Wurrumay Consultants
Kevin Sampson	Bawurra Consultants
Kylie Saunders	Hunter Valley Aboriginal Corporation
Laurie Perry	Wonnarua Nation/ Wonnarua People Native Title Group
Leanne Kirkman	Wanaruah LALC / HVAC
Les Atkinson	Jarban & Mugrebea
Lisa Joan Whalan	Yinarr Cultural Services
Luke Hickey	Hunter Valley Cultural Surveying
Malcolm Franks	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group
Maree Waugh	Wallangan Cultural Services
Margaret Matthews	Aboriginal Native Title Consultants
Maria Stocks	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group
Mary Franks	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group

Mathew Berry	Upper Hunter Wonnarua Council
Michael Rapley	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group
Michael Lester	Upper Hunter Heritage Consultants
Miranda Hipwell	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group
Noel Downs	Wanaruah Local Aboriginal Land Council
Patricia Hampton	HSB Heritage Consultants
Paulette Ryan	Hunter Traditional Owner Management Services
Rhonda Griffiths	Hunter Valley Aboriginal Corporation
Rhonda Ward	Ungooroo Cultural and Community Services
Richard Slater	Huckada Dreamin Heritage Group
Ricky Fields	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group
Robert Chapman	Upper Hunter Heritage Consultants
Robert Lester	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group
Robert Slater	Huckada Dreamin Heritage Group
Rodney Hickey	Kawal Cultural Services
Rodney Matthews	Giwirr Consultants
Rona Slater	Curindi Consultants
Scott Franks	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group
Shannon Griffiths	Wonnarua Cultural Heritage
Steven Hickey	Widescope Indigenous Group
Steven Verey	Tocumwal Pty Ltd on behalf of the Plains Clan of the Wonnarua People Native Title Group
Suzie Worth	Wanaruah Local Aboriginal Land Council
Tania Matthews	Hunters & Collectors of Aboriginal History
Thomas Chambers	JLC Cultural Services
Thomas Miller	Lower Hunter Wonnarua Cultural Services
Tim Smith	Smith Dhagaans Cultural Group
Tracey Skene	Culturally Aware
Warren Schilling	Myland Cultural & Heritage Group
Wayne French	Aliera French Trading
Zachary Laker	Wonnarua Traditional Custodians

11.3 Consultation Documentation

UNITED
COLLIERIES
GLENCORE

8 December 2014

Office of Environment and Heritage
Planning and Aboriginal Heritage Section
Locked Bag 914
COFFS HARBOUR NSW 2450

To whom it may concern

***Registration of Aboriginal Parties - Aboriginal Cultural Heritage Project at United Collieries
in the Upper Hunter Valley, NSW.***

Glencore and Peabody Energy have agreed to form a 50:50 Joint Venture to develop a brownfield open cut coal project located between the existing United and Wambo mines in the NSW Hunter Valley, approximately 16 kilometres west of Singleton. Glencore Coal Assets Australia Pty Limited, as manager of the Joint Venture, is seeking identification of any Aboriginal parties who may hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or places(s) in the vicinity of United Collieries as shown in Figure 1.

We are currently initiating consultation in accordance with the Office of Environment and Heritage *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* in relation to proposed open cut mining within the mining lease held by United Collieries.

If the Office of Environment and Heritage can identify and provide contact details for any known Aboriginal parties with a cultural interest in this area we will invite them to register their interest in being consulted regarding proposed open cut mining at United Collieries.

We would appreciate it if you could provide any feedback regarding these stakeholder groups by 9 January, 2015.

Kind Regards,



Aislinn Farnon
Approvals Manager
Glencore

Private Mail Bag 13, Singleton, NSW 2330
134 Jerrys Plains Road, Warkworth, NSW 2330
T + 61 2 6578 9500 F + 61 2 6578 9606 www.unitedcollieries.com.au
United Collieries Pty Limited ABN 67 001 990 209

GLENCORE



Figure 1 Location of United Collieries

Figure 11-1: Notification of project to OEH.

UNITED
COLLIERIES
GLENCORE

6 March 2015

Nicole Davis
Archaeologist – Planning
Hunter Central Coast Region
Office of Environment and Heritage
Level 2 117 Bull Street
Newcastle NSW 2300

Dear Nicole,

Glencore United Project – Registered Aboriginal Parties (RAPs)

As per the requirements of the DECCW guideline *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, Section 4.1.6 please find attached records of Registered Aboriginal Parties (RAPs) for the United Project.

As per *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* Section 4.1.3 and 4.1.6 please also find attached a copy of the public notice placed in the local newspapers as below and a copy of the correspondence sent to all known aboriginal parties.

- Singleton Argus: 16 January 2015
- Muswellbrook Chronicle: 16 January 2015
- Hunter Valley News: 21 January 2015

If you have any questions or would like any additional information, please don't hesitate to contact me on 0407 7323 686 or by email on Mathew.Goddard@glencore.com.au.

Kind Regards



Mathew Goddard
Approvals Coordinator
Glencore Coal Assets Australia

Private Mail Bag 13, Singleton, NSW 2330
134 Jerrys Plains Road, Warkworth, NSW 2330
T + 61 2 6578 9500 F + 61 2 6578 9506 www.unitedcollieries.com.au
United Collieries Pty Limited ABN 67 001 990 209

United Wambo Open Cut Coal Project

Company	First Name	Surname	Address Line 1	Address Line 2
AGA Services	Adam	Sampson	22 Ibis Parade	Woodberry NSW 2322
Aliera French Trading	Aliera	French	23B Gommeria Street	Blacksmith NSW 2285
Ungooroo Aboriginal Corporation	Allen	Page	12 Barton Ave	Singleton NSW 2330
Amanda Hickey Cultural Consultants	Amanda	Hickey	41 Dempsey Street	Emu Heights NSW 2750
Widescope Indigenous Group	Steven	Hickey	73 Russell Street	Emu Plains NSW 2750
Wonn 1 Contracting	Arthur	Fletcher	619 Main Road	Glendale NSW 2285
AGA Services	Ashley	Sampson	22 Ibis Parade	Woodberry NSW 2322
Lower Wonnarua Tribal Consultancy Pty Ltd	Barry	Anderson	156 The Inlet Road	Bulga NSW 2330
Hunter Valley Cultural Consultants	John	Matthews	16a Mahogany Crescent	Muswellbrook NSW 2333
Heilamon Cultural Consultants	Clifford	Johnson	77 Tobruk Avenue	Muswellbrook NSW 2333
Upper Hunter Heritage Consultants	Darrel	Matthews	14 Edinglassie Drive	Muswellbrook NSW 2333
Upper Hunter Heritage Consultants	Briana Anne	Matthews	14 Edinglassie Drive	Muswellbrook NSW 2333
Lower Hunter Aboriginal Incorporated	David	Ahoy	20 Mahogany Ave	Muswellbrook NSW 2333
Gomery Cultural Consultants	David	Horton	10 Scott Street	Muswellbrook NSW 2333
Wattaka Wannarua	Des	Hickey	4 Kennedy Street	Singleton NSW 2330
Wattaka Wannarua	Joshua	Hickey	4 Kennedy Street	Singleton NSW 2330
Divine Diggers ACC	Deidre	Perkins	6 Ashleigh Street	Heddon Greta NSW 2321
Cacatua Culture Consultants	George	Sampson	22 Ibis Parade	Woodberry NSW 2322
Wonnarua Cultural Heritage	Gordon	Griffiths	19 O'Donnell Crescent	Metford NSW 2323
Wonnarua Cultural Heritage	Shannon	Griffiths	2 Blaxland Street	East Maitland NSW 2323
Lower Hunter Aboriginal Incorporated	Jill	Green	6/1 Central St	Lambton
Yinarr Cultural Services	Kathleen	Stewart	111 Westwood Road	Gungah NSW 2333

		Kinchella		
Bawurra Consultants	Kevin	Sampson	23 Cunningham Street	Tamworth NSW 2340
Jarban & Mugreba	Les	Atkinson	2 Lachlan Street	Singleton NSW 2330
Hunter Valley Cultural Surveying	Luke	Hickey	10 Susan Street	Scone NSW 2337
Wallangan Cultural Services	Maree	Waugh	29 Anzac Avenue	Cessnock NSW 2325
Aboriginal Native Title Consultants	Margaret	Matthews	16a Mahogany Crescent	Muswellbrook NSW 2333
Wannarua Local Aboriginal Land Council	Noel	Downs	19 Maitland Street	Muswellbrook NSW 2333
Wannarua Local Aboriginal Land Council	Dean	Creighton	P2, 2 Shaw Crescent	Muswellbrook NSW 2333
Hunter Traditional Owner Management Services	Paulette	Ryan	157 Little Street	Muswellbrook NSW 2333
Upper Hunter Wannarua Council	Georgina	Berry	20 Sales Street	Greta
Hunter Valley Aboriginal Corporation	Blake	Griffiths	167 McMahon Way	Singleton NSW 2330
Hunter Valley Aboriginal Corporation	Rhonda	Griffiths	19 Woollybutt Way	Muswellbrook NSW 2333
Hunter Valley Aboriginal Corporation	Kylie	Saunders	7 Boronia Drive	Muswellbrook NSW 2333
Ungooroo Cultural and Community Services	Rhonda	Ward	8 Blaxland Avenue	Singleton NSW 2330
Huckada Dreamin Heritage Group	Richard	Slater	121 Robert Street	Tamworth NSW 2340
Huckada Dreamin Heritage Group	Robert	Slater	121 Robert Street	Tamworth NSW 2340
Giwirr Consultants	Colleen	Stair	8 Acacia Drive	Muswellbrook NSW 2333
Tocomwall Pty Ltd	Scott	Franks	PO Box 76	Caringbah NSW 1495
Tocomwall Pty Ltd	John	Phillips	14 Duramana Road	Eglington NSW 2795
Tocomwall Pty Ltd	Michael	Lester	10 Salisbury Street	Botany NSW
Tocomwall Pty Ltd	Danny	Franks	53 Forest Road	Miranda NSW 2228
Tocomwall Pty Ltd	Ricky	Fields	19 Moomin Street	Lora Park NSW
Tocomwall Pty Ltd	Jennifer	Norfolk	123 Burraneer Bay Road	Cronulla NSW

United Wambo Open Cut Coal Project

Tocomwall Pty Ltd	Robert	Lester	49 Gibbes Street	Regentville NSW 2745
Tocomwall Pty Ltd	Jacinda	Wilkinson	8 Blaxland Avenue	Singleton NSW 2330
Tocomwall Pty Ltd	Rhonda	Ward	8 Blaxland Avenue	Singleton NSW 2330
Tocomwall Pty Ltd	Mary	Franks	6 Wills Close	Singleton NSW 2330
Tocomwall Pty Ltd	Adam	McSweeney	25 Hunter Street	Singleton NSW 2330
Tocomwall Pty Ltd	Malcolm	Franks	6 Hume Close	Singleton NSW 2330
Tocomwall Pty Ltd	Steven	Verey	1 Tindale Steet	Muswellbrook NSW 2333
Tocomwall Pty Ltd	Maria	Stocks	10 Tulloch Close	Singleton NSW 2330
Tocomwall Pty Ltd	Annastazia	Stocks	10 Tulloch Close	Singleton NSW 2330
Hunters & Collectors	Tania	Matthews	2/23 Reid Street	Narrabri NSW 2390
Lower Hunter Wonnarua Cultural Services	Thomas	Miller	51 Bowden Street	Heddon Greta NSW 2321
Culturally Aware	Tracey	Skene	7 Crawford Place	Milfield NSW 2325
Kawal Cultural Services	Rodney	Hickey	33 Gardner Circuit	Singleton NSW 2330
Myland Cultural & Heritage Group	Warren	Schilling	30 Taurus Street	Elemore Vale NSW 2287
JLC Cultural Services	Jenny-Lee	Chambers	39 Goulburn Drive	Sandy Hollow NSW 2333
Curindi Consultants	Andrew	Ferguson	71 Robert Street	Tamworth NSW 2330
Wanaruah Local Aboriginal Land Council	Suzie	Worth		
Upper Hunter Heritage Consultants	Robert	Chapman	5 Dangar Place	Muswellbrook NSW 2333
Curindi Consultants	Rona	Slater	71 Robert Street	Tamworth NSW 2330
Hunter Valley Aboriginal Corporation	Geoffery	Sampson	9/41A Brentwood Street	Muswellbrook NSW 2333
Wanaruah LALC / HVAC	Leanne	Kirkman	10 Scott Street	Muswellbrook NSW 2333
A1	Carolyn	Hickey	73 Russell Street	Emu Plains, 2750
Upper Hunter Wonnarua Council	Mathew	Berry	20 Sales Street	Greta
	Michael	Rapley	7 Dangar Place	Muswellbrook 2333
Yinarr Cultural Services	Lisa Joan	Whalan	11 Goulburn Drive	Sandy Hollow 2333

Lower Hunter Aboriginal Incorporated	John	Smith	797 Main Road	Edgeworth
Lower Hunter Aboriginal Incorporated	Andrews	Hampton	7 Yurla Close	Toronto West

Figure 11-2: List of persons who registered for the project as at 6th March 2015.

11.3.1 Public Notices

GLENCORE

Public Notice
**Cultural Heritage Management
at United Collieries**

Invitation for expressions of interest and registration for consultation to inform an Aboriginal Cultural Heritage Assessment with United and Wambo Joint Venture.

The mining complex known as United Collieries is located within the Hunter coalfields in the Upper Hunter Valley of NSW, approximately 16 kilometres west of Singleton.

Aboriginal people or other parties who hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) in the vicinity of United Collieries are invited to participate in consultation regarding proposed open cut mining operations. The project will involve the construction of a new open cut mining operation within land owned by the United and Wambo Joint Venture. The purpose of the consultation is to enable assessment of Aboriginal Cultural Heritage associated with the proposed open cut mine.

Aboriginal people or other parties who wish to register their interest in this process of community consultation regarding United Collieries must respond in writing and include your name/organisation, contact details including address and phone numbers and send to Mat Goddard by 6th February 2015.

All registered people or parties will be contacted to discuss the proposed project and consultation opportunities to inform the Aboriginal Cultural Heritage Assessment.

Mat Goddard
Approvals Coordinator
Glencore
PMB 13 Singleton NSW 2330
Fax: +61 2 65 744 606
Email: Mathew.Goddard@glencore.com.au

Figure 11-3: Public Notice.

11.32 Information Session (17th February 2015)



Welcome to Country

Acknowledgement of Country

The United Team would like to acknowledge the Traditional Owners of the area – the Wonnarua people – and pay respect to their cultural heritage, beliefs and continuing relationship with the land.

We pay respect to the Elders, both past and present, for they hold the memories, traditions, culture and hopes of Aboriginal people in the area.

Agenda

1	Project Overview <ul style="list-style-type: none">• History of United and Wambo• Joint Venture• Key Aspects• Infrastructure• Approval Timeline	6	General Business <ul style="list-style-type: none">• Questions• Payment for work• Contractual Obligations
2	United Project Team <ul style="list-style-type: none">• Key Project Personnel• Archaeological Team – Ozark• Cultural Values Assessment Team – ACHM	7	Site Tour <ul style="list-style-type: none">• Directions• Timing
3	United Aboriginal Cultural Heritage Assessment (ACHA) <ul style="list-style-type: none">• Assessment area• Key Features• Site Characteristics• Timing	8	Lunch
4	Archaeological Assessment Methodology Jodie Benton Ozark <ul style="list-style-type: none">• Overview• Methodology• Rostering		
5	Cultural Values Assessment Dr Shaun Canning ACHM <ul style="list-style-type: none">• Overview• Scope• Methodology• Timing		



Location



GLENCORE 5

United Collieries

- From 1989 until 2006, product coal was transported from United by road along the Golden Highway to the Mount Thorley Coal Loader
- With the construction of the Wambo rail spur and loop in 2006, product coal from United was transported to the Wambo rail load-out facility initially via the Golden Highway and then via an internal haul road
- Xstrata Coal (now Glencore) announced in 2009 that United would mine the last of the currently approved economically recoverable underground reserves in the Woodlands Hill Seam within CCL775 with the completion of Longwall 10
- Following the completion of Longwall 10 in March 2010, the United site entered into a period of Suspension of Operations and commenced exploration and pre-feasibility works for future mining potential

GLENCORE

United Collieries

- An Authorisation to Prospect was granted over the area in 1980
- From July 1989 until July 1992, United operated an open cut and auger mining operation extracting from the Whynot and Wambo seams
- In 1991, a resource swap was affected with the neighbouring Wambo Coal Pty Ltd (Wambo) mine, which enabled Wambo to secure greater open cut reserves and United to secure greater underground reserves
- Underground mining operations commenced at United in January 1992 within the Woodlands Hill seam
- In May 2002, longwall mining was implemented at United

GLENCORE

Wambo Mine

- Wambo Coal Mine was granted development consent by Patricks Plains Council in 1969. Subsequent development consents were issued in 1972, 1974 and 1977 covering a range of early open cut and underground operations
- An extension to mining activities and facilities were granted by Singleton Council (SC) in 1980 and 1991
- In 1992 after SC granted further development consent for open cut and underground operations, the open cut operated between 1993 and 1999. Operations were temporarily suspended in 1999 before reopening in August 2001 with production at 1 Mtpa

GLENCORE

Wambo Mine

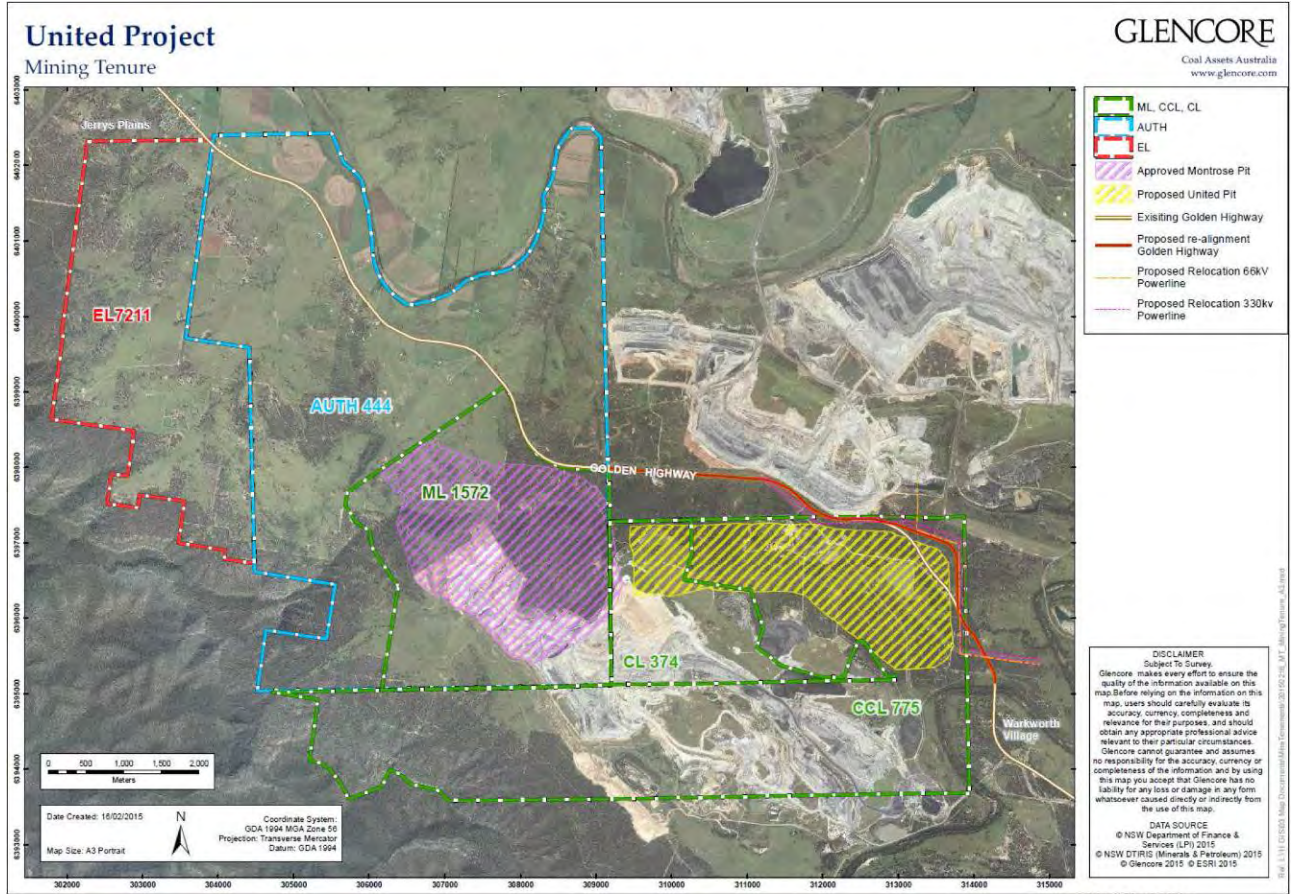
- Underground operations at the Homestead Underground Mine commenced in 1979 until cessation in 1999. Production at the Wollemi Underground Mine commenced in 1997 and entered into care and maintenance in October 2002. At that time the open cut operations were expanded to maintain overall production of 4Mtpa
- In 2003 the Department of Urban Affairs and Planning approved the expansion of the open cut to the north west and the underground mine. The underground expansion consisted of longwall mining in the Wambo Seam; three longwalls accessed from the open cut highwall in the Whybrow seam; as well as portal and drift access for longwall mining in the Arrowfield and Bowfield seams

GLENCORE

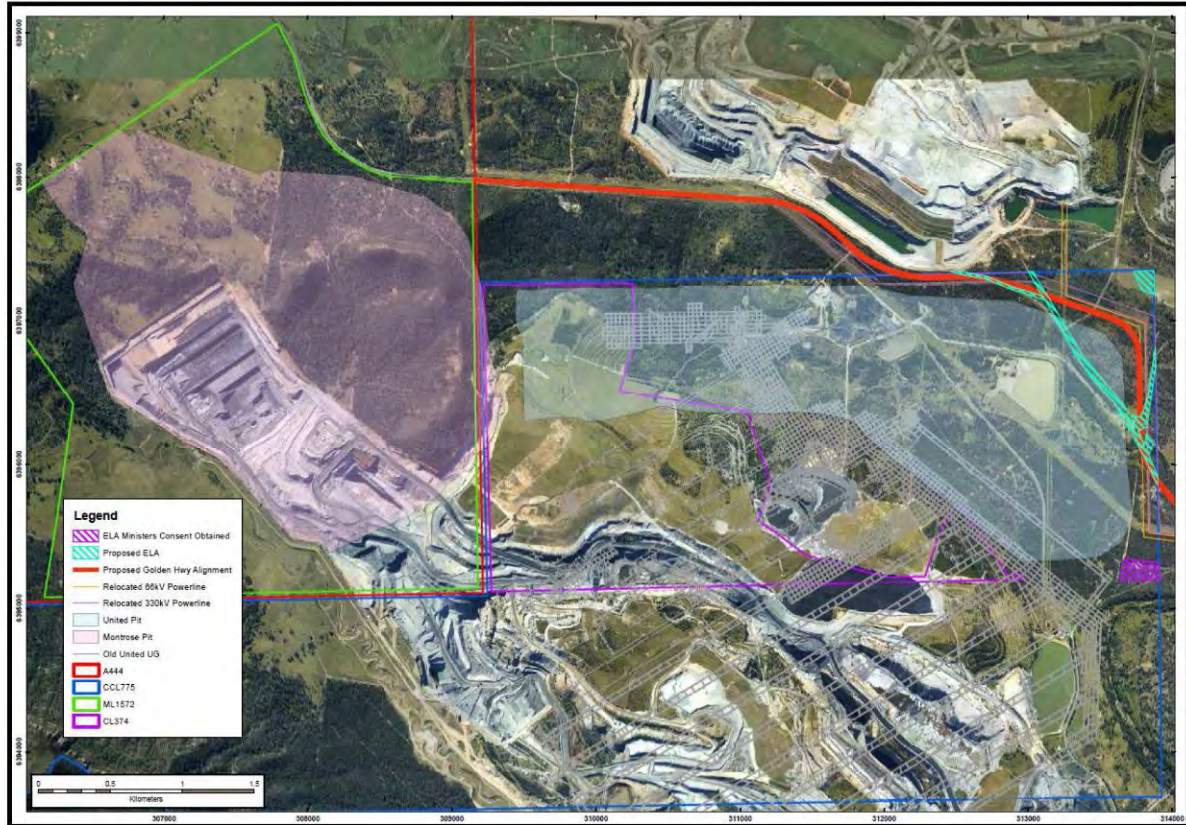
Glencore & Peabody Joint Venture

- 50:50 production Joint Venture between United (Glencore) & Wambo (Peabody)
 - Glencore manager of joint venture
- Joint development of lease areas owned by Wambo and United
 - excludes Wambo UG operations to the south of the JV tenement area
- Removes constraints from surface boundaries and stratified leases
 - *Maximises resource recovery by merging leases enabling extraction of approx 100Mt saleable coal over 20+ years*
- Utilising spare capacity in Wambo CHPP & rail loop
 - Wambo retain management and ownership of CHPP and rail loop (toll wash)
- JV expected to commence mid 2017, subject to approvals for proposed United open cut
 - *Immediate focus on existing Wambo open cut and proposed United open cut*
 - *Manage both pits to produce 6Mtpa saleable coal*
 - *Concept planning continuing for other lease areas*

GLENCORE



GLENCORE



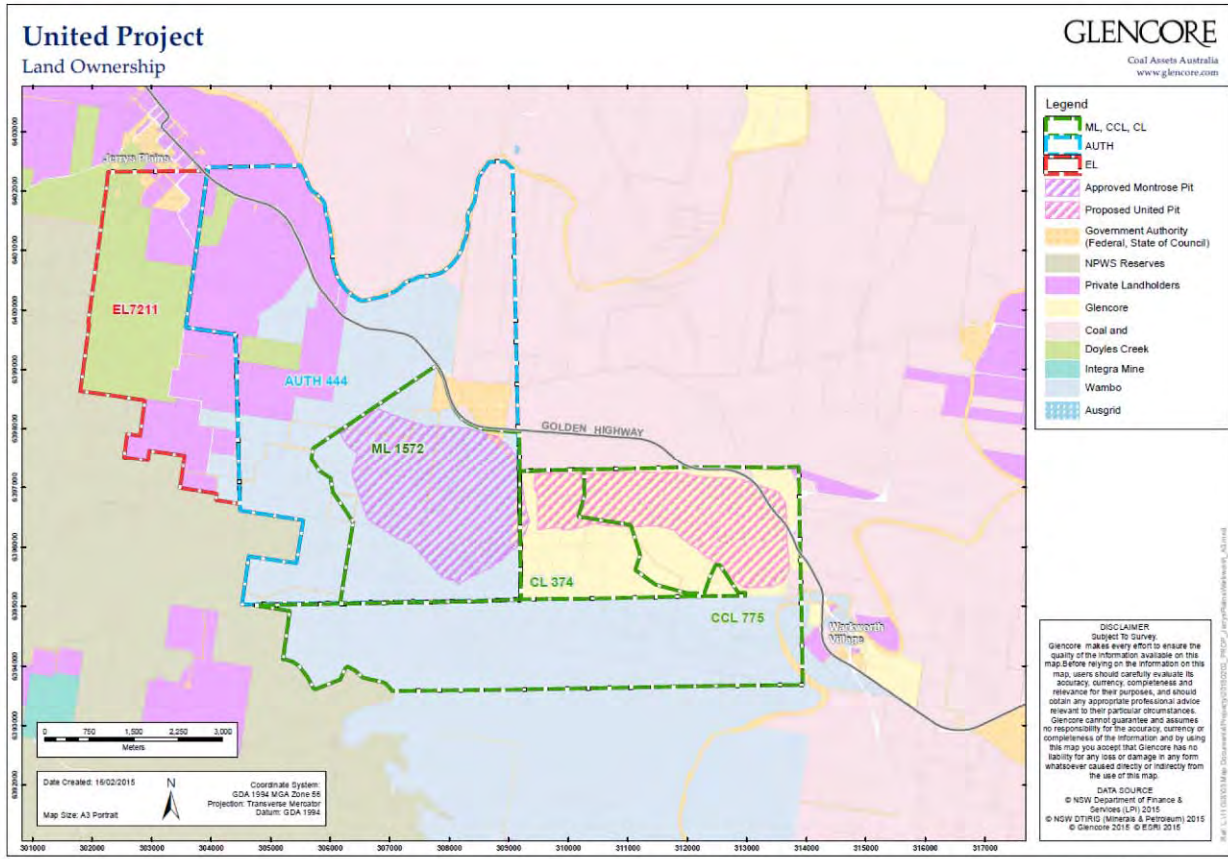
GLENCORE

Key Aspects

- New open cut pit
- Use of existing United Collieries facilities for first 4 years
- Relocation of Infrastructure
 - 330kV powerlines
 - 66kV and 11kV powerlines
 - Golden Highway
- Employment of up to 150 new people in full time positions
- Upgrade of Wambo Mine Infrastructure Area to cater for extra equipment and people
- Use existing Wambo CHPP and rail loop
- Wambo underground remains separate

Prefeasibility Studies

- Since 2008 investigations have been undertaken to assess the resource and environmental constraints at United Collieries
- Considerable work was completed as part of prefeasibility studies to understand key environmental aspects, including:
 - air quality
 - noise and vibration
 - Aboriginal Heritage
 - Shared Heritage
 - surface and groundwater management
 - biodiversity, including identification of possible offset properties
 - soils, land use and agriculture
 - traffic and transport
 - greenhouse gas and energy
 - mine closure, including geochemistry



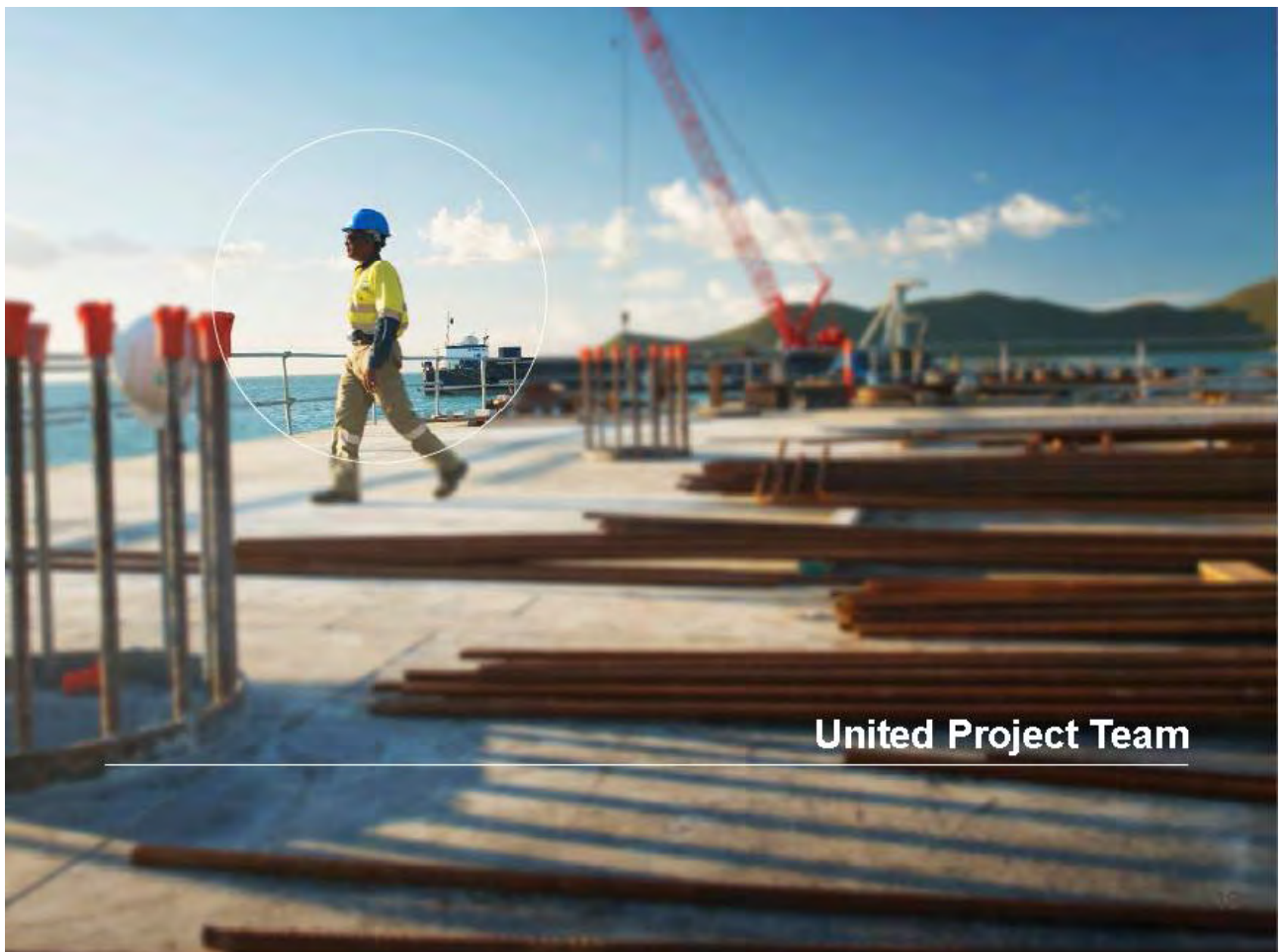
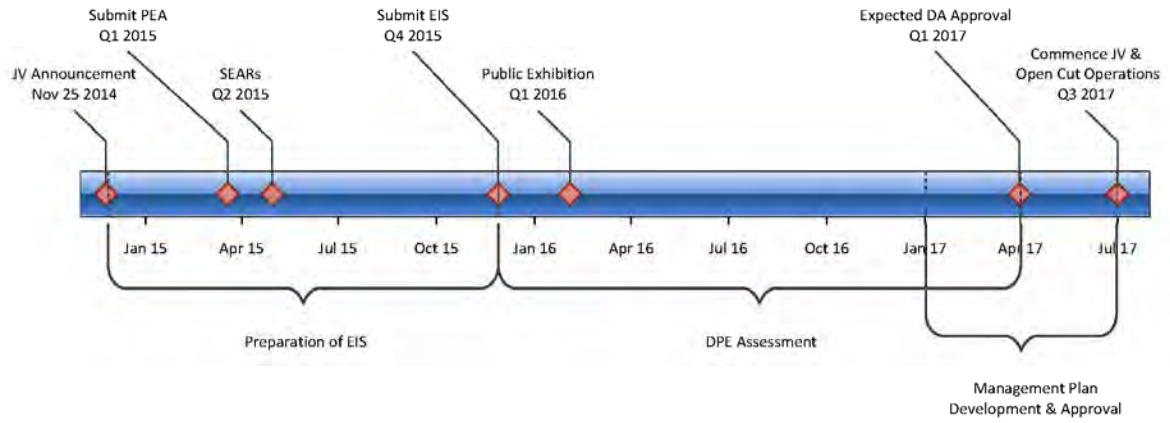
GLENCORE

Environmental Impact Statement - Consultants

Project Management (EIS Studies)	Umwelt
Aboriginal Archaeology	OzArk
Aboriginal Cultural Heritage	Australian Cultural Heritage Management
European Archaeology	Umwelt
Traffic and Transport	Transport and Urban Planning
Air Quality	Jacobs
Noise	Umwelt
Groundwater	AGE
Surface Water	Umwelt
Agricultural Assessment & Ecology	Umwelt
Blasting	Enviro Strata Consulting
Visual & Mine Closure	Umwelt
Greenhouse Gas and Energy	Umwelt
SIA & Stakeholder Engagement	Umwelt
Economic Assessment	Deloitte

GLENCORE

Approvals Timeline



United Project Team

Glencore United Project Team:

- Gary Wills: United Project Manager
- Aislinn Farnon: Approvals Manager
- Mat Goddard: Approvals Coordinator

Glencore Coal Assets Australia

- Bret Jenkins: Approval and Cultural Heritage Manager NSW

Archaeological Assessment Team

OzArk Environmental and Heritage Management Pty Ltd (OzArk)

- Dr Jodie Benton: OzArk Director, Project Manager
- Ben Churcher: Principal Archaeologist
- Nick Harrop: Senior Archaeologist
- Jennifer Bertolani, Morgan Wilcox & Stephanie Rusden: Project Archaeologists

Cultural Values Assessment Team

Australian Cultural Heritage Management Pty Ltd (ACHM)

- Dr Shaun Canning: Project Manager / Principal heritage Advisor

GLENCORE

Aboriginal Cultural Heritage Assessment (ACHA)

• Project Environmental Impact Assessment

- Assesses the potential impacts of the proposed operations on:
 - Biodiversity
 - Ecological Values
 - Water
 - Agricultural
 - Social Impacts
 - Economical
 - **Aboriginal and Cultural Heritage**

• Aboriginal and Cultural Heritage Assessment (ACHA)

The United Project will be undertaking an Aboriginal Cultural Heritage Assessment (ACHA) process that is consistent with:

- Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC 2005)
- Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010)
- Burra Charter (Australia ICOMOS 2013)
- Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011)
- **The Aboriginal and Cultural heritage assessment program is open to all registered Aboriginal parties (RAPs)**
- **Registered Aboriginal Parties must either:**
 - Identify as a Wonnarua Person; and / or
 - Live as a local resident in the Upper Hunter, Muswellbrook or Singleton LGA

GLENCORE 21

Aboriginal Cultural Heritage Assessment (ACHA)

• Aboriginal and Cultural Heritage Assessment (ACHA)

- *Archaeological Values Assessment*
- *Cultural Values Assessment*

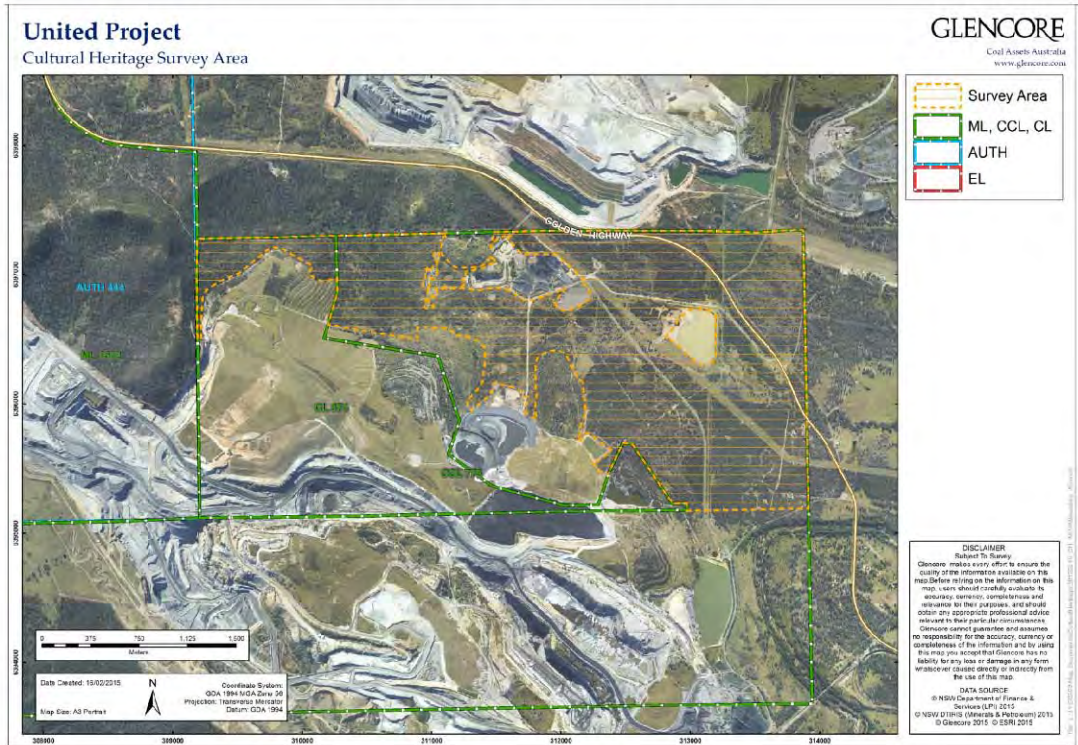
- This approach to the ACHA is similar to the approach taken at the Mount Owen Continued Operations (MOCO) project and the Bulga Optimisation Project (BOP) assessment phases

- The Archaeological Values Assessment will be undertaken by **OzArk Environmental and Heritage Management** in conjunction with the United Project RAPs

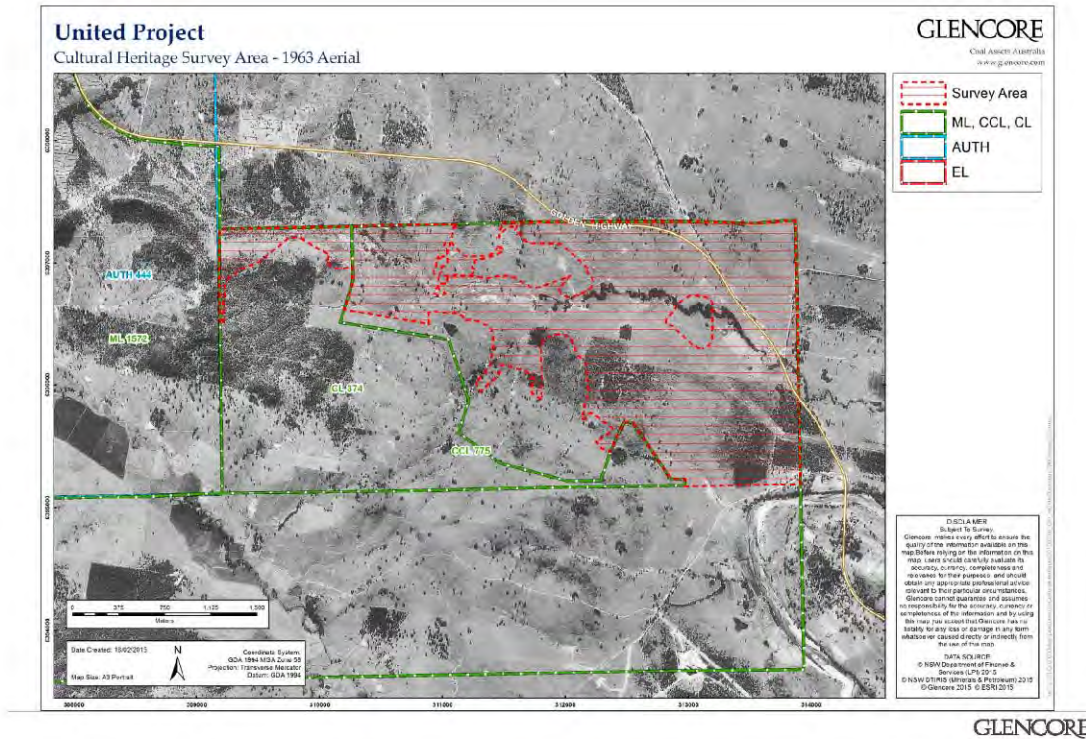
- The Cultural Values Assessment will be undertaken by **Australian Cultural Heritage Management** in conjunction with the United Project RAPs and knowledge holder groups.

- The two assessments will contribute to an integrated Aboriginal Cultural Heritage Report as a component of the project EIS.

United Project – Assessment Area (500ha)



United Project – Assessment Area (1963)



Archaeological Values Assessment

- The Archaeological Values Assessment will be completed by Ozark in conjunction with the Registered Aboriginal Parties (RAPs) for the United Project and will involve
 - Scoping
 - Archaeological Survey and test Excavation Methodology Preparation
 - Archaeological Survey
 - Summary of Findings
 - Subsurface Archaeological Survey
 - Summary of Findings
 - Development of the Archaeological Values Assessment Report – For inclusion in the EIS
- The Archaeological Values Assessment is conducted to identify Cultural artefacts present within the project area and assist in determining the cultural value of identified sites within the project area
- The Archaeological Values Assessment involves surface field survey of the project area with the project Archaeologists and RAPs to identify artefacts and cultural values within the project area.
- A subsurface field survey will follow with test excavation of a number of sites identified for further investigation.
- A summary of the findings will be made available to RAPs to inform the Cultural Values Assessment
- An Archaeological Values Assessment Report will be completed for inclusion within the Project EIS

Cultural Values Assessment

- The Cultural Values Assessment Report is completed so that the significance of the project area can be identified and captured as part of the EIS
- The cultural values identified and their significance with respect to the RAPs understanding is captured and the cultural heritage impacts and issues of intra and inter-generational equity are understood
- The Cultural Values Assessment also aims to use the cultural values and cultural considerations determined through this process to make recommendations on the protection, salvage and/or mitigation of cultural heritage values within the project area.

- Cultural Values Assessment will be completed by ACHM in conjunction with all Registered Aboriginal Parties (RAPs) for the United Project, and will involve:
 - *Scoping*
 - *Knowledge Holder Engagement*
 - *Project area assessment*
 - *RAP Cultural Values workshops*
 - *Knowledge Holder Assessment Reports*
 - *Development of the RAP Cultural Values Assessment Report*
 - *Integration of the Knowledge Holder Assessment Reports and the RAP Assessment Reports into the Project EIS*

Key Dates

Project Overview

- Community Information Session: 17th February 2015
- Site Tour: 17th February 2015

Survey Fieldwork

- United Induction 1: 10th March 2015
- United Induction 2: 11th March 2015
- United Induction 3: 12th March 2015
- Glencore Generic Induction: TBC (March 2015)
- Surface Field Survey: 23rd March 2015
- Test Excavation Survey: May 2015 – TBC post surface survey

Cultural Values Assessment

- RAP consultation – March / April 2015
- RAP Cultural Values Workshops June / July 2015

Documentation

- Knowledge Holder Cultural Heritage Assessment Reports: August & September 2015
- Archaeological Assessment Report: September 2015
- Cultural Values Assessment Report: October 2015
- Integrated Aboriginal Cultural Heritage Assessment Report: November 2015
- Aboriginal Cultural Heritage Assessment Report – Review and Comments: December 2015

Registration of Interest and Payment for Works

• Registration of Interest

- All persons wanting to register interest in the United Project must complete a registration of Interest form
- Registration from groups must provide individual member details so they can be included in the roster and scheduled for work
- Forms were provided in initial invitation letter
- Spare copies of these forms are available from Mat Goddard or can be filled out today
- All those wishing to complete site work must have a Generic Glencore Induction as well as a United Collieries site induction
- 3 site inductions have been scheduled for March (no others are available before field survey commences):
 - Tuesday 10th March
 - Wednesday 11th March
 - Thursday 12th March
- Those requiring a Generic Glencore Induction will be contacted and scheduled for an upcoming induction – **dates TBC**.

• Payment for Works

- Payments will be made as per the Umbrella Agreements in place with the following groups:
 - Plains Clans of the Wonnarua People (PCWP)
 - Wonnarua Nation Aboriginal Corporation (WNAC)
 - Wonnarua traditional Custodians (WTC)
 - Hunter Valley Aboriginal Corporation (HVAC)

Works:

- Induction attendance
- Archaeological Fieldwork
- Attendance and input at ACHA workshops (Cultural Values Assessment)

Rostering

- The United Project field survey roster will be completed as per the Umbrella agreements in place with the 4 groups:
 - Plains Clans of the Wonnarua People (PCWP)
 - Wonnarua Nation Aboriginal Corporation (WNAC)
 - Wonnarua Traditional Custodians (WTC)
 - Hunter Valley Aboriginal Corporation (HVAC)
- The United Project field survey roster will be developed to maintain a fair system and fair distribution of work amongst RAPs
- Each above group will have one Field Coordinator attend each day
- The remaining field workers required for that day will be made up from a selection from the roster of the remaining RAPs registered for field work
- A fieldworker cannot be sent 'on someone else behalf'
- United Project will attempt to work in conjunction with the Bulga Optimisation Project (BOP) and any other **Glencore** Project that may coincide with a field survey at United
- **Surface Survey:** 2-3 weeks approximately
- **Test Excavation:** 2-3 weeks - TBC post surface survey

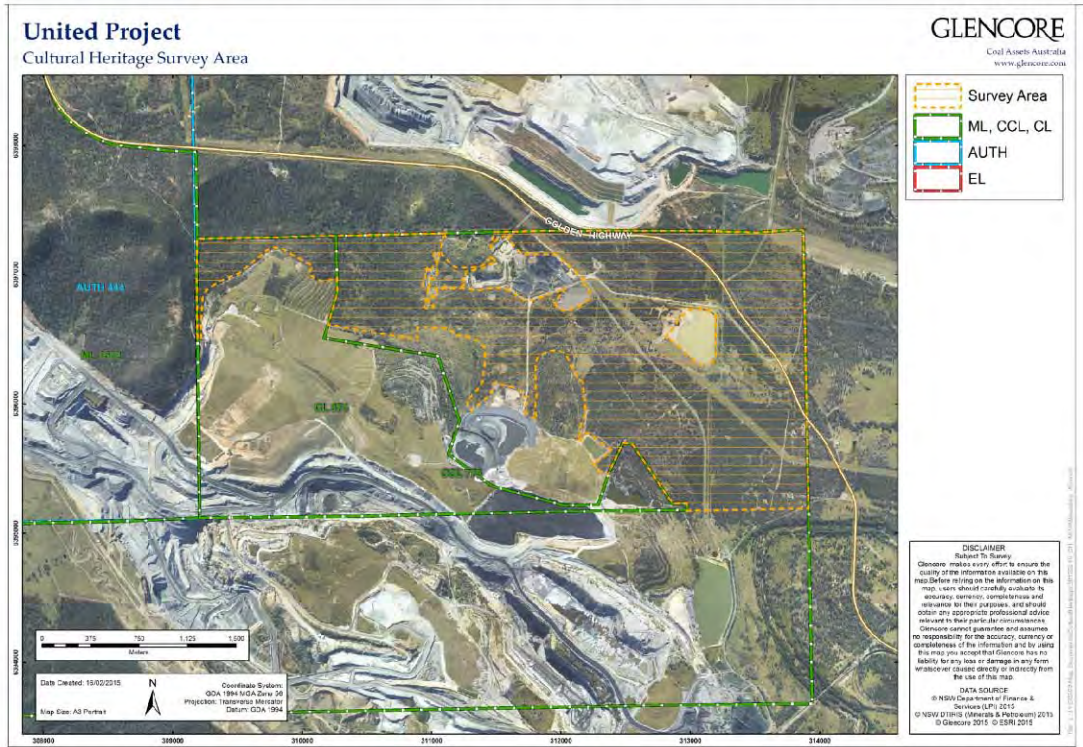


Archaeological Assessment – Overview

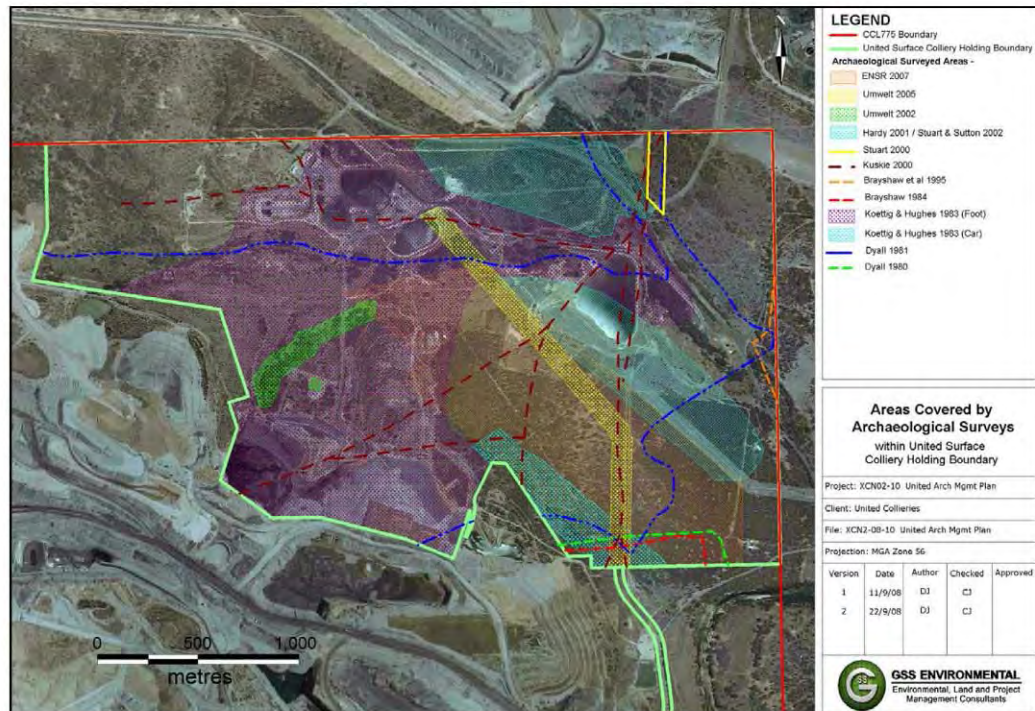
- Dr Jodie Benton
- OzArk Environment and Heritage Management



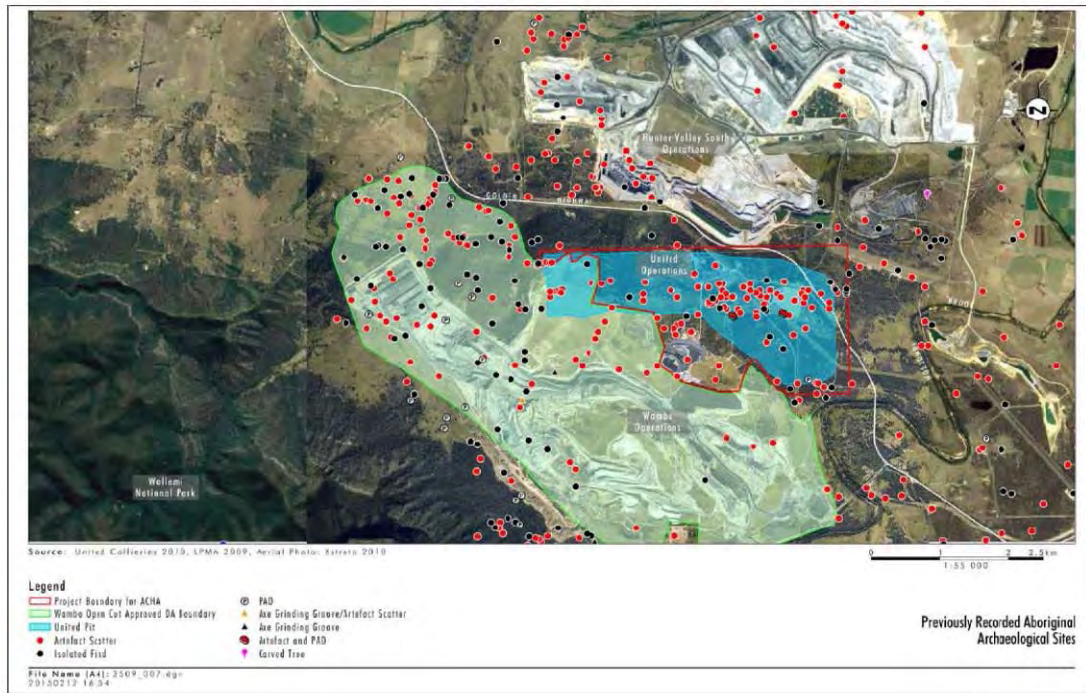
Archaeological Assessment – Impact Footprint



Archaeological Assessment - Previous archaeological surveys



Archaeological Assessment - Previously recorded archaeological sites



Archaeological Assessment – Redbank Creek

- Redbank Creek and its tributary system are known to be associated with a large number of previously recorded sites. The archaeology and Aboriginal cultural significance of this area is considered by the Project's lead Environmental Consultant to be fairly well understood. The area has previously been assessed as having high significance to participating Aboriginal parties and varying levels of archaeological significance based on site contents and integrity (Umwelt 2002, 2005; ENSR 2008). The most significant sites to date have been recorded along the main channel of Redbank Creek.
- In addition to the survey and assessment results, a number of academic archaeological studies have occurred in relation to Redbank Creek stone artefact assemblages (Hiscock: 1984a, 1984b, 1986, 1993). This shows Redbank Creek as a well known location in the archaeological community and increases the perceived archaeological significance of this location.

Archaeological Assessment – Proposed Methodology

- The archaeological methods employed for the proposed Project will follow the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) and the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011).
- Some of the Project Area has already undergone archaeological assessment in the past. Many of the previously recorded sites have already had Section 90 impact permits enacted over them.
- The methods for investigating areas not previously assessed will differ slightly from those areas that have been assessed in the past.
- In general, this archaeological assessment will:
 1. Evaluate the archaeological potential of landforms within the proposed Project footprint;
 2. Attempt to reassess any previously recorded sites that are thought to remain intact within the proposed Project footprint; and
 3. Record any previously unrecorded Aboriginal sites that may be found as a result of the survey.

Archaeological Assessment – Proposed Methodology

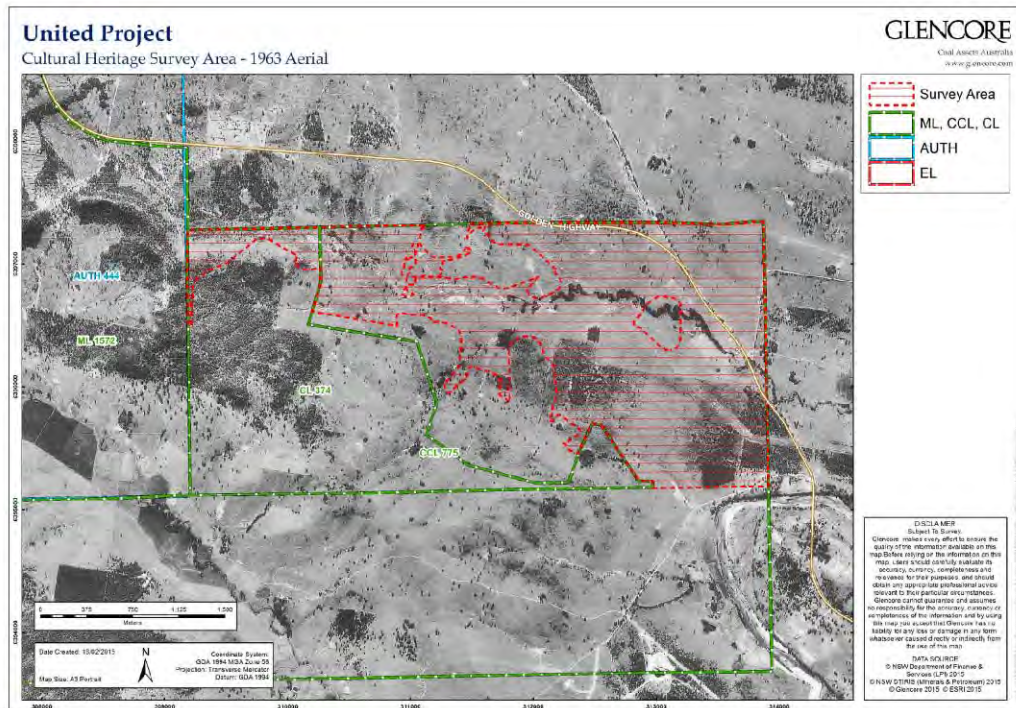
- Standard archaeological field survey and recording methods will be employed in this assessment (Burke & Smith 2004).
- The field assessment will be undertaken over the entire disturbance footprint. This assessment will include a buffer of at least 50 metres around the outside of the proposed Project disturbance footprint (where possible and warranted) and will include the re-visiting and re-recording of any previously recorded sites.
- It is envisioned that fieldwork for the survey would commence in March 2015. It is estimated that there will be approximately three weeks of field survey.
- The survey will take the form of pedestrian transects and will cover the entire disturbance footprint. This includes areas that are previously unassessed and areas with potentially high archaeological values (such as the in the vicinity of the Redbank Creek).

Archaeological Assessment – Proposed Methodology

This intensive survey coverage will include:

- Pedestrian field survey to identify and record any Aboriginal archaeological sites within the landscape, and to record any areas that may have potential to have subsurface Aboriginal artefacts.
- Wherever possible in any unsurveyed areas, field survey will be conducted in transects of 50 metre intervals (with up to ten recorders spaced five metres apart). If field conditions do not allow straight transects some areas may be investigated more opportunistically where exposures and/or vegetation allow. This will be to assess previously unassessed areas in detail.
- If areas have significant levels of ground cover and pedestrian survey is considered by the archaeologist and RAP representatives to yield no results, then assessment will be made as to the potential of the area to have Aboriginal artefacts. This will be based in part on knowledge gained from past archaeological research in the area.

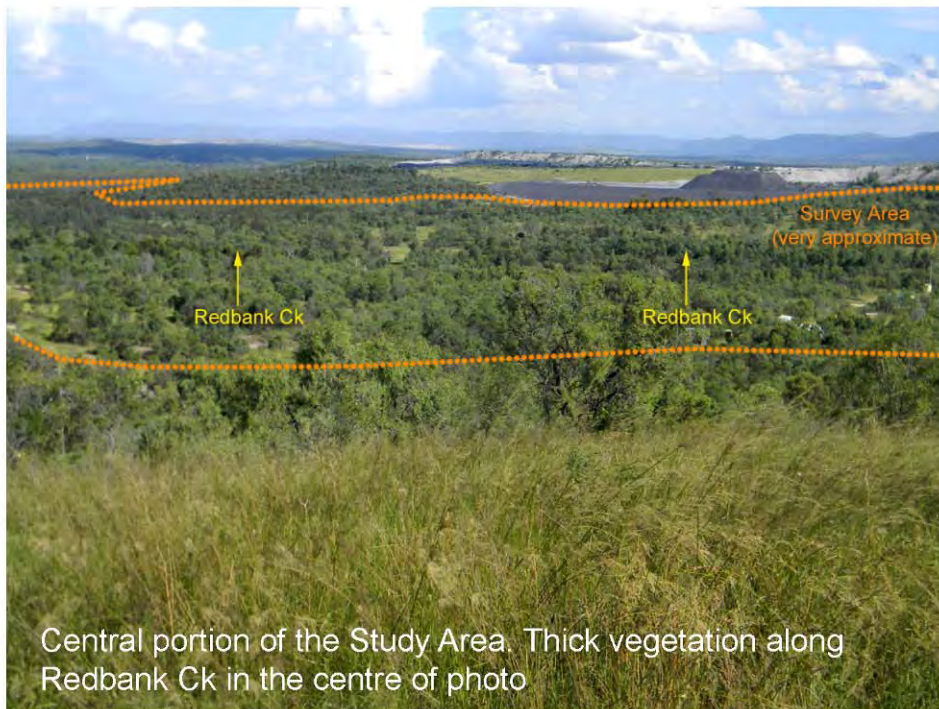
United Project – Assessment Area (1963)



Archaeological Assessment – Study Area



Archaeological Assessment – Study Area



Archaeological Assessment – Redbank Creek



GLENCORE 42

Archaeological Assessment – Redbank Creek



GLENCORE 43

Archaeological Assessment – Open Areas



Low GSV in open paddock areas



Archaeological Assessment - Timing



Very Low GSV in Bulloak Woodland



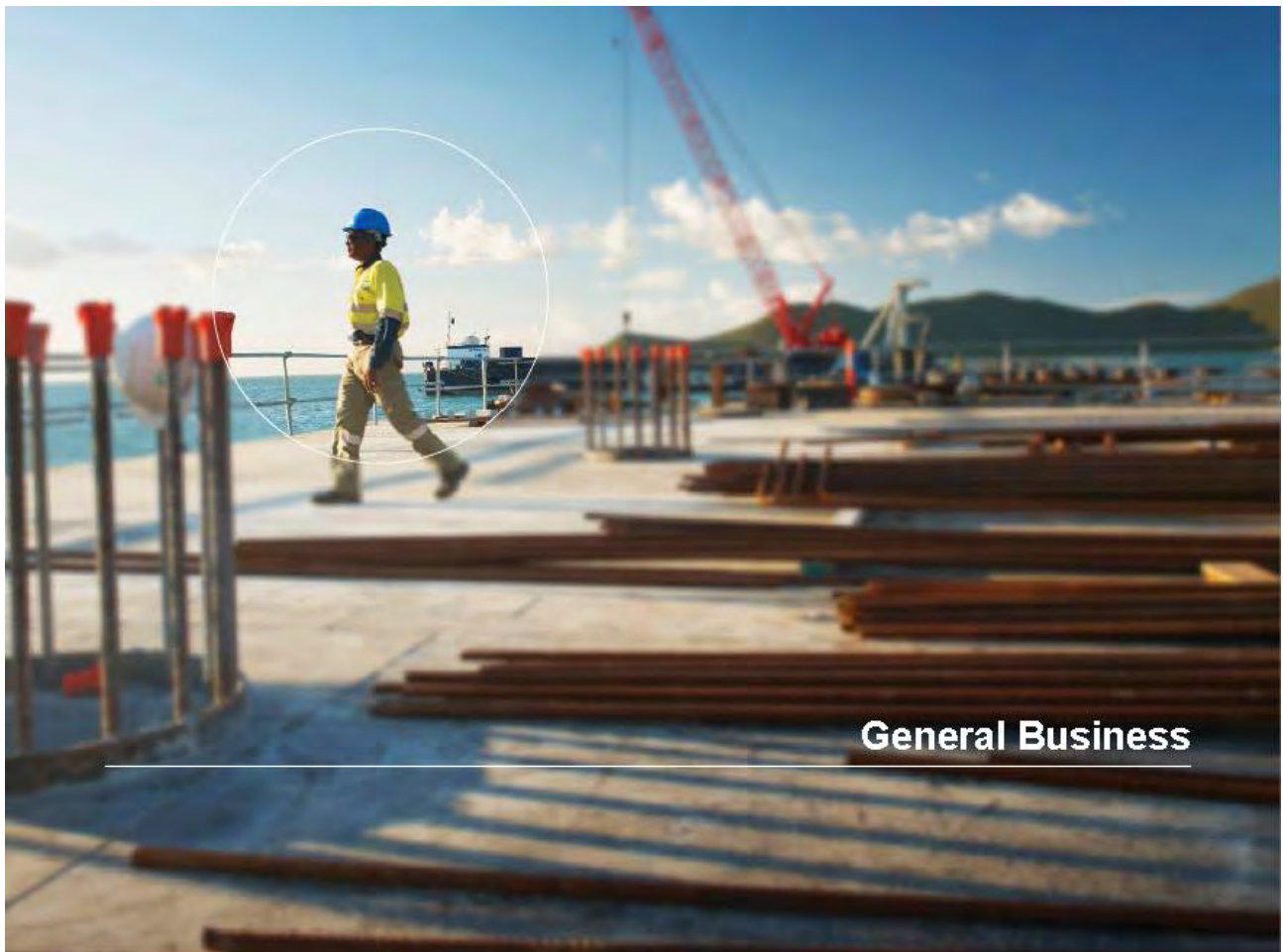


Cultural Values Assessment - Overview

- **A specific Cultural Heritage Values Assessment will be undertaken for the Project Area that is:**
 - Compliant with the requirements of the *National Parks and Wildlife Act 1974* (NPW Act),
 - Consistent with the *“Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW”* (OEH, 2011).
- Cultural heritage values assessment conducted according to the requirements of the *“Aboriginal cultural heritage consultation requirements for proponents 2010”* (DECCW, 2010a), as a contribution to Stage 3, whereby information about cultural significance is exclusively derived and determined from the perspective of the Knowledge Holder Groups and RAPs.
- To contextualise the cultural values identified and their significance with respect to the Knowledge Holder groups and RAPs understanding of heritage impacts and issues of intra and inter-generational equity.
- To make recommendations that enable the cultural values and cultural considerations determined through this process to inform the protection, salvage and/or mitigation of cultural heritage values within the Project Area only.

Cultural Values Assessment – Scope

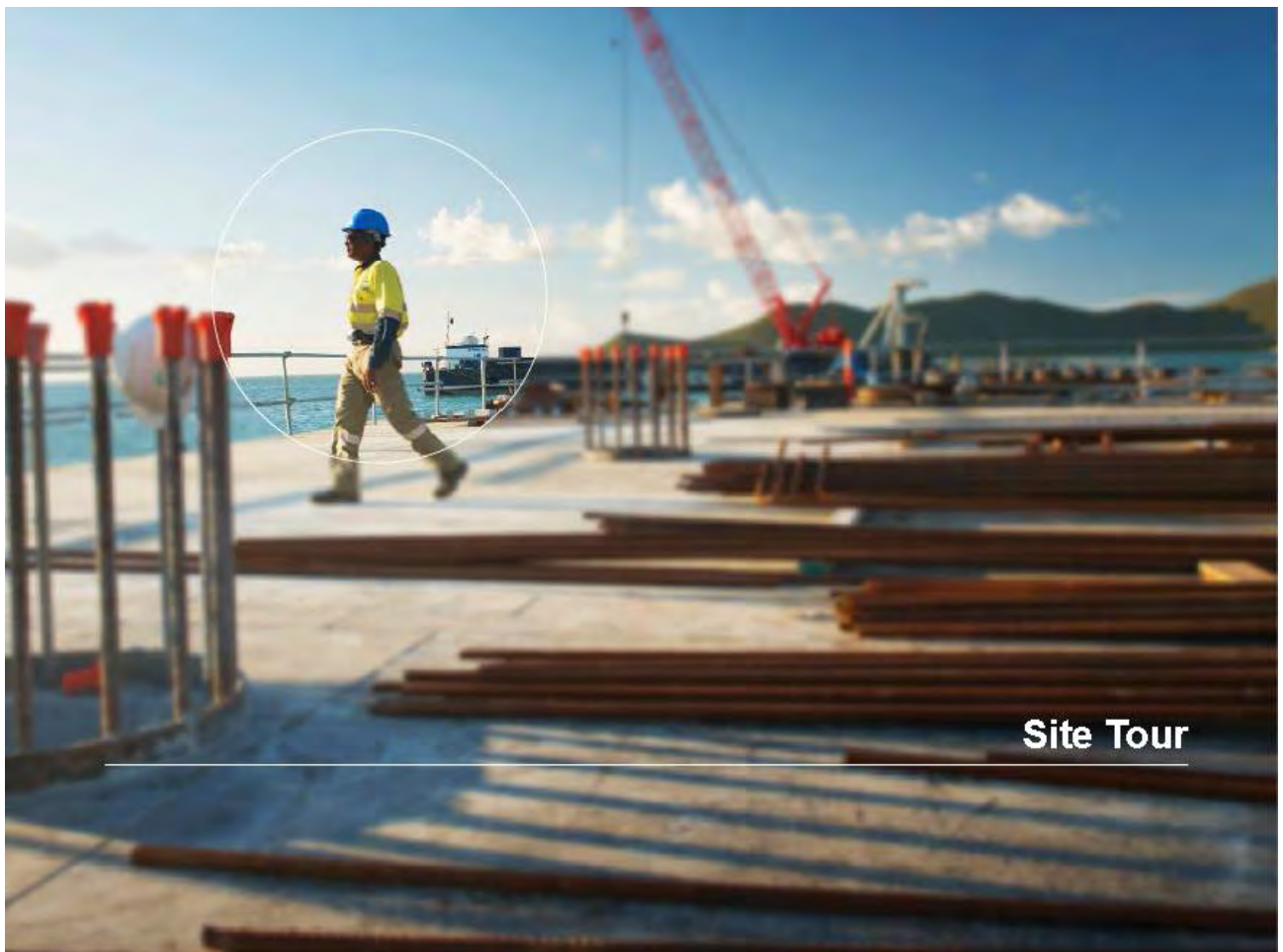
- Field assessments of the Project Area to identify the nature and extent of the cultural values within the Project Area
- Archival research and other desktop review to ensure an appropriate understanding of the ethnographic, environmental and historical land use contexts of the Project Area only;
- Documentation of oral histories and/or other commentaries from the Knowledge Holder group members and RAPs relating to the cultural values of the Project Area;
- Mapping of the cultural values of the Project Area;
- Synthesis of the identified cultural values and the cultural significance of items, places, natural resources and/or landscapes of the Project Area in accordance with established cultural significance assessment criteria; and
- Delivery of proposed management options for the identified Aboriginal cultural values within the Project Area. These options are expected to address such aspects as harm minimisation and mitigation; cumulative impact and inter-generational equity.
- Upon completion of the Knowledge Holder ACHA report, and the RAP report (completed by ACHM) it is expected that aspects of these reports will be incorporated into the integrated Aboriginal Cultural Heritage Assessment Report (ACHAR) being prepared by ACHM on behalf of Glencore United Project (subject to agreed confidentiality and disclosure agreements) for submission in the Project EIS.



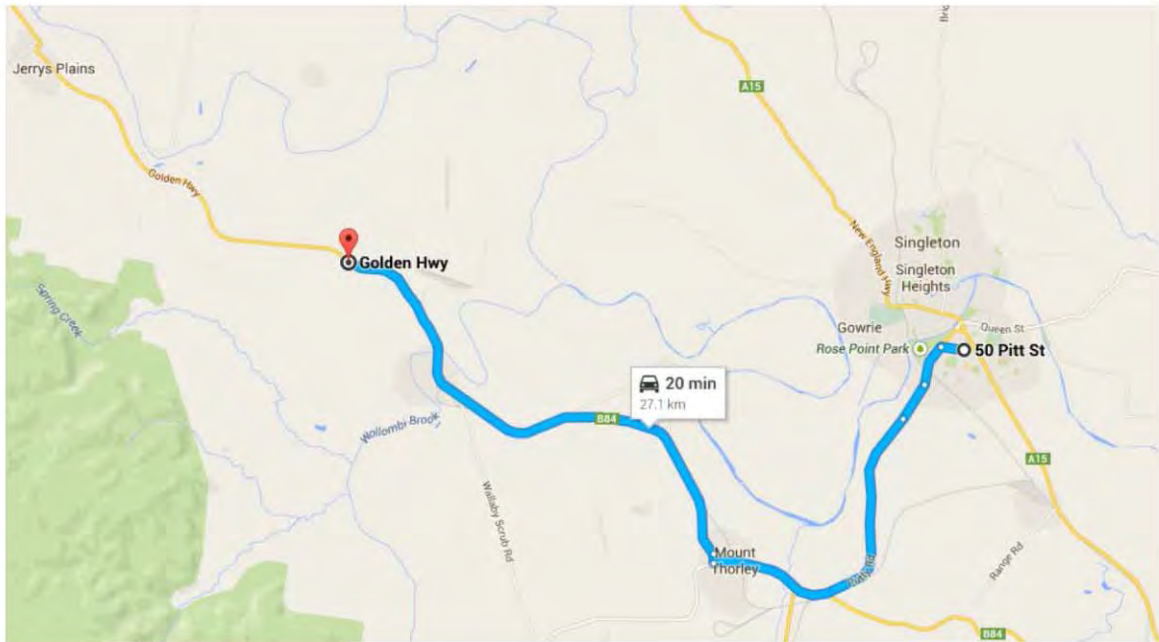
General Business

- Any Questions ?

GLENCORE



Site Tour – United Project Area



GLENCORE

11.33 Example Letter inviting RAPs to cultural values site tour and workshop

UNITED COLLIERIES

GLENCORE

4 June 2015

Leanne Kirkman
10 Scott Street
Muswellbrook NSW 2333

Dear Leanne Kirkman ,

United Project Aboriginal Cultural Heritage Assessment – Cultural Values Workshop and Site Tour

As a Registered Aboriginal Party (RAP) for the United Project, you are invited to attend a site tour and workshop held by United to assist in determining the cultural values present within the United Project Area.

The United Project Aboriginal Cultural Heritage Assessment Report (ACHAR) is being prepared by Australian Cultural Heritage Management (ACHM) who will integrate the outcomes of consultation with RAPs into the United Project ACHAR.

The aims of the ACHAR are as below:

- To undertake a ACHA of the Project that is compliant with the requirements of the National Parks and Wildlife Act 1974 (NPW Act);
- To undertake a ACHA of the Project that is consistent with the “Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW” (OEH, 2011);
- To conduct and document adequate consultation with RAPs to support the development of this cultural heritage values assessment in accordance with the requirements of the “Aboriginal cultural heritage consultation requirements for proponents 2010” (DECCW, 2010a), whereby information about cultural significance is derived and determined from the perspective of RAPs;
- To contextualise the cultural values identified and their significance with respect to RAPs understanding of heritage impacts and issues of intra and inter-generational equity; and
- To make recommendations that enable the cultural values and cultural considerations determined through this process to inform the protection, salvage and/or mitigation of cultural heritage values within the Project Area only.

Scope of the Workshop and Site Tour

The following tasks will be undertaken during the workshop and site tour:

- Consultation with RAPs as per the regulatory requirements, policy standards and approved consultation guidelines;
- Field investigation of the Project Area to identify the nature and extent of cultural values within the Project;
- Discussion and of the ethnographic, environmental and historical land use contexts of the Project Area;
- Documentation of oral histories and/or other commentaries from RAPs focusing on the cultural values of the Project Area;
- Development of spatial context of the cultural values of the Project Area to allow for Cultural Values mapping;

Private Mail Bag 13, Singleton, NSW 2330
134 Jerrys Plains Road, Warkworth, NSW 2330
T + 61 2 6578 9500 F + 61 2 6578 9606 www.unitedcollieries.com.au

United Collieries Pty Limited ABN 67 001 990 209

GLENCORE

- Synthesis of cultural values and the cultural significance of items, places, natural resources and/or landscapes of the Project Area in accordance with established cultural significance assessment criteria; and
- Development of proposed management options for the identified Aboriginal cultural values within the Project Area. These options are expected to address such aspects as harm minimisation and mitigation; cumulative impact and inter-generational equity.

Following the workshop and site tour, Glencore United Project and ACHM will continue to consult with RAPs regarding the development of the ACHAR and all RAPs will have the opportunity to review and provide feedback and comment on the draft ACHAR before finalisation of the report.

The Cultural Values Workshop and Site Tour are scheduled to be held on **8 July 2015** in **Singleton**, the schedule is as follows:

- **8:00am:** Meet at Quest Apartments in Singleton
- **8:15am:** Leave Singleton on bus to commence site tour
- **8:30am – 11:30am:** Site tour of Project Area
- **11:30am:** Return to Singleton
- **11:45 – 12:15pm:** Lunch (provided)
- **12:30 – 4:00pm:** Cultural Values workshop and discussions

To confirm your attendance at the site tour and workshop please RSVP as per the below methods by **Friday 3 July**:

Mathew Goddard
Approvals Coordinator
e: Mathew.Goddard@glencore.com.au
m: 0407 723 686

You will be engaged via the Hunter Valley Aboriginal Corporation (HVAC) and remunerated for your participation in the site tour and workshop as per the agreed schedule of rates under *Umbrella Agreement – Supply of Field Workers* between Glencore Coal Assets Australia and Hunter Valley Aboriginal Corporation which are as follows:

- Hourly Rate: \$68.75 / hr
- Day Rate: Capped \$550 / day
- Travel: \$50 travel allowance

If you require any additional information or have an enquiry, please don't hesitate to contact me.

Yours sincerely



Mathew Goddard
Approvals Coordinator
Glencore Coal Assets Australia

11.34 Example Letter inviting RAP's to Impact and Mitigation Measures Workshop

**UNITED
COLLIERIES**

GLENCORE

17 November 2015

Barry Anderson
Lower Wonnaruah Tribal Consultancy Pty Ltd
156 The Inlet Road
Bulga NSW 2330

Dear Barry,

**United Wambo Project Aboriginal Cultural Heritage Assessment
Cultural Heritage Impact Management and Mitigation Measures Workshop**

As a Registered Aboriginal Party (RAP) for the United Wambo Project, you are invited to attend a workshop to be held at the Singleton Bowling Club on 25 November 2015. The aim of the workshop is to discuss and review the proposed Aboriginal Cultural Heritage management and mitigation measures for the United Wambo Project.

The United Wambo Project Aboriginal Cultural Heritage Assessment Report (ACHAR) is being prepared by Australian Cultural Heritage Management (ACHM). ACHM will integrate the outcomes of consultation with RAPs into the United Wambo Project ACHAR for inclusion in the Environmental Impact Statement required for the Development Application.

Scope of the Workshop

The following tasks will be undertaken during the workshop:

- Overview of the Archaeological Surface and Sub-Surface Survey Program – Ben Churcher (OzArk)
- Overview of Cultural Heritage Values of the Project Area and surrounds – Shaun Canning (ACHM)
- Discussion of the proposed management and mitigation measures for the identified Aboriginal cultural values within the Project Area.

Following the workshop, the United Wambo Project team, ACHM and OzArk will continue to consult with RAPs regarding the development of the ACHAR and all RAPs will have the opportunity to review and provide feedback and comment on the draft ACHAR before finalisation of the report.

The Workshop is scheduled to be held from 9:30am on **25 November 2015** at the Singleton Bowling Club and is anticipated to take approximately 3 hours, lunch will be provided.

To confirm your attendance at the workshop please contact me by **Tuesday 24 November**.

Private Mail Bag 13, Singleton, NSW 2330
134 Jerrys Plains Road, Warkworth, NSW 2330
T + 61 2 6578 9500 F + 61 2 6578 9606 www.unitedcollieries.com.au
United Collieries Pty Limited ABN 67 001 990 209

GLENCORE

You will be engaged via the Hunter Valley Aboriginal Corporation (HVAC) and remunerated for your participation in the workshop as per the agreed schedule of rates under *Umbrella Agreement – Supply of Field Workers* between Glencore Coal Assets Australia and Hunter Valley Aboriginal Corporation which are as follows:

- Hourly Rate: \$68.75 / hr
- Day Rate: Capped \$550 / day
- Travel: \$50 travel allowance

If you require any additional information or have an enquiry, please don't hesitate to contact me.

Yours sincerely



Aislinn Farnon
Approvals Manager
Glencore Coal Assets Australia

e: Aislinn.Farnon@glencore.com.au
m: 0429 306 208

11.35 Invitation for Proposal from PCWP

UNITED COLLIERIES

GLENCORE

19 February 2015

Plains Clans of the Wonnarua People
C/O Tocomwall Pty Limited
PO Box 76
Caringbah NSW 1495

Dear PCWP Heads of Families,

Invitation for proposal – Plains Clans of the Wonnarua People Aboriginal Cultural Heritage Assessment Report

You are invited to submit a proposal for the development of an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the United Collieries Project from the perspective of the members of the Knowledge Holder group – the Plains Clan of the Wonnarua People (PCWP). It is envisaged that this ACHAR will be undertaken following similar methods and processes of comparable previous studies commissioned by Glencore and completed by the Plains Clans of the Wonnarua People (i.e the Bulga Optimisation and Mt Owen Project PCWP ACHAR).

The Aboriginal Cultural Heritage Assessment (ACHA) will be focussed on the Project Area as shown on Figure 1.

ACHAR Aims:

- To undertake ACHA of the Project that is:
 - Compliant with the requirements of the *National Parks and Wildlife Act 1974* (NPW Act),
 - Consistent with the *“Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW”* (OEH, 2011).
- To conduct and document adequate consultation with families represented by the PCWP to support the development of this cultural heritage values assessment in accordance with the requirements of the *“Aboriginal cultural heritage consultation requirements for proponents 2010”* (DECCW, 2010a), whereby information about cultural significance is derived and determined from the perspective of the PCWP.
- To contextualise the cultural values identified and their significance with respect to the PCWP’s understanding of heritage impacts and issues of intra and inter-generational equity.

Private Mail Bag 13, Singleton, NSW 2330
134 Jerrys Plains Road, Warkworth, NSW 2330
T : 61 2 6578 9500 F : 61 2 6578 9606 www.unitedcollieries.com.au

United Collieries Pty Limited ABN 67 001 990 209

GLENCORE

- To make recommendations that enable the cultural values and cultural considerations determined through this process to inform the protection, salvage and/or mitigation of cultural heritage values within the Project Area only.

Scope of Work

The following project tasks are identified as the minimum requirements necessary to achieve these aims and constitute the Scope of Works (SOW) for your ACHAR proposal:

1. Consultation with PCWP members as per the regulatory requirements, policy standards and approved consultation guidelines;
2. Field investigation of the Project Area to identify the nature and extent of the PCWP cultural values within the Project Area (to be undertaken in conjunction with archaeological assessments and subject to Glencore site access, safety and induction requirements);
3. Archival research and other desktop review to ensure an appropriate understanding of the ethnographic, environmental and historical land use contexts of the Project Area;
4. Documentation of oral histories and/or other commentaries from the PCWP members focussed on the cultural values of the Project Area;
5. Mapping of the cultural values of the Project Area;
6. Synthesis of the PCWP's cultural values and the cultural significance of items, places, natural resources and/or landscapes of the Project Area in accordance with established cultural significance assessment criteria; and
7. Development of proposed management options for the identified Aboriginal cultural values within the Project Area. These options are expected to address such aspects as harm minimisation and mitigation; cumulative impact and inter-generational equity.

The completed report provided by the PCWP will inform and become an appendix to the integrated Aboriginal Cultural Heritage Assessment Report (ACHAR) being prepared by ACHM on behalf of Glencore United Project (subject to agreed confidentiality and disclosure agreements).

We ask that in your proposal you also provide the following information:

- detailed submission outlining your approach to this scope of works, your proposed project team including their qualifications, role and proven experience including identification of key personnel
- the availability of your resources to complete this scope of works;
- a schedule for completing the project incorporating all required consultation, assessment and reporting requirements; and

GLENCORE

- an itemised detailed costing including clearly defined cost efficiencies and the hourly rates on which the costing is based;

Communications and Review

Please allow for the following in relation to your scope and costing:

- appropriate site visits, exclusive of the archaeological survey;
- at least monthly phone/email communication with United throughout the completion of the ACHAR;
- two rounds of comments on your draft report.

Deliverables and Timeframes

The preparation of the EIS commenced in January 2015, with the EIS proposed to be submitted to the Department of Planning and Environment Q4 in 2015. We would require a full draft ACHAR for initial review by August 2015 at the latest, with the final report to be finalized in September 2015. The following table outlines the proposed Schedule for the ACHA.

Date	Deliverable
11/03/2015	Delivery of PCWP ACHAR proposal to Glencore
20/3/2015	Agreement of SOW and acceptance of Proposal Contract Signed (including disclosure principles) with Glencore
13/05/2015	Proposed PCWP site visit
30/08/2015	Draft PCWP ACHAR Report delivered to Glencore
30/09/2015	Final PCWP ACHAR Report delivered to Glencore

Deliverables will consist of the following:

- Draft reports to be provided in editable word format for review and comment; and
- Final report to be provided in hard copy (two) and in digital format on CD.

Project Management

Upon receipt and acceptance of the proposal by United, a Consultancy Agreement (Contract) will be composed and signed by both Glencore United Project and the PCWP prior to any work on the ACHAR being undertaken. The contract will include confidentiality clauses and the contracting body must warrant that you have appropriate cultural authority to provide the information.

Some key project management considerations include:

- No changes to the scope of work will be undertaken without prior written approval

GLENCORE

- Formal monthly progress and budget reporting in an agreed format will be required
- All field workers will require appropriate insurances, PPE and adherence to site access and safety policies
- Adherence to Glencore Code of Conduct

I look forward to receiving your proposal in the near future. Glencore values the inputs of the PCWP in undertaking this important work which will assist us in compiling a comprehensive Aboriginal Cultural Heritage Assessment for the Glencore United Project Application and EIS.

For all correspondence and additional information please contact me on the below contact details:

Phone: 02 6578 9526

Fax: 02 6578 9606

Email: Mathew.Goddard@glencore.com.au

Address: PMB 13, Singleton NSW 2335

Kind Regards,



Mathew Goddard
Approvals Coordinator
Glencore Coal Assets Australia

11.3.6 Invitation for Proposal from WNAC

UNITED COLLIERIES

GLENCORE

19 February 2015

Wonnarua Nation Aboriginal Corporation
PO Box 3066
Singleton Delivery Centre NSW 2330

Dear WNAC Heads of Families,

Invitation for proposal – Wonnarua Nation Aboriginal Corporation Aboriginal Cultural Heritage Assessment Report

You are invited to submit a proposal for the development of an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the United Collieries Project from the perspective of the members of the Knowledge Holder group – the Wonnarua Nation Aboriginal Corporation (WNAC). It is envisaged that this ACHAR will be undertaken following similar methods and processes of the comparable previous report commissioned by Glencore and completed by the Wonnarua Nation Aboriginal Corporation for the Mt Owen Project and Bulga Optimisation Project ACHARs.

The Aboriginal Cultural Heritage Assessment (ACHA) will be focussed on the Project Area as shown on Figure 1.

ACHAR Aims:

- To undertake ACHA of the Project that is:
 - Compliant with the requirements of the *National Parks and Wildlife Act 1974* (NPW Act),
 - Consistent with the *“Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW”* (OEH, 2011).
- To conduct and document adequate consultation with families represented by the WNAC to support the development of this cultural heritage values assessment in accordance with the requirements of the *“Aboriginal cultural heritage consultation requirements for proponents 2010”* (DECCW, 2010a), whereby information about cultural significance is derived and determined from the perspective of the WNAC.
- To contextualise the cultural values identified and their significance with respect to the WNAC’s understanding of heritage impacts and issues of intra and inter-generational equity.

Private Mail Bag 13, Singleton, NSW 2330
134 Jerrys Plains Road, Warkworth, NSW 2330
T + 61 2 6578 9500 F + 61 2 6578 9606 www.unitedcollieries.com.au

United Collieries Pty Limited ABN 67 001 990 209

GLENCORE

- To make recommendations that enable the cultural values and cultural considerations determined through this process to inform the protection, salvage and/or mitigation of cultural heritage values within the Project Area only.

Scope of Work

The following project tasks are identified as the minimum requirements necessary to achieve these aims and constitute the Scope of Works (SOW) for your ACHAR proposal:

1. Consultation with WNAC members as per the regulatory requirements, policy standards and approved consultation guidelines;
2. Field investigation of the Project Area to identify the nature and extent of the WNAC cultural values within the Project Area (to be undertaken in conjunction with archaeological assessments and subject to Glencore site access, safety and induction requirements);
3. Archival research and other desktop review to ensure an appropriate understanding of the ethnographic, environmental and historical land use contexts of the Project Area;
4. Documentation of oral histories and/or other commentaries from the WNAC members focussed on the cultural values of the Project Area;
5. Mapping of the cultural values of the Project Area;
6. Synthesis of the WNAC's cultural values and the cultural significance of items, places, natural resources and/or landscapes of the Project Area in accordance with established cultural significance assessment criteria; and
7. Development of proposed management options for the identified Aboriginal cultural values within the Project Area. These options are expected to address such aspects as harm minimisation and mitigation; cumulative impact and inter-generational equity.

The completed report provided by the WNAC will inform and become an appendix to the integrated Aboriginal Cultural Heritage Assessment Report (ACHAR) being prepared by ACHM on behalf of Glencore United Project (subject to agreed confidentiality and disclosure agreements).

We ask that in your proposal you also provide the following information:

- detailed submission outlining your approach to this scope of works, your proposed project team including their qualifications, role and proven experience including identification of key personnel
- the availability of your resources to complete this scope of works;
- a schedule for completing the project incorporating all required consultation, assessment and reporting requirements; and

GLENCORE

- an itemised detailed costing including clearly defined cost efficiencies and the hourly rates on which the costing is based;

Communications and Review

Please allow for the following in relation to your scope and costing:

- appropriate site visits, exclusive of the archaeological survey;
- at least monthly phone/email communication with United throughout the completion of the ACHAR;
- two rounds of comments on your draft report.

Deliverables and Timeframes

The preparation of the EIS commenced in January 2015, with the EIS proposed to be submitted to the Department of Planning and Environment Q4 in 2015. We would require a full draft ACHAR for initial review by August 2015 at the latest, with the final report to be finalized in September 2015. The following table outlines the proposed Schedule for the ACHA.

Date	Deliverable
11/03/2015	Delivery of WNAC ACHAR proposal to Glencore
20/3/2015	Agreement of SOW and acceptance of Proposal Contract Signed (including disclosure principles) with Glencore
12/05/2015	Proposed WNAC site visit
30/08/2015	Draft WNAC ACHAR Report delivered to Glencore
30/09/2015	Final WNAC ACHAR Report delivered to Glencore

Deliverables will consist of the following:

- Draft reports to be provided in editable word format for review and comment; and
- Final report to be provided in hard copy (two) and in digital format on CD.

Project Management

Upon receipt and acceptance of the proposal by United, a Consultancy Agreement (Contract) will be composed and signed by both Glencore United Project and the WNAC prior to any work on the ACHAR being undertaken. The contract will include confidentiality clauses and the contracting body must warrant that you have appropriate cultural authority to provide the information.

Some key project management considerations include:

- No changes to the scope of work will be undertaken without prior written approval

GLENCORE

- Formal monthly progress and budget reporting in an agreed format will be required
- All field workers will require appropriate insurances, PPE and adherence to site access and safety policies
- Adherence to Glencore Code of Conduct

I look forward to receiving your proposal in the near future. Glencore values the inputs of the WNAC in undertaking this important work which will assist us in compiling a comprehensive Aboriginal Cultural Heritage Assessment for the Glencore United Project Application and EIS.

For all correspondence and additional information please contact me on the below contact details:

Phone: 02 6578 9526

Fax: 02 6578 9606

Email: Mathew.Goddard@glencore.com.au

Address: PMB 13, Singleton NSW 2335

Kind Regards,



Mathew Goddard
Approvals Coordinator
Glencore Coal Assets Australia

GLENCORE

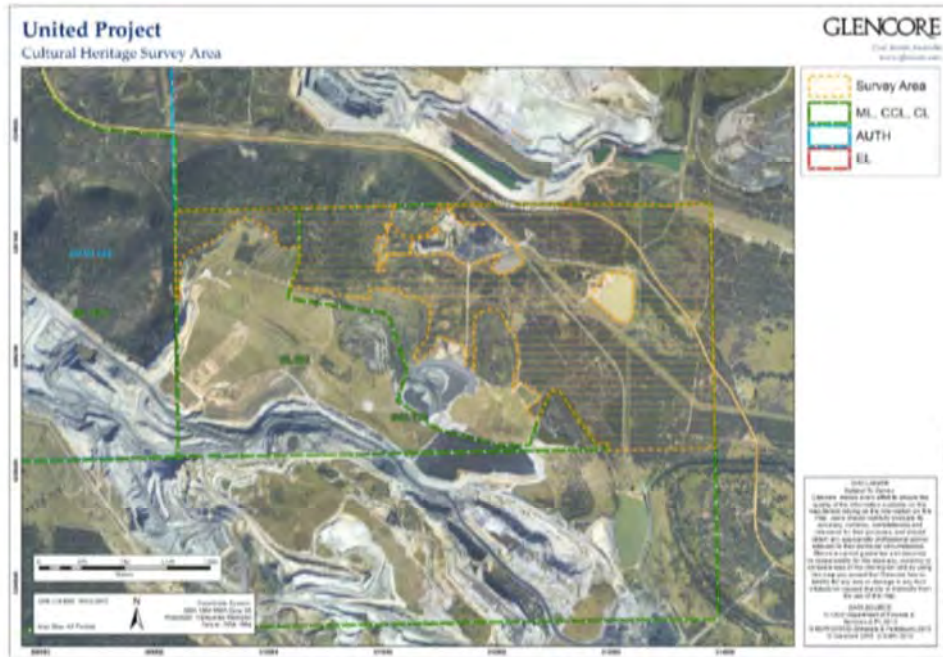


Figure 1 United Collieries ACHA Project Area

11.3.7 Invitation for Proposal from WTC

UNITED COLLIERIES GLENCORE

19 February 2015

Wonnarua Traditional Custodians Native Title Aboriginal Corporation
4 Kennedy Street
Singleton NSW 2330
Attention: Des Hickey, Gordon Griffiths

Dear WTCNTAC Heads of Families,

Invitation for proposal – Wonnarua Traditional Custodians Aboriginal Cultural Heritage Assessment Report

You are invited to submit a proposal for the development of an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the United Collieries Project from the perspective of the members of the Knowledge Holder group – the Wonnarua Traditional Custodians Native Title Aboriginal Corporation (WTC). It is envisaged that this ACHAR will be undertaken following similar methods and processes of the comparable previous report commissioned by Glencore and completed by the Wonnarua Traditional Custodians Native Title Aboriginal Corporation for the Mt Owen Project ACHAR.

The Aboriginal Cultural Heritage Assessment (ACHA) will be focussed on the Project Area as shown on Figure 1.

ACHAR Aims:

- To undertake ACHA of the Project that is:
 - Compliant with the requirements of the *National Parks and Wildlife Act 1974* (NPW Act),
 - Consistent with the *“Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW”* (OEH, 2011).
- To conduct and document adequate consultation with families represented by the WTC to support the development of this cultural heritage values assessment in accordance with the requirements of the *“Aboriginal cultural heritage consultation requirements for proponents 2010”* (DECCW, 2010a), whereby information about cultural significance is derived and determined from the perspective of the WTC.
- To contextualise the cultural values identified and their significance with respect to the WTC’s understanding of heritage impacts and issues of intra and inter-generational equity.

Private Mail Bag 13, Singleton, NSW 2330
134 Jerrys Plains Road, Warkworth, NSW 2330
T : 61 2 6578 9500 F : 61 2 6578 9606 www.unitedcollieries.com.au

United Collieries Pty Limited ABN 67 001 990 209

GLENCORE

- To make recommendations that enable the cultural values and cultural considerations determined through this process to inform the protection, salvage and/or mitigation of cultural heritage values within the Project Area only.

Scope of Work

The following project tasks are identified as the minimum requirements necessary to achieve these aims and constitute the Scope of Works (SOW) for your ACHAR proposal:

1. Consultation with WTC members as per the regulatory requirements, policy standards and approved consultation guidelines;
2. Field investigation of the Project Area to identify the nature and extent of the WTC cultural values within the Project Area (to be undertaken in conjunction with archaeological assessments and subject to Glencore site access, safety and induction requirements);
3. Archival research and other desktop review to ensure an appropriate understanding of the ethnographic, environmental and historical land use contexts of the Project Area;
4. Documentation of oral histories and/or other commentaries from the WTC members focussed on the cultural values of the Project Area;
5. Mapping of the cultural values of the Project Area;
6. Synthesis of the WTC's cultural values and the cultural significance of items, places, natural resources and/or landscapes of the Project Area in accordance with established cultural significance assessment criteria; and
7. Development of proposed management options for the identified Aboriginal cultural values within the Project Area. These options are expected to address such aspects as harm minimisation and mitigation; cumulative impact and inter-generational equity.

The completed report provided by the WTC will inform and become an appendix to the integrated Aboriginal Cultural Heritage Assessment Report (ACHAR) being prepared by ACHM on behalf of Glencore United Project (subject to agreed confidentiality and disclosure agreements).

We ask that in your proposal you also provide the following information:

- detailed submission outlining your approach to this scope of works, your proposed project team including their qualifications, role and proven experience including identification of key personnel
- the availability of your resources to complete this scope of works;
- a schedule for completing the project incorporating all required consultation, assessment and reporting requirements; and

GLENCORE

- an itemised detailed costing including clearly defined cost efficiencies and the hourly rates on which the costing is based;

Communications and Review

Please allow for the following in relation to your scope and costing:

- appropriate site visits, exclusive of the archaeological survey;
- at least monthly phone/email communication with United throughout the completion of the ACHAR;
- two rounds of comments on your draft report.

Deliverables and Timeframes

The preparation of the EIS commenced in January 2015, with the EIS proposed to be submitted to the Department of Planning and Environment Q4 in 2015. We would require a full draft ACHAR for initial review by August 2015 at the latest, with the final report to be finalized in September 2015. The following table outlines the proposed Schedule for the ACHA.

Date	Deliverable
11/03/2015	Delivery of WTC ACHAR proposal to Glencore
20/3/2015	Agreement of SOW and acceptance of Proposal Contract Signed (including disclosure principles) with Glencore
15/05/2015	Proposed WTC site visit
30/08/2015	Draft WTC ACHAR Report delivered to Glencore
30/09/2015	Final WTC ACHAR Report delivered to Glencore

Deliverables will consist of the following:

- Draft reports to be provided in editable word format for review and comment; and
- Final report to be provided in hard copy (two) and in digital format on CD.

Project Management

Upon receipt and acceptance of the proposal by United, a Consultancy Agreement (Contract) will be composed and signed by both Glencore United Project and the WTC prior to any work on the ACHAR being undertaken. The contract will include confidentiality clauses and the contracting body must warrant that you have appropriate cultural authority to provide the information.

Some key project management considerations include:

- No changes to the scope of work will be undertaken without prior written approval

GLENCORE

- Formal monthly progress and budget reporting in an agreed format will be required
- All field workers will require appropriate insurances, PPE and adherence to site access and safety policies
- Adherence to Glencore Code of Conduct

I look forward to receiving your proposal in the near future. Glencore values the inputs of the WTC in undertaking this important work which will assist us in compiling a comprehensive Aboriginal Cultural Heritage Assessment for the Glencore United Project Application and EIS.

For all correspondence and additional information please contact me on the below contact details:

Phone: 02 6578 9526

Fax: 02 6578 9606

Email: Mathew.Goddard@glencore.com.au

Address: PMB 13, Singleton NSW 2335

Kind Regards,



Mathew Goddard
Approvals Coordinator
Glencore Coal Assets Australia

11.38 Archaeological Survey and Test Excavation Methodology - Draft One

**ABORIGINAL HERITAGE SURVEY AND TEST EXCAVATION
METHODOLOGY**

UNITED OPEN CUT PROJECT

GLENCORE

SINGLETON LOCAL GOVERNMENT AREA

FEBRUARY 2015

PREPARED BY

OZARK ENVIRONMENTAL & HERITAGE MANAGEMENT PTY LTD



**Environmental and
Heritage Management P/L**

OzArk EHM

145 Wingewarra St
(PO Box 2069)
Dubbo NSW 2830

Phone: (02) 6882 0118

Fax: (02) 6882 0630

jodie@ozarkehm.com.au

phil@ozarkehm.com.au

www.ozarkehm.com.au

DOCUMENT CONTROLS

Proponent	Glencore		
Client	Glencore		
Project No / Purchase Order No			
Document Description	<i>Aboriginal Heritage Survey and Test Excavation Methodology: United Open Cut Project.</i>		
	Name	Signed	Date
Clients Reviewing Officer			
Clients Representative Managing this Document	OzArk Person(s) Managing this Document		
Mathew Goddard	Dr Jodie Benton		
Location	OzArk Job No.		
\\DROBONAS\Public\OzArk EHM Data\Clients\Glencore-Xstrata Coal\United\Methodology	1154		
Document Status V3.0 FINAL DRAFT	Date		
Draft V1.1 Author to Editor OzArk 1 st Internal (Series V1._ = OzArk internal edits)	V1.0 JB 12.02.15 V1.1 MW 13.02.15		
Draft V2.0 Report Draft for release to client (Series V2._ = OzArk and Client edits)	V2.0 MW to AF 13.02.15		
FINAL V3._once latest version of draft approved by client	V3.0 OzArk to Glencore 17.2.15		
Prepared For	Prepared By		
Mathew Goddard Approvals Coordinator United Collieries Glencore P: 02 6578 9526 M: 0407 723 686 E: Mathew.Goddard@glencore.com.au	Dr Jodie Benton Director OzArk Environmental & Heritage Management Pty. Limited 145 Wingewarra Street (PO Box 2069) Dubbo NSW 2830 P: 02 6882 0118 F: 02 6882 6030 E: jodie@ozarkehm.com.au		
<p>COPYRIGHT</p> <p>© OzArk Environmental & Heritage Management Pty Ltd, © Glencore and © Peabody Energy, 2015.</p> <p>All intellectual property and copyright reserved.</p> <p>Apart from any fair dealing for the purpose of private study, research, criticism or review, as permitted under the Copyright Act, 1968, no part of this report may be reproduced, transmitted, stored in a retrieval system or adapted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise) without written permission.</p> <p>Enquiries should be addressed to OzArk Environmental & Heritage Management Pty Ltd.</p>			

Acknowledgement

OzArk acknowledge Traditional Owners of the area on which this assessment took place and pay respect to their beliefs, cultural heritage and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

1 ARCHAEOLOGICAL ASSESSMENT APPROACH

Umwelt has been engaged to prepare the required Environmental Impact Statement (EIS) for the proposed United Open Cut Project; OzArk Environmental and Heritage Management (OzArk) has been engaged to undertake the archaeological assessment and Australian Cultural Heritage Management (ACHM) has been engaged to undertake the Aboriginal cultural values assessment.

The Aboriginal archaeological assessment will be undertaken in compliance with the NSW Office of the Environment and Heritage (OEH) *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010) and the *Guide for Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011). These guidelines have been developed to support the process of investigating and assessing Aboriginal cultural heritage. They specify the minimum standards for archaeological investigation undertaken in NSW under the *National Parks and Wildlife Act 1974*. The Aboriginal cultural heritage assessment and archaeological investigation are to be undertaken in accordance with the requirements of these documents.

1.1 CULTURAL VALUES ASSESSMENT

The cultural values assessment, which is separate from this archaeological values assessment, will assess the cultural/social and historic values of various areas and/or sites within the proposed Project footprint.

The cultural values assessment, in conjunction with the archaeological assessment, will allow the full assessment of the cultural/social, archaeological, aesthetic and historic values of various areas and/or sites within the proposed Project footprint.

1.2 COMMUNITY CONSULTATION FOR THE ARCHAEOLOGICAL ASSESSMENT

The archaeological assessment will form part of Stage 3 of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (ACHCRs; DECCW 2010).

Prior to the commencement of field work, all Registered Aboriginal Parties (RAPs) will have had the opportunity to be briefed about the Project and to comment on the draft of the survey and test excavation methodology.

Any preliminary cultural values which may be provided by RAPs and that may affect the running of this methodology will be incorporated into the final draft of this document.

All field assessment will include archaeologists from OzArk and RAP representatives. As the number of RAP groups is quite high, participation in the field survey is likely to be managed by a roster. It is understood that United Collieries will manage the survey attendance roster directly.

CONTENTS

Document Controls 1

Contents 3

 Figures 3

1 Archaeological Assessment Approach 4

 1.1 Cultural Values Assessment 4

 1.2 Community Consultation for the Archaeological Assessment 4

2 Environmental Context 7

 2.1 Topography, Geology and Soils 7

 2.2 Hydrology 7

 2.3 Vegetation 7

 2.4 Climate 8

 2.5 Land-Use History and Existing Levels of Disturbance 8

3 Archaeological Background 9

 3.1 Archaeological Context 9

 3.1.1 Redbank Creek: Known Cultural and Archaeological Values 9

 3.2 Predictive Model 11

4 Assessment Methodology 13

 4.1 The Project Area 13

 4.2 Survey 13

 4.2.1 Survey Methodology 14

 4.3 Test Excavation 16

 4.3.1 Test Excavation Methodology 16

References 18

FIGURES

Figure 1-1: The Project Area for the archaeological assessment (red) 6

Figure 2-1: Location of Previous Archaeological Assessments. 10

Figure 2-2: Previously Recorded Aboriginal Archaeological Sites (Source: Umwelt). 10

Glencore have many OH&S conditions relevant to contractors undertaking work on their site. All representatives of registered stakeholder groups taking part in the field surveys will be subject to the same site requirements as other contractors on site and a precondition of survey participation is meeting any site specific United Collieries requirements.

Survey team numbers and logistics will to be determined through discussion with RAPs but total team size is not expected to exceed 15 persons.

Preliminary discussions will be held during each field survey day regarding the day's findings, including any specific identified cultural values. Discussions will also canvas the possible significance and management of Aboriginal heritage sites recorded and culturally acceptable mitigation measures that might be considered.

Records of sites identified and the outcomes of cultural heritage discussions in the field will be recorded in writing, summarised and circulated to all registered stakeholder groups as a fieldwork summary following the completion of the survey programs.

OzArk will prepare a draft report based on the results of the field assessments regarding the recorded sites and management. RAPs will be invited to review this draft report and provide comment within a given time frame and feedback will be included in report finalisation and provided as an appendix to the final report.

A copy of the final report, or advice of its availability, will be provided to each RAP prior to the Proponent submitting it to the relevant authorities.

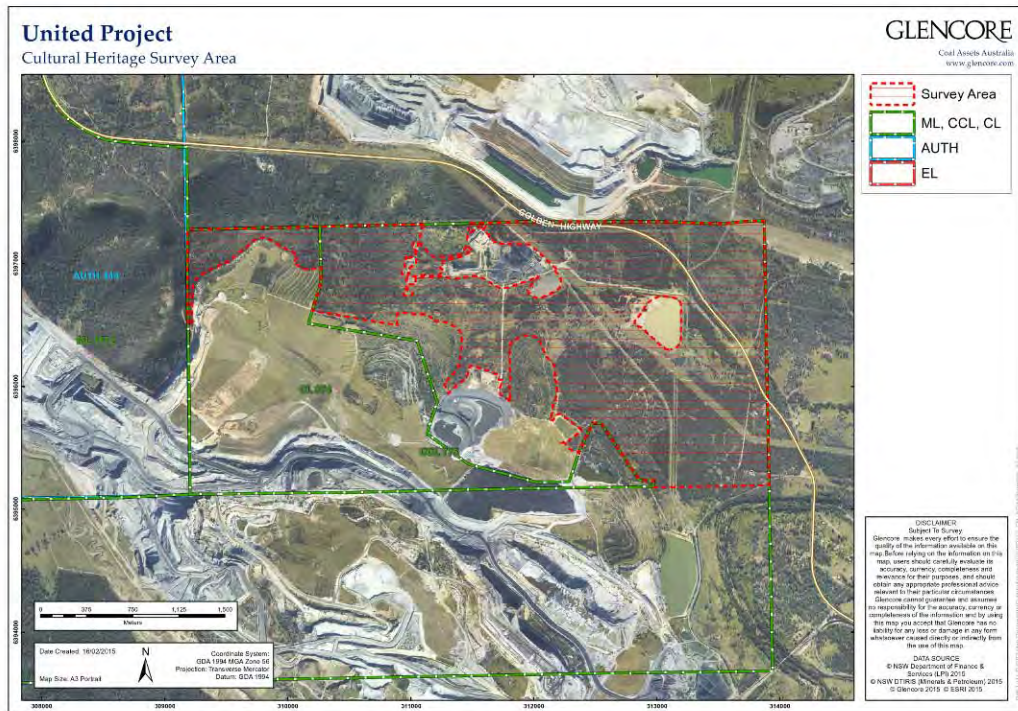


Figure 1-1: The Project Area for the archaeological assessment (red).

2 ENVIRONMENTAL CONTEXT

An understanding of the environmental contexts of a Study Area is requisite in any Aboriginal archaeological investigation (DECCW 2010b). It is a particularly important consideration in the development and implementation of survey strategies for the detection of archaeological sites. In addition, natural geomorphic processes of erosion and/or deposition, as well as humanly activated landscape processes, influence the degree to which these material culture remains are retained in the landscape as archaeological sites; and the degree to which they are preserved, revealed and/or conserved in present environmental settings.

2.1 TOPOGRAPHY, GEOLOGY AND SOILS

The Project Site falls within the NSW Sydney Basin Bioregion (SBB) within the Hunter ecosystem, and is comprised wholly of the Central Hunter Foothills landscape unit (Mitchell 2002: 73). The topography of the Central Hunter Foothills landscape unit is characterised by undulating lowlands, rounded to steep hills with rock outcrop on ridges (Mitchell 2002: 73). General elevation across this landscape type ranges from 0 to 30 metres, with a local relief of less than 10 metres. The geology of this landscape features coal seams, claystone, tuff, siltstone, shale, conglomerate, with red-brown to yellow brown harsh texture-contrast soils on slopes, dark coloured clays in valleys and limited accumulations of sand and gravel in streams (Mitchell 2002: 73).

2.2 HYDROLOGY

The primary drainage feature of the Project Area is Redbank Creek, which flows generally from the northwest to the southeast, flowing eventually into Wollombi Brook just to the southeast of the Project Area boundary. The headwaters of Redbank Creek are located in the northwest of the Project Area (**Figure 1-1**).

2.3 VEGETATION

The Project Area's vegetation has been altered significantly as it has been largely historically cleared as per the agricultural and commercial properties which surround it. The majority of the Project Site is vegetated by exotic grass and cereal species, which in some areas are very dense and inhibit ground surface visibility.

Prior to European occupation, Mitchell (2002: 73) models that the vegetation within this landscape unit would have comprised of woodlands to open forest of Spotted Gum, Forest Red Gum, Narrow-Leaved Ironbark, Mugga, and White Box with Kangaroo Grass and Wallaby Grass.

2.4 CLIMATE

The SBB exhibits a temperate climate. Summers are warm and there is no dry season. The north-east portion of the SBB (within which the current Project Site is located) is described as sub-humid. Climate statistics recorded at the Bureau of Meteorology's Singleton Army site between 1969 and 1990 (BOM 2015) indicate that temperatures in the vicinity of the Project Site are currently highest in January (mean maximum temperature: 30.6°C) and lowest in July (mean minimum temperature: 5.4°C). Rainfall recorded at the same site during the same period indicate that rainfall is also highest in January (mean monthly rainfall: 94.3mm; mean number of days of rain \geq 1mm: 8.0) and lowest in July (mean monthly rainfall: 28.2mm; mean number of days of rain \geq 1mm: 4.9).

2.5 LAND-USE HISTORY AND EXISTING LEVELS OF DISTURBANCE

The Project Area is historically agricultural land and more recently used for mining purposes. The landforms at the Project Area have been affected by soil loss and subsidence from the removal of undermined coal.

Prior to the establishment of mining operations, the primary land use in the Project Area was agricultural such as grazing and cultivation. Grazing is still wide spread throughout the surrounding area occurring at a number of properties along the Golden Highway and the outskirts of Jerrys Plains.

3 ARCHAEOLOGICAL BACKGROUND

3.1 ARCHAEOLOGICAL CONTEXT

Extensive archaeological investigations for the United, Wambo, Peabody and surrounding collieries have been undertaken over the past 30 years, with archaeological surveys and assessments conducted by AMBS (1997, 2001, 2002, 2004), Brayshaw (1981-1989), Dean-Jones (1995), Dyll (1981), ENSR (2007, 2008), ERM (1998, 2004), Haglund (1982), Hiscock (1984a), HLA (2001), HLA ENSR (2001, 2002, 2007), Insite (2010), Koettig and Hughes (1983), McCardle Cultural Heritage (2009), Perry (1998, 2000, 2001), and Umwelt (2002, 2005)¹.

Surveys over the United portion of the current Project Area are shown in **Figure 2-1**.

Searches were undertaken by Umwelt in 2012 of the OEH AHIMS database to obtain details of any previously registered sites over the Project Area and its locale. The AHIMS search showed 265 sites. This total comprises 179 artefact scatters, 69 isolated finds, 12 Potential Archaeological Deposits (PADs) and 3 artefact scatters with PAD (**Figure 2-2**). None of these sites are listed in the AHIMS database as having been 'destroyed'².

From the currently available data from the OEH AHIMS, site cards appear to be absent for 20 sites with another 13 showing apparently incorrect location data. Investigations are underway to determine the present status of Aboriginal sites over the project area with an aim to update the AHIMS database as part of the EIS process. This will be both a desktop exercise as well as requiring input from field ground-truthing.

3.1.1 Redbank Creek: Known Cultural and Archaeological Values

The proposed Project Area includes Redbank Creek and its tributaries. This system was clearly a focus of Aboriginal occupation as is demonstrated by the large number of previously recorded sites in its vicinity. Earlier work on sites within the Redbank Creek system has shown varying levels of archaeological significance based on site contents and integrity (Umwelt 2002, 2005; ENSR 2008) and has documented the cultural significance to participating Aboriginal parties.

Several academic archaeological studies have also been produced in relation to the Redbank Creek stone artefact assemblages, such as those by Hiscock (1984a, 1984b, 1986, 1993); making Redbank Creek a well-known location in the archaeological community and increasing the perceived archaeological significance of the area.

¹ Full bibliographic references for these reports have not been included in this methodology document but a bibliography is available on request.

² Examination of the available data suggests that the current AHIMS listings of 'valid' and 'destroyed' are not an accurate indication of the actual number of extant sites in the search area. As noted, all sites are listed as 'valid' in the AHIMS database, yet it is noteworthy that 171 of these sites have had permits/consents issued in association with works for various mining operations. Therefore the actual number of destroyed sites in the vicinity of the Project Area is likely to be greater than AHIMS would indicate.

3.2 PREDICTIVE MODEL

Despite the fact that a large portion of the Project Area has been surveyed by many earlier assessments (**Figure 2-1**) there are still some portions of the proposed Project Area that have not been surveyed previously, or have only been subject to limited survey, especially in the northwest and northeast corners.

Thus there is the likelihood that a number of additional Aboriginal archaeological sites may be located during further survey associated with the Archaeological Assessment. OEH will also require resurvey of areas previously investigated (that have not been impacted by works) due to the length of time passed since many of these surveys (the current OEH perspective is that if the survey was undertaken prior to the June 2007 flood, then that the area will require resurvey as erosion instigated by the flood has been shown to have exposed many more sites). It is also probable that ongoing erosion may have exposed sites previously not recorded in these areas.

Utilising the known locations of sites within the Project Area and its locale, its environmental context and impacts of historic land-use it can be predicted that:

- Artefact scatters and isolated find sites will be located within landforms of gentle gradient associated with the main channels of the creeks as these are likely to have been attractive camping areas. Smaller sites containing low density and low complexity assemblages are predicted near semi-permanent watercourses, while the more permanent nature of Redbank Creek suggests that this creek may have been the focus of more intensive (longer duration) camping which would have produced larger sites with higher density and more complex assemblages (as is already known from previous work);
- Moderate to steeply sloping areas are unlikely to have been utilised by Aboriginal people for camping and that their use would have been generally transient in nature and therefore, would not result in the discard of large amounts of cultural heritage material making their use harder to discern archaeologically and sites less likely;
- Low gradient ridge crests and spur crests would have been attractive as an area for camping when an extensive outlook was required. The lack of water in these elevated areas would suggest, however, that camping would only have been short term and that sites would be smaller and contain low density and low complexity assemblages;
- Location of scarred trees is unlikely due to the high levels of tree clearance;
- Possibility of locating grinding grooves or engravings may be limited due to the general lack of outcropping sandstone in the creek lines in the proposed Project surface disturbance area, although land to the northwest is less well known;

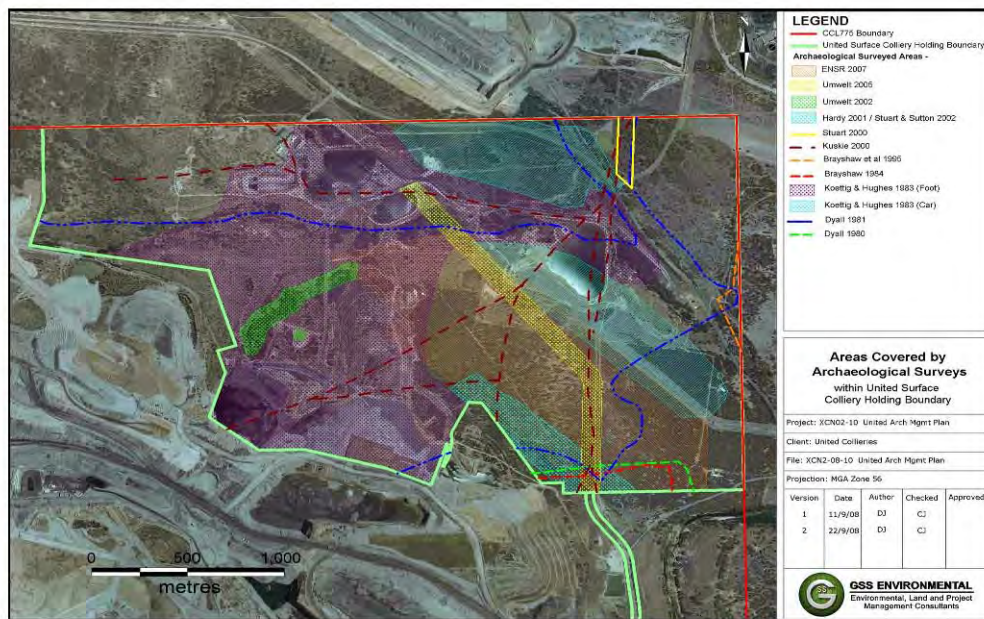


Figure 2-1: Location of Previous Archaeological Assessments.

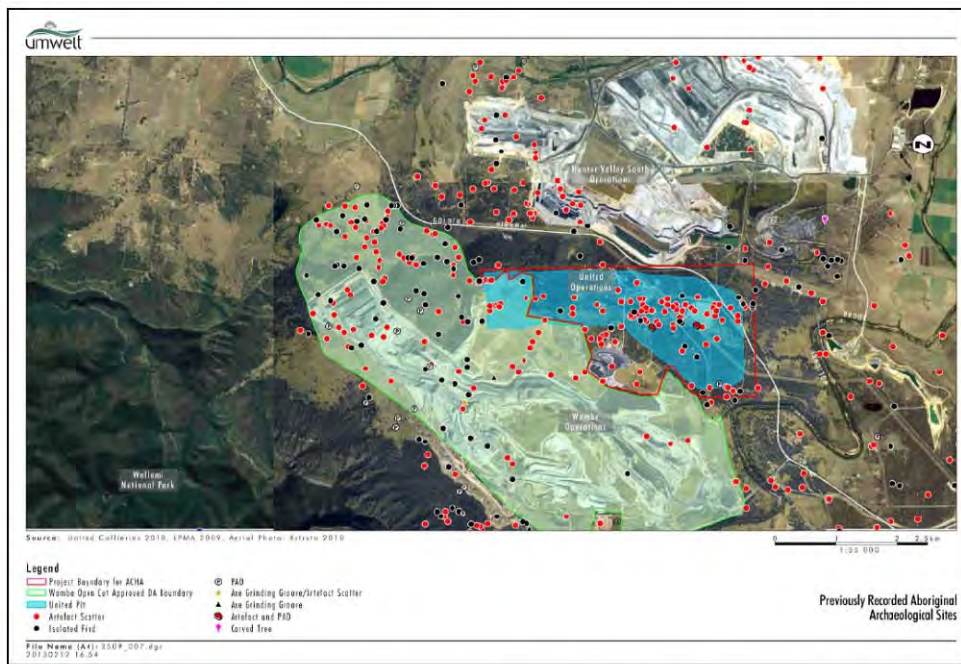


Figure 2-2: Previously Recorded Aboriginal Archaeological Sites (Source: Umwelt).

4 ASSESSMENT METHODOLOGY

The archaeological methods employed for the proposed Project will follow the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) and the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011).

Please note the following methods relate specifically to the archaeological investigation of the Project Area. More general cultural values of the area will be the subject of the consultation being undertaken by ACHM.

4.1 THE PROJECT AREA

Some of the Project Area has already undergone archaeological assessment in the past (**Figure 2-1**), and many of the previously recorded sites (**Figure 2-2**) have already had Section 90 impact permits enacted over them. Conversely, small portions of the Project Area have never been the subject of any archaeological assessment in the past (northwest and northeast portions). The methods for investigating previously assessed areas versus those never assessed, will differ slightly.

In general, this archaeological assessment will evaluate the archaeological potential of landforms within the proposed Project footprint, attempt to reassess any previously recorded sites that are thought to remain intact within the proposed Project footprint and record any previously unrecorded Aboriginal sites that may be recorded as a result of the survey.

The results of the archaeological assessment will enable a determination of the archaeological significance of various areas and/or sites within the proposed Project footprint.

The archaeological assessment report will also include recommendations for future archaeological management of areas and/or sites within the proposed Project footprint. These recommendations will be based on both the assessed archaeological significance of an area, as well as from information and suggestions gained through discussions that will be held in the field on an on-going basis with all RAP representatives present on the survey.

4.2 SURVEY

The following archaeological methodology is based on the understanding that portions of the Project Area have been previously surveyed and, in some areas, salvaged as a result of past archaeological assessments and works related to mining approvals. There is, therefore, significant knowledge about the location and likelihood of further unidentified Aboriginal objects or sites in many of these previously surveyed areas. As such, from an archaeological perspective, the appropriate survey level is lower in these assessed areas than may be the case in less studied areas. In these areas, data from previous reports, site cards and permits will be used to interpret the landscape if visibility is poor.

- Land-use practices during the modern period in the proposed Project Area will have resulted in the loss of much of the topsoil on the crests and slopes and thus acted to expose sites/destroy sites/redistribute artefacts from sites downslope. Creek bank erosion may also have acted to expose/destroy sites while migration of the creeks across their floodplains may also have acted in this manner; and
- Alluvial deposition on floodplains and terraces may have acted to bury and preserve sites. Older terraces may have the potential to contain sites of antiquity.

4.2.1 Survey Methodology

Standard archaeological field survey and recording methods will be employed in this assessment (Burke & Smith 2004).

The field assessment will be undertaken over the entire disturbance footprint. This assessment will include a buffer of at least 50 metres around the outside of the proposed Project disturbance footprint (where possible and warranted) and will include the re-visiting and re-recording of any previously recorded sites within 100 metres of the Project boundary to ensure that the site does not extend into areas where proposed impacts are to occur.

It is envisioned that fieldwork for the survey would commence in March 2015, at this stage March 23. It is estimated that there will be approximately two to three weeks of field survey.

The survey will take the form of pedestrian transects and will cover the entire disturbance footprint. This includes areas that are previously unassessed and areas with potentially high potential archaeological values (such as the in the vicinity of the Redbank Creek). This intensive survey coverage will include:

- Pedestrian field survey to identify and record any Aboriginal archaeological sites within the landscape, and to record any areas that may have potential to have subsurface Aboriginal artefacts present.
- In the northwest and northeast corners, field survey will, wherever possible, be conducted in transects of 50 metre intervals (with up to ten recorders spaced five metres apart). If field conditions do not allow straight transects some areas may be investigated more opportunistically where exposures and/or vegetation allow. This will be to assess this previously unassessed area in detail.
- If areas have significant levels of ground cover and pedestrian survey is considered by the archaeologist and RAP representatives to yield no results, then assessment will be made, based in part on knowledge gained from past archaeological research in the area, of the potential of the area to have Aboriginal artefacts present.
- To this end it is noted that a recent site visit by the Principal Archaeologist Ben Churcher noted very low levels of ground surface visibility across the site as attested by **Plates 1-5**.
- Should survey effort be impacted by low ground surface visibility, a greater amount of sub-surface test excavation will be used to investigate archaeological potential.



Plate 1: View to the south over the Project Area. Note the dense vegetation.

Plates 2 and 3 below: View of Redbank Creek vegetation.



Plates 4 and 5: View of thick grasses in open paddocks.