Lower Hunter Estates Development Heritage Impact Assessment

Black Hill and Tank Paddock

for Coal & Allied

November 2010

0111477RP01_Final

www.erm.com

Delivering sustainable solutions in a more competitive world

ERM

Approved by:	*Diana Neuweger*
Position:	Project Manager
Signed:	
Date:	*22 November, 2010*
Approved by:	*Steve Laister*
Position:	Partner Director
Signed:	
Date:	*22 November, 2010*

Environmental Resources Management Australia Pty Ltd Quality System

Lower Hunter Estates Development

Heritage Impact Assessment

Black Hill and Tank Paddock

Coal & Allied

November 2010

0111477_BH_Heritage

www.erm.com

Quality-ISO-9001-PMS302

FINAL REPORT

Coal & Allied

Lower Hunter Estates Development

Heritage Impact Assessment Black Hill &Tank Paddock

November 2010

Reference: 0111477_BlackHill_Heritage

Environmental Resources Management Australia
Building C, 33 Saunders Street
Pyrmont, NSW 2009
Telephone +61 2 8584 8888
Facsimile +61 2 8584 8800
www.erm.com

CONTENTS

EXECUTIVE SUMMARY

1 INTRODUCTION

1.1 PROJECT AND PLANNING CONTEXT 1
1.2 PROJECT DESCRIPTION 2
1.3 THE BLACK HILL SITE 3
1.4 METHODOLOGY 3
1.5 EXISTING HERITAGE STATUS 4
1.6 REPORT LIMITATIONS 4
1.7 REPORT STRUCTURE 5
1.8 AUTHORSHIP 5

2 DETAILS OF COMMUNITY CONSULTATION

2.1 HISTORICAL CONSULTATION 8
2.2 BACKGROUND – ABORIGINAL CONSULTATION 8
2.3 ABORIGINAL GROUPS CONSULTED 9
2.3.1 INITIAL CONSULTATION 9
2.4 CONSULTATION FOR FIELD SURVEY 9
2.5 FIELD ASSESSMENT 10
2.6 COMMUNITY MEETING 11
2.7 REQUIREMENTS FOR FUTURE ABORIGINAL CONSULTATION 11

3 ENVIRONMENTAL AND ABORIGINAL ARCHAEOLOGICAL CONTEXT

3.1 ENVIRONMENTAL CONTEXT 12
3.1.1 PHYSICAL DESCRIPTION 12
3.1.2 GEOLOGY 12
3.1.3 HYDROLOGY 12
3.1.4 GEOMORPHOLOGY AND LANDFORM 13
3.1.5 FLORA AND FAUNA 13
3.2 DISCUSSION OF HISTORICAL IMPACTS 14
3.3 ABORIGINAL ARCHAEOLOGICAL CONTEXT 16
3.3.1 REGIONAL ABORIGINAL HERITAGE 16
3.3.2 LOCAL ABORIGINAL HERITAGE 19
3.3.3 PREDICTIVE ABORIGINAL HERITAGE STATEMENT 19

4 HISTORICAL BACKGROUND OF BLACK HILL

4.1 EARLY REGIONAL SETTLEMENT 22
4.2 HISTORICAL OVERVIEW OF THE STUDY AREA 22
4.3 SYNOPSIS OF HISTORICAL BACKGROUND 24

CONTENTS

5	*BLACK HILL SITE SURVEY*	
5.1	*SURVEY METHODOLOGY*	*25*
5.1.1	*HISTORICAL ARCHAEOLOGY*	*25*
5.1.2	*ABORIGINAL HERITAGE*	*25*
5.1.3	*FIELDWORK CONSTRAINTS*	*26*
5.2	*SURVEY TRANSECTS*	*26*
5.3	*FIELD SURVEY RESULTS*	*28*
5.3.1	*HISTORICAL ARCHAEOLOGY*	*28*
5.3.2	*ABORIGINAL HERITAGE*	*28*
6	*HERITAGE SIGNIFICANCE ASSESSMENT*	
6.1	*HISTORICAL HERITAGE ASSESSMENT*	*36*
6.1.1	*HISTORICAL ASSESSMENT CRITERIA*	*36*
6.1.2	*BLACK HILL SITE*	*36*
6.2	*ABORIGINAL HERITAGE ASSESSMENT*	*37*
6.2.1	*ABORIGINAL ASSESSMENT APPROACH*	*37*
6.2.2	*RESEARCH POTENTIAL OF THE BLACK HILL*	*39*
6.3	*SYNOPSIS OF HERITAGE ASSESSMENT*	*40*
7	*PROPOSED CONCEPT PLANS*	
8	*ECOLOGICALLY SUSTAINABLE DEVELOPMENT (ESD)*	
8.1	*PREAMBLE TO ESD*	*45*
8.1.1	*AVOIDING OR REDUCING IMPACT TO ABORIGINAL SITES*	*45*
8.1.2	*PRINCIPLES OF ECOLOGICALLY SUSTAINABLE DEVELOPMENT*	*46*
8.2	*PROPOSED CONSERVATION (AVOIDANCE) OF HERITAGE SITES*	*47*
8.3	*PROPOSED IMPACTS TO HERITAGE SITES*	*47*
8.3.1	*HISTORICAL HERITAGE*	*47*
8.3.2	*ABORIGINAL HERITAGE*	*47*
8.4	*SUMMARY OF SITES, CONSERVATION, IMPACTS AND AFFECTS*	*48*
9	*STATUTORY CONTEXT*	
9.1	*NSW LEGISLATION*	*50*
9.1.1	*ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 (NSW)*	*50*
9.1.2	*NATIONAL PARKS AND WILDLIFE ACT 1974 (NSW)*	*51*
9.1.3	*HERITAGE ACT 1977 (NSW)*	*51*
9.2	*NSW PLANNING CONTROLS AND GUIDELINES*	*52*
9.3	*COMMONWEALTH LEGISLATION*	*53*
9.3.1	*ABORIGINAL AND TORRES STRAIT ISLANDER HERITAGE PROTECTION ACT 1984 (COMMONWEALTH)*	*53*
9.3.2	*ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT*	

CONTENTS

	1999 (COMMONWEALTH)	*53*
10	*HERITAGE MITIGATION MEASURES*	
10.1	*HISTORICAL HERITAGE MITIGATION MEASURES*	*54*
10.2	*ABORIGINAL HERITAGE MITIGATION MEASURES*	*54*
10.2.1	*GENERAL ABORIGINAL HERITAGE MITIGATIONS*	*55*
10.2.2	*ABORIGINAL SITE BH 1 AND BH 2*	*56*
10.2.3	*AREA OF LOW ARCHAEOLOGICAL POTENTIAL*	*56*
10.2.4	*AREA OF MODERATE ARCHAEOLOGICAL POTENTIAL*	*56*
11	*CONCLUSION*	

REFERENCES

ANNEX A *ABORIGINAL CONSULTATION LOG*
ANNEX B *EFFECTIVE COVERAGE TABLES*

LIST OF FIGURES

FIGURE 1.1	*BLACK HILL BLACK HILL SITE IN ITS REGIONAL SETTING*	*6*
FIGURE 1.2	*BLACK HILL SITE AREA IN ITS LOCAL SETTING*	*7*
FIGURE 3.1	*MAJOR HISTORICAL DISTURBANCES AND VINEY CREEK. BORAL ASPHALT FACILITY COLOURED RED. FORMER SITE OF IRONBARK COLLIERY COLOURED YELLOW. VINEY CREEK COLOURED BLUE.*	*15*
FIGURE 3.2	*AHIMS SITES WITHIN THE LOCALITY OF BLACK HILL STUDY AREA*	*18*
FIGURE 3.3	*ABORIGINAL ARCHAEOLOGICAL POTENTIAL. MODERATE POTENTIAL ORANGE. LOW POTENTIAL PURPLE. NO POTENTIAL UNSHADED.*	*20*
FIGURE 4.1	*1917 HEXHAM PARISH MAPS. IMAGE SOURCE: DEPARTMENT OF LANDS, PARISH MAPS PRESERVATION PROJECT, IMAGE ID 10888801.*	*23*
FIGURE 5.1	*SURVEY TRANSECTS AND LANDFORMS*	*27*
FIGURE 5.2	*ARCHAEOLOGICAL ZONING PLAN*	*35*
FIGURE 7.1	*BLACK HILL CONCEPT PLAN*	*43*

LIST OF TABLES

TABLE 3.1	*LITERATURE REVIEW OF RELEVANT ARCHAEOLOGICAL REPORTS FROM THE AHIMS DATABASE*	*17*
TABLE 3.2	*ABORIGINAL ARCHAEOLOGICAL SITE TYPES, IN ORDER OF LIKELY OCCURRENCE*	*21*
TABLE 5.1	*DESCRIPTION OF TRANSECTS SURVEYED*	*26*
TABLE 5.2	*DEFINITIONS OF ARCHAEOLOGICAL POTENTIAL*	*34*
TABLE 6.1	*SUMMARY OF HERITAGE ASSESSMENT*	*40*
TABLE 8.1	*ABORIGINAL SITES IMPACTED BY THE NEW PIPELINE*	*49*
TABLE A.1	*CONSULTATION STAGE 1: ADVISORY REQUESTS*	*A1*
TABLE A.2	*CONSULTATION STAGE 1: ABORIGINAL GROUP REGISTRATIONS RECEIVED*	*A1*
TABLE A.3	*CONSULTATION STAGE 2: BRIEFING AND METHODOLOGY ADVICE SENT*	*A2*
TABLE A.4	*CONSULTATION STAGE 2: ABORIGINAL COMMENTS RECEIVED*	*A3*
TABLE A.5	*CONSULTATION STAGE 3: DRAFT REPORT PROVIDED*	*A3*
TABLE A.6	*CONSULTATION STAGE 3: ABORIGINAL COMMENTS RECEIVED – DURING MEETING*	*A4*
TABLE B.1	*EFFECTIVE COVERAGE*	*B1*

LIST OF PHOTOGRAPHS

PHOTOGRAPH 5.1	*BLACK HILL TRANSECT 1*	*29*
PHOTOGRAPH 5.2	*BLACK HILL TRANSECT 2*	*29*
PHOTOGRAPH 5.3	*BLACK HILL TRANSECT 6*	*30*
PHOTOGRAPH 5.4	*BLACK HILL TRANSECT 7*	*30*
PHOTOGRAPH 5.5	*BLACK HILL VINEY CREEK (TRANSECT 6)*	*31*
PHOTOGRAPH 5.6	*BLACK HILL 1*	*32*
PHOTOGRAPH 5.7	*BLACK HILL 2*	*33*

EXECUTIVE SUMMARY

Environmental Resources Management Pty Ltd Australia (ERM) was commissioned by Catylis Pty Ltd, on behalf of Coal & Allied Industries Limited (Coal & Allied), to prepare a Heritage Impact Assessment (HIA) for the Black Hill Employment Lands Site (Black Hill Site) and Tank Paddock Conservation Lands Site (Tank Paddock Site). The Black Hill Site is the subject of a proposed development under Part 3A of the NSW *Environmental Planning and Assessment Act* (EP&A Act) 1979. This HIA considers the Aboriginal heritage and archaeology, historical archaeology and built heritage of the lands, the potential impacts of the proposed development on the identified heritage values and identifies an impact mitigation strategy.

The overall aim of the heritage assessment was to ascertain whether there are any heritage values associated with the Black Hill Site that could potentially be affected by the proposed development and provide relevant mitigation measures for impacts to these heritage values during any future development. The Tank Paddock site is proposed to be conserved as part of this project. A draft of this HIA was used during a community meeting for the proposed development in November 2007. The comments and outputs on heritage issues, from that meeting have informed this report.

The assessment identified no historic heritage sites or areas within the Black Hill Site. The implications and impact of development will not adversely affect any historical heritage values of the Black Hill Site or the local region.

Several Aboriginal heritage sites were identified through a Department of Environment, Climate Change and Water (DECCW) search of the Aboriginal Heritage Information Management System in the vicinity of Black Hill Site, although none of these were located immediately within the Black Hill Site. A survey of the Black Hill Site identified two Aboriginal heritage sites and defined an area with a moderate level of archaeological potential to yield further Aboriginal heritage objects. The social values of the Black Hill Site, with reference to local region, were discussed with the Aboriginal community. These values were considered during development of mitigation for Aboriginal heritage.

The outcome is that this HIA identifies areas with moderate, low and no Aboriginal archaeological potential. Specific mitigation measures are recommended for these areas. In addition, general Aboriginal heritage mitigation measures are proposed, which should be provided in a simple 'Aboriginal Heritage Plan of Management'(PoM) for the development. It is also recommended that Aboriginal heritage interpretation options be explored and implemented as part of the proposed development.

ABBREVIATIONS

AHIMS	Aboriginal Heritage Information Management System
ADTOAC	Awabakal Descendants Traditional Owners Aboriginal Corporation
ALALC	Awabakal Local Area Land Council
ATOAC	Awabakal Traditional Owners Aboriginal Corporation
AZP	Archaeological Zoning Plan
Burra Charter	Australian best heritage practice reference that provides guidance for the conservation and management of places of cultural significance (cultural heritage places).
Coal & Allied	Coal & Allied Industries Limited
DECCW	Department of Environment, Climate Change and Water
DGEARs	Director General Environmental Assessment Requirements
ERM	Environmental Resources Management
ESD	Ecologically Sustainable Development
LHRS	Lower Hunter Regional Strategy
MLALC	Mindaribba Local Area Land Council
PAD	Potential Archaeological Deposit
PoM	Plan of Management
SHI	State Heritage Inventory
SHR	State Heritage Register
SOHI	Statement of Heritage Impact
RNE	Register of the National Estate

1 INTRODUCTION

Environmental Resources Management Pty Ltd Australia (ERM) was commissioned by Catylis Pty Ltd on behalf of Coal & Allied Industries Limited (Coal & Allied) to prepare a Heritage Impact Assessment (HIA) for lands at Black Hill, which are subject to proposed development under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The HIA considers the potential Aboriginal heritage and archaeology, historical archaeology and built heritage of the Black Hill Site, the potential impacts of the proposed development and identifies an impact mitigation strategy.

This report builds upon a preliminary desktop review undertaken for the study area in January 2007 (ERM 2007). This current report provides the results of a detailed site survey, comprehensive heritage values assessments, heritage impact analysis and Aboriginal consultation undertaken during September to December 2007, for the Black Hill & Tank Paddock Project Site (see *Figure 1.1* and *Figure 1.2*).

1.1 PROJECT AND PLANNING CONTEXT

Coal & Allied Lower Hunter lands including Black Hill & Tank Paddock are included in the Lower Hunter Regional Strategy (LHRS) for urban development and conservation. Coal & Allied is one of four major landowners within the region that are able to play a significant role in achieving the LHRS's environmental and conservation outcomes and sustainable growth.

Coal & Allied are proposing to dedicate 2956 ha (78 per cent) of Coal & Allied land for a conservation corridors. The proposed conservation lands are areas of high conservation value in the nominated green corridors that will be dedicated to the NSW Government. The conservation lands are similarly identified in the Lower Hunter Regional Conservation Plan prepared by the Department of Environment, Climate Change and Water (DECCW).

On 16 August 2010, the Director General Environmental Assessment Requirements (DGEARs) were issued for the Black Hill Site. The requirements for heritage are:

(1) Provide an assessment in accordance with the Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC, 2005) and measure to avoid, mitigate and/or manage any impacts during construction and operation.

1.2 PROJECT DESCRIPTION

It is proposed that the entire Coal & Allied owned Black Hill and Tank Paddock sites be rezoned/listed as a 'State Significant Site' (SSS) in Schedule 3 of State Environmental Planning Policy (Major Development). A draft Schedule 3 listing was be prepared with the Concept Plan Application.

The Concept Plan applies to the entire 183ha Black Hill and the 147ha Tank Paddock sites as well as 398ha of the Stockrington site. The key parameters for the proposed development of the sites are as follows:

- Dedication of 545ha of conservation land to the New South Wales Government (NSWG) that is identified in the Lower Hunter Regional Strategy and Lower Hunter Regional Conservation Plan, comprising 100% of the Tank Paddock site and 398ha of the Stockrington site.

- Use of the 183ha Black Hill site as 'employment lands' for a range of employment generating industrial and support activities.

- Indicative development staging. The number of lots and extent of staging for release areas will be largely dictated by the service infrastructure requirements as well as responding to market forces.

- The provision of associated infrastructure.

Approval will not be sought under the Concept Plan for a specific lot or road layout. An indicative super- lot layout will be prepared, which will indicate how subdivision could be achieved that will enable a range of industrial and ancillary activities to be undertaken.

An existing mining consent under the Black Hill site will defer development on the site until post June 2013. Accordingly, a detailed built form layout has not been prepared at this stage. Approval is not sought under the Concept Plan for subdivision or for individual buildings on the site. Urban Design Guidelines will be prepared to inform the Concept Plan in respect of urban form, built form, open space and landscape, access and movement and visual impact for the site.

It is proposed to dedicate land for conservation purposes via a Voluntary Planning Agreement (VPA) between Coal & Allied and the NSWG in accordance with s.93F of the EP&A Act.

1.3 THE BLACK HILL SITE

This report focuses on the Black Hill Site in one portion of land, between John Renshaw Drive and the F3 Freeway at Black Hill, Lower Hunter Valley, NSW. The Tank Paddock Site while part of this proposal will be completely conserved and therefore no further consideration is provided in this impact assessment. The location of the Black Hill Site is provided at *Figure 1.1* and the Potential Developable Area is shown in *Figure 1.2*.

1.4 METHODOLOGY

The overall aim of this assessment was to ascertain whether there are any heritage values associated with the Black Hill Site which may be affected by the proposed development. If so, then appropriate and relevant mitigation measures would need to be provided for these impacts prior to, during and following future development. To achieve these aims the following objectives were established:

- to undertake a preliminary background desk based review of potential heritage items within and adjacent to the Black Hill Site (ERM 2007);
- to identify and record all heritage objects and places within the Black Hill Site through field survey;
- to consult with the local Aboriginal community regarding the specific Aboriginal social value of the land and the Aboriginal heritage recommendations;
- to assess the significance of all heritage objects, sites, objects and places within the Black Hill Site in accordance with relevant NSW heritage guidelines;
- to assess the archaeological potential of the Black Hill Site to contain further heritage sites and culminating in an archaeological zoning plan (AZP);
- to assess the impact of the proposed development on heritage values through a Statement of Heritage Impact (SoHI); and
- to prepare recommendations on the management and mitigation of potential impacts caused by development to any heritage values associated with the Black Hill Site.

ERM's approach to the preparation of the detailed site assessment was based on the following current best practice guidelines:

- NSW Heritage Office *Assessing Significance* Guideline;
- NSW Heritage Office *Statements of Heritage Impact* Guideline;
- Department of the Environment, Climate Change and Water (DECCW) *Draft Guideline for Aboriginal Cultural Heritage Impact Assessment and Community Consultation*;
- The *Australia ICOMOS Burra Charter 1999* (Burra Charter);
- *Rio Tinto Cultural Heritage Management Guidelines for Australian Businesses*; and
- *Rio Tinto Cultural Heritage Management System Guidance for Australian Businesses*.

1.5 EXISTING HERITAGE STATUS

The preliminary background investigation included a search of the NSW Heritage Office State Heritage Register (SHR) and Inventory (SHI), the DECCW Aboriginal Heritage Information Management System database (AIHMS), the Newcastle Local Environmental Plan (LEP), the Register of the National Estate (RNE) and the National Trust Register. It was found that no previously recorded historical heritage sites existed within the Black Hill Site. The Black Hill Site did not have registered Aboriginal sites within its boundary, although several Aboriginal sites were located in close proximity, primarily to the north and east.

1.6 REPORT LIMITATIONS

The survey of the Black Hill Site was limited by the vegetation cover that was present, although numerous fire tracks and easements enabled access to representative tracts of moderately cleared land. It is considered that a sufficient representative sample of the Black Hill Site was surveyed in order to provide evidence of landforms, historical impacts, heritage sites and soil horizons allowing identification of zones with archaeological potential.

1.7 REPORT STRUCTURE

This report is structured as follows:

Chapter 2 outlines the community consultation undertaken for the Black Hill & Tank Paddock Black Hill Site;

Chapter 3 provides the environmental and archaeological context of the study area, including known and potential heritage sites within the Black Hill Site;

Chapter 4 provides an overview of the history of the Black Hill Site;

Chapter 5 outlines the survey methodology and results of the field survey;

Chapter 6 assesses the significance of heritage sites located on or in close proximity of the Black Hill Site;

Chapter 7 provides the proposed development structure plans;

Chapter 8 provides an overview of Environmental Sustainable Development and the conservation and impacts to heritage items in the Black Hill site;

Chapter 9 outlines the legislative framework and statutory requirements;

Chapter 10 provides heritage impact mitigation recommendations; and

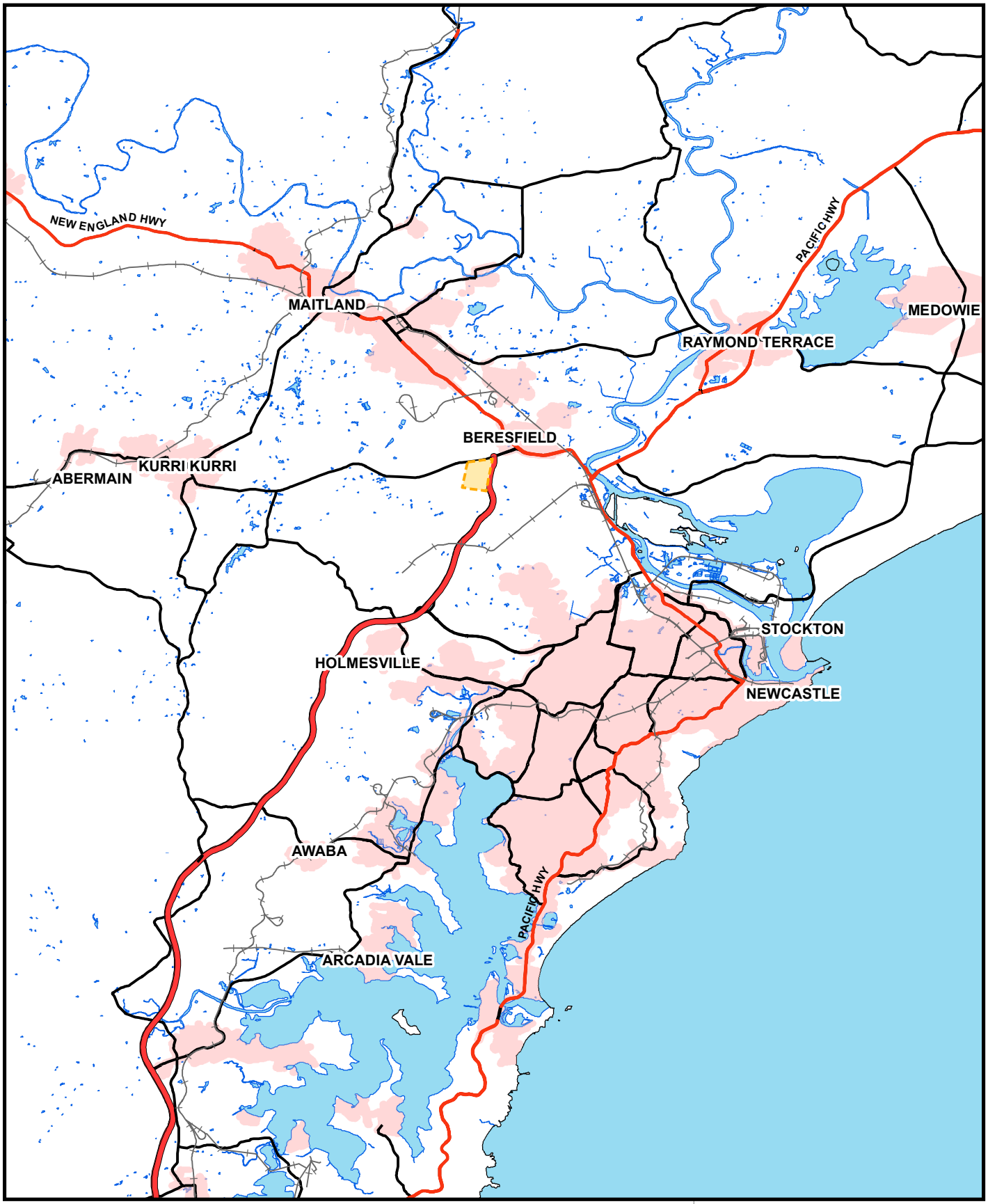
Chapter 11 provides a brief conclusion outlining the findings of the HIA.

Annex A Aboriginal consultation log

Annex B effective coverage table

1.8 AUTHORSHIP

Dr Tim Owen (ERM Senior Archaeologist) conducted the historical heritage field survey. Guadalupe Cincunegui (ERM Archaeologist) and Tim Owen conducted the Aboriginal heritage field survey. Guadalupe Cincunegui and Tim Owen authored this report. Shelley James (ERM Senior Heritage Consultant) undertook a technical review of this report. Dr Diana Neuweger (ERM Heritage Consultant) undertook the 2010 edits to this report. Steve Laister (ERM Partner) undertook QA review of the report.



Legend

Black Hill Employment Lands Site

Client:	Catylis
Project:	Lower Hunter Land Development
Drawing No:	0111477s_BH_GIS001_R0.mxd
Date:	18/02/2010 Drawing size: A4
Drawn by:	JF Reviewed by: DN
Projection:	GCS GDA 1994
Scale:	Refer to Scale Bar

N

0 2 4 6km

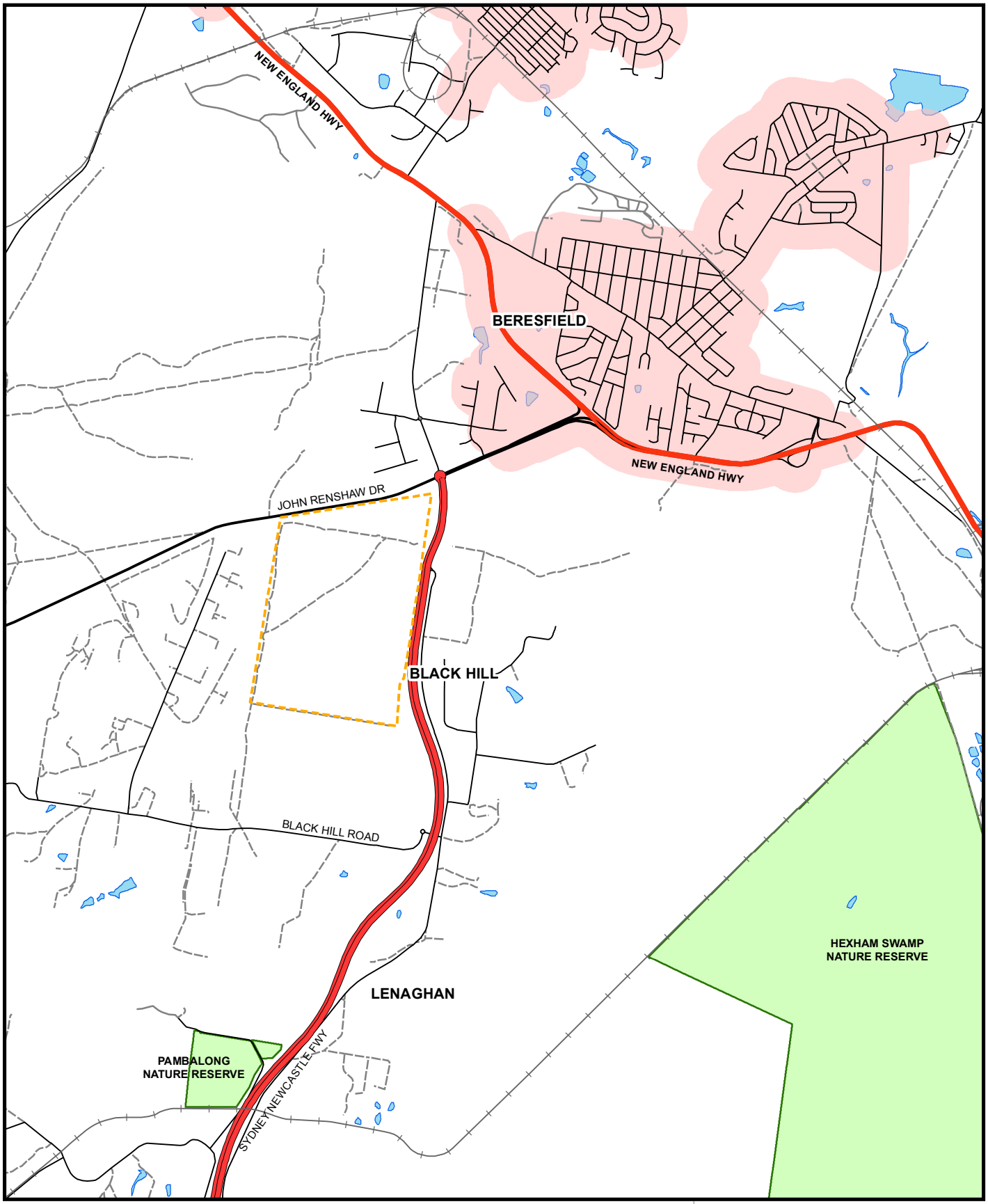
Figure 1.1

Black Hill Employment Lands Site in its Regional Setting

Environmental Resources Management Australia Pty Ltd

Brisbane, Canberra, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney

ERM



Legend

Black Hill Employment Lands Site

Client:	Catylis
Project:	Lower Hunter Land Development
Drawing No:	0111477s_BH_GIS002_R0.mxd
Date:	18/02/2010 Drawing size: A4
Drawn by:	JF Reviewed by: DN
Projection:	GDA 1994 MGA Zone 56
Scale:	Refer to Scale Bar

N

0 390 780 1,170m

Figure 1.2

Black Hill Employment Lands Site in its Local Setting

Environmental Resources Management Australia Pty Ltd

Brisbane, Canberra, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney

ERM

2 DETAILS OF COMMUNITY CONSULTATION

2.1 HISTORICAL CONSULTATION

Consultation was undertaken with Black Hill residents concurrently with Aboriginal community consultation. ERM were informed that the area had been farmed and de-vegetated during the historical period (i.e. past 150 years), but that no specific heritage values could be attributed to the Black Hill Site.

2.2 BACKGROUND – ABORIGINAL CONSULTATION

This chapter contains specific details of Aboriginal community consultation with regard to ERM's heritage assessment of the Black Hill Site.

Aboriginal consultation is required for any assessment of Aboriginal heritage. The DECCW has released the 'Interim Community Consultation Requirements Guideline' (2005) for Aboriginal consultation are used to support, and are a requirement of, any Part 3A Aboriginal heritage assessment.

The interim guideline sets out a process for inviting Aboriginal groups to register interest as a party to consulate (including local press advertisement), seeking responses on proposed assessment methodology, and seeking comment on proposed assessments and recommendations. The interim guideline requires proponents to allow 10 working days for Aboriginal groups to respond to invitations to register, and then 21 days for registered Aboriginal parties to respond to a proposed assessment methodology. An additional 10 days are allowed for groups to review a draft report and comment on the results and management recommendations.

The Aboriginal community consultation for the project has been carried out in accordance with the DECCW guidelines, taking into account the Part 3A requirements of the project. The final Director General's Environmental Assessments Requirements (DGEARs) for the proposed development stated that the DECCW's guidelines should be adhered to and consultation with the Local Aboriginal Land Council should be undertaken.

2.3 ABORIGINAL GROUPS CONSULTED

2.3.1 Initial Consultation

Letters requesting advice on Aboriginal organisations to consult, and any known heritage issues to be taken into consideration in the area, were emailed on 28 June 2007[1] to:

- the NSW DECCW;
- Registrar, *Aboriginal Land Rights Act 1983* (NSW);
- Mindaribba Local Area Land Council (MLALC); and
- Awabakal Local Area Land Council (ALALC). [The ALALC land boundary is to the south of Black Hill; therefore ALALC did not participate in the survey].

In addition, a number of other Aboriginal stakeholder groups were already known by ERM for this area, and were also contacted on 28 June 2007:

- Kerrie Brauer from Awabakal Traditional Owners Aboriginal Corporation (ATOAC);
- Shane Frost and James Frost from Awabakal Descendants Traditional Owners Aboriginal Corporation (ADTOAC); and
- John Thorp from Kukuyngal Barritjapa.

2.4 CONSULTATION FOR FIELD SURVEY

A local press advertisement requesting local Aboriginal stakeholders interested in being consulted, was run in the *Wallsend Leader Newspaper*, Newcastle on 1 October 2007. No responses to this advertisement were received.

Therefore a total of four Aboriginal stakeholders (MLALC, ATOAC, ADTOAC and Kukuyngal Barritjapa) were identified for consultation during the current assessment.

[1] This first phase of consultation was undertaken in June, a meeting between the community, Aboriginal Stakeholders and technical experts to explain the proposed development and hear any comments and concerns of the community.

Each group was provided with a written survey methodology, by post and email, on 22 October 2007. The four identified Aboriginal stakeholder groups were all contacted by phone (22 October 2007) to discuss:

- Aboriginal stakeholders involved in the heritage assessment;
- the methodologies for the assessment;
- known Aboriginal sites in the Black Hill Site; and
- the history of the impact across the Black Hill Site and any comments the Aboriginal groups had in regard to Aboriginal tangible and intangible heritage values, the survey and this development.

All stakeholders agreed to the proposed methodology.

No further Aboriginal parties have so far been identified through the consultation process. Further details of the Aboriginal consultation undertaken for the Black Hill Site are provided in *Annex A*.

2.5 FIELD ASSESSMENT

Fieldwork for the assessment was undertaken on 29 October 2007 and included a total of four local Aboriginal community representatives: Kerrie Brauer (ATOAC); Shane Frost and James Frost (ADTOAC) and John Thorpe from Kukuyngal Barritjapa. As the MLALC were not able to participate in the October survey, the Black Hill Site was re-surveyed (retracing the original survey route), by Ricky Griffiths on 14 December 2007.

The field survey aimed to inspect all areas with ground surface visibility within the Black Hill Site. The survey route was discussed with the Aboriginal stakeholders prior to and on the morning of the survey. This resulted in additional survey transects through areas the Aboriginal representatives wished to inspect.

During the survey (October and December 2007), ERM archaeologists discussed local Aboriginal heritage values and patterning with the community representatives. This provided an understanding of the local perspective for Aboriginal habitation and subsistence patterns; as well as understanding intangible values. When Aboriginal sites were identified, all participants were involved in recording the site, determining its extent and archaeological potential. At the completion of the survey an open discussion was held, where the sites recorded, the archaeological potential and required investigation were discussed and agreed upon by all present. The outcomes of this consultation underwrite this heritage assessment.

2.6 *COMMUNITY MEETING*

A meeting was held on 19 November 2007 for the purpose of community comment in relation to the proposed development. All Aboriginal stakeholder groups were represented at the meeting. This meeting was also used to provide the results of reporting to the Aboriginal groups and fine tune the statements of commitment, with regard to Aboriginal heritage.

The DECCW was represented at the meeting. The input from the DECCW with regard to Aboriginal heritage informed the recommendations of this assessment document.

2.7 *REQUIREMENTS FOR FUTURE ABORIGINAL CONSULTATION*

It is recommended that copies of the draft final report are sent to the four registered Aboriginal parties, so that they may comment on its content and recommendations. The comments of these parties should be appended to this report when received, as per the DECCW guidelines. Any future work relating to the Aboriginal archaeological mitigation, as stipulated in this report, should include consultation with the relevant Aboriginal stakeholders.

3 ENVIRONMENTAL AND ABORIGINAL ARCHAEOLOGICAL CONTEXT

3.1 ENVIRONMENTAL CONTEXT

3.1.1 Physical Description

The Black Hill Site is located to the south west of the junction between the F3 freeway (Lenaghan's Drive) and John Renshaw Drive, approximately 2.2 km south east of Tarro (*Figure 1.1*). The Black Hill Site includes an area leased to Boral Asphalt in the north-eastern portion, a network of unsealed vehicle tracks, and is traversed by two transmission line clearings (N-S on the western boundary and E-W inside the northern boundary). A Hunter Water Corporation pipeline runs adjacent to the northern boundary along John Renshaw Drive.

3.1.2 Geology

The Black Hill Site is located within the Hunter Valley Dome Belt of the Sydney Basin. The geology of the study area consists of Tomago Coal Measures of Permian age formed under a marine influence. The Tomago Coal Measures extend from the western margin of Hexham Wetlands to East Maitland. The Dempsey Formation of the Tomago Coal Measures occurs within the study area and consists of shales, mudstones, subordinate sandstones, thin coal seams and tuffaceous clays (Kuskie & Kamminga 2000; 29-30). Bedrock outcropping (some sandstone and shales observed) are present within the Black Hill Site.

3.1.3 Hydrology

The availability of water has significant implications for the range of resources available and the suitability of the area for human occupation. Viney Creek (a second order creek – Strahler model) runs through the centre of the Black Hill Site in a northerly direction (*Figure 3.1*). A section of the creek line extending south from the northern boundary has been modified by earthworks for approximately 300m.

The close proximity of the site to Hexham Swamp has also been taken into consideration as it is likely that the use of this land was tied closely to subsistence strategies associated with economic access to fresh water plant, animal and avid species.

The surface typology and hydrology of the study area may have been affected by subsidence caused by historical mining activities (Navin Officer 1995:5-6). It is therefore possible that the current drainage pattern differs from the original Holocene pattern. However, mapping of the extent of the historical mine (see *Figure 3.1*) suggests that this impact will be associated with the surface activities associated with the former Ironbark Colliery and limited to the central northern portion of the study area.

3.1.4 Geomorphology and Landform

The Black Hill Site is located in the Lower Hunter region within the Central lowlands, which is a belt of lowlands extending through the centre of the Hunter Valley between Murrurundi and Newcastle, developed on relatively weak sedimentary rock (Kuskie & Kamminga 2000:25). The Black Hill Site is situated on a landform pattern comprising undulating low hills and rises on Permian sediments. It is also located approximately 1km west of Hexham Swamp which is part of the Lower Hunter barrier estuary (NPWS 1998:13). This is manifest through low rises and slopes and the open depression of Viney Creek. Observation of soil horizons indicated that the Black Hill Site was covered by duplex soils where modern organic A1 horizons abutted weathered shallow A2 soil and B horizon clay. The depth of the A horizon was in general quite shallow (>0.2 m), except for the area adjacent to Viney Creek, where incision of the creek into the surrounding soil matrix revealed a greater depth (~0.5 m) of A1/A2.

3.1.5 Flora and Fauna

A survey undertaken by Harper Somers O'Sullivan (now RPS) in 2005 (updated in 2007) for the project found that the vegetation occurring in the Black Hill survey area generally comprised the following vegetation communities?:

- Coastal Foothills Spotted Gum - Ironbark Forest;
- Lower Hunter Spotted Gum – Ironbark Forest and;
- Alluvial Tall Moist Forest.

Vegetation in the survey area predominantly comprises medium to heavy density Ironbark Forest. It was noted during the survey that the vegetation across the Black Hill Site was generally 'young' (i.e. not over 100 years old). This was confirmed through consultation with local residents who informed ERM of the historical use of the area for timber 'getting'. The deforestation has implications for the type of Aboriginal sites likely to be located within the Black Hill Site and their integrity.

The Harper Somers O'Sullivan report (2005) also notes a range of fauna species present or likely to be present in the Black Hill Site, which predominantly comprise birds, small mammals, frogs, reptiles and eels.

3.2 *DISCUSSION OF HISTORICAL IMPACTS*

Historical Disturbances

The Black Hill Site has been significantly impacted through various activities that have taken place primarily over the last one hundred years. The most significant, which have impacted soil horizons, and thus potentially heritage sites are:

- Mining related activities;
- de-vegetation; and
- asphalt production.

The location of the mining related activity and asphalt production are shown in *Figure 3.1*. Further impacts include introduction of roads/tracks, gravels for the tracks, the transmission lines, the water pipeline, historical localised quarrying and dumping of rubbish.

Historical mining related activity (the Ironbark Colliery) was located in the central north of the Black Hill Site. Cutting the pit entrance and associated roads has significantly impacted soil horizons and vegetation in the area of the former colliery. These impacts are deep and incised bedrock to some of the coal measures. This has resulted in impact to any heritage sites that would have been located within this area.

The installation and operation of the asphalt facility has resulted in substantial soil and vegetation removal from the area within the fenced boundary. Again this would have significantly impacted any heritage sites within the perimeter of the facility.

Devegetation has occurred across the majority of the Black Hill Site. This activity appears to have occurred between 75 and 100 years ago (possible 19th century timber cutting activities cannot be confirmed). Devegetation appears to have resulted in the removal of mature trees, with some disturbance to the upper soil horizons. This action would most likely have impacted buried heritage sites (i.e. Aboriginal stone artefact sites),

Figure 3.1 ***Major Historical Disturbances and Viney Creek. Boral Asphalt facility coloured red. Former site of Ironbark Colliery coloured yellow. Viney Creek coloured blue.***

All other impacts can be described as localised, where the activity has wholly impacted the soil horizons directly associated with the activity i.e. quarrying has removed soil and bedrock from the area of the quarry, or track creation has resulted in erosion to the track and has involved the importation of gravel material.

Overall, it is suggested that soil horizons within the Black Hill Site have been impacted to some degree, although the majority retains the potential to contain heritage materials, objects or artefacts. However, the condition and integrity of any one site should to be determined on a localised basis through inspection of local soil conditions during the Black Hill Site investigations.

3.3 ABORIGINAL ARCHAEOLOGICAL CONTEXT

3.3.1 Regional Aboriginal Heritage

Prior to European settlement the Pambalong people (a sub-group of the Awabakal people of Lake Macquarie) inhabited the Hexham Swamp region. The natural resources of Hexham Swamp were extensively utilised by the Pambalong people and later by settlers in the Hexham and Minmi district. The Pambalong territory extended from the south bank of the Hunter River west to Tarro and south to Lake Macquarie (Effenberger & Baker 1996:8-9).

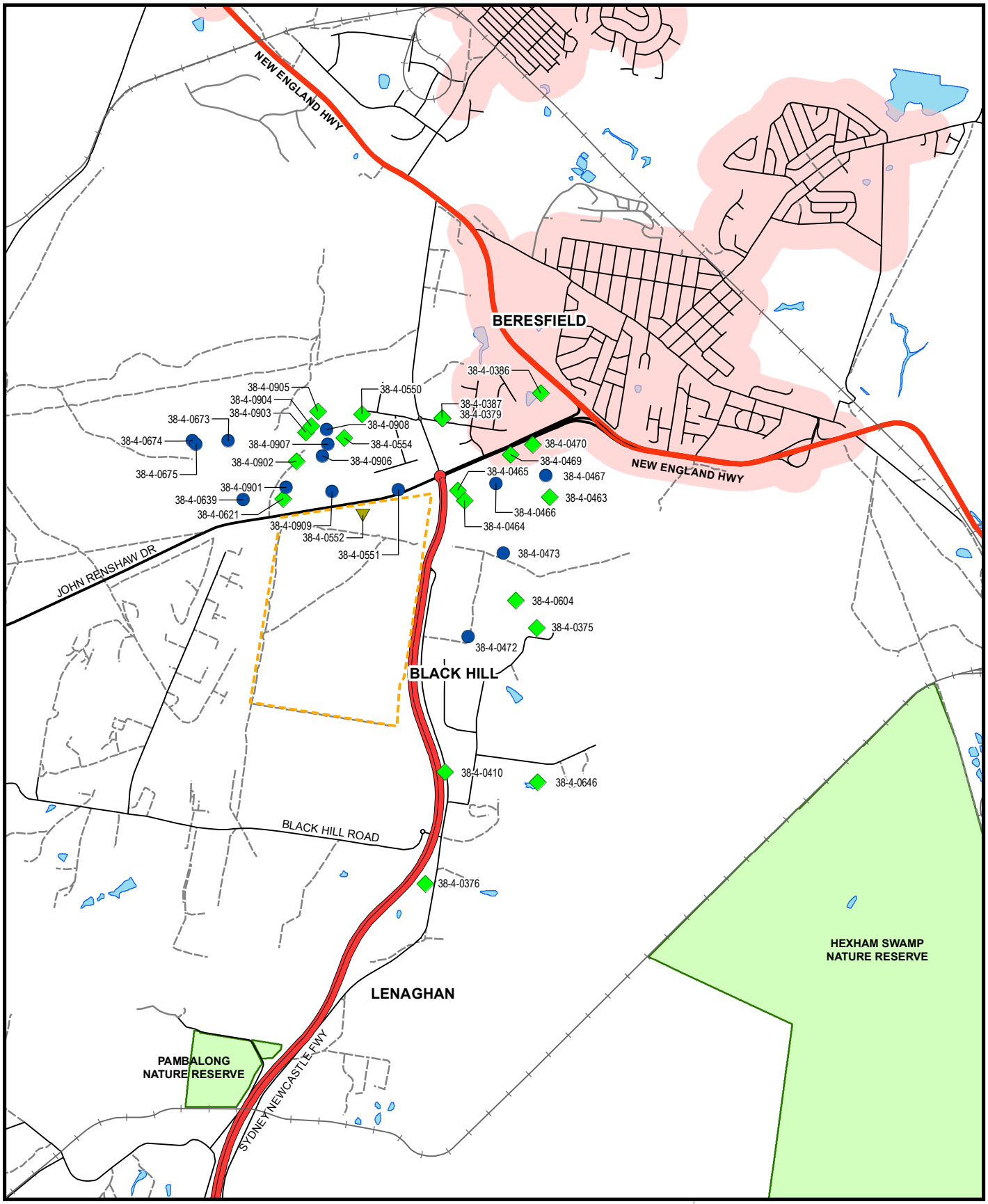
Pambalong territory was progressively destroyed by mining in the region from the mid 19th century onwards. This included the Pambalong ceremonial ground which featured rock shelves and small caves and later became known as Stockrington (Effenberger & Baker 1996:9).

A brief literature review of the NSW DECCW library was undertaken to understand the broader region's archaeological patterning. This review was targeted to those reports relevant to the Black Hill Site. Key word searches were used to find reports for the locality in AHIMS. *Table 3.1* lists reports that were reviewed and the locality with which they were concerned.

The general patterning of Aboriginal sites in the local area show a strong association with water and the immediate hinterland. This reflects Aboriginal focus on resources associated with water.

Table 3.1 Literature Review of Relevant Archaeological Reports from the AHIMS Database

Author of Report	Distance from Black Hill Site	Type of development/ report	Locality	Sites Recorded
Effenberger & Baker	On F3 Freeway within 500m of the southern boundary of Black Hill Site	Aboriginal archaeological survey, assessment & test excavation	Two sites along the F3 Freeway – Wood's Gully & Black Hill Road	66 test pits yielded extremely high density of stone artefacts, particularly at Woods Gully. Majority were silcrete, with some Nobby's Tuff, and small amounts of quartz and quartzite.
ERM (2007)	Approx. 1.5 km north	Aboriginal archaeological survey	North of Billbabourie Road, Black Hill	Extension of one previously recorded midden, including shell and stone artefacts.
ERM Mitchell McCotter (1997)	Forsythe Parade, Woods Gully, approx. 500m south west of Black Hill Site	Application for preliminary research permit for residential development	Lot 422 DP 791776 No. 21A Forsythe Parade Black Hill	Project design for sample excavations due to high likelihood of subsurface deposits.
ERM Mitchell McCotter (1996)	Forsythe Parade, Woods Gully, approx. 500m south west of Black Hill Site	Flora, Fauna and Archaeology survey for residential development	Lot 422 DP 791776 No 21A Forsythe Parade Black Hill	One artefact scatter located on the surface comprising yellow mudstone flakes, red mudstone flakes, grey silcrete flake and core and a piece of bone.
Kuskie & Kamminga (2000)	On F3 Freeway, within 1 km of the southern boundary of Black Hill Site.	Salvage Report for sites recorded by Effenberger & Baker for F3 Freeway Construction	Two sites along the F3 Freeway – Woods Gully & Black Hill Road	One artefact scatter located on the surface comprising yellow mudstone flakes, red mudstone flakes, grey silcrete flake and core and a piece of bone.
Kuskie (2006)	Included Black Hill Site	Aboriginal Heritage Assessment for Abel Underground Mine	Two areas on north and south (2750 hectares) of John Renshaw Drive	38 sites comprising stone artefact scatters, grinding groove sites and a scarred tree. 21 of these occur in the southern area, none of which occur in the Black Hill Site. Only targeted field survey undertaken.
Silcox & Ruig (1995)	500m east of Black Hill Site	Test excavations	13 ha on western edge of Hexham Swamp adjacent to Ebenezer Park	218 test pits yielded 663 stone artefacts, the majority being indurated mudstone and silcrete, with small amounts of quartz, chert and quartzite. Artefacts included backed blades, flakes and cores.



Legend

- Black Hill Employment Lands Site
- Isolated Find
- PAD
- Stone Artefact Scatter

Client:	Catylis
Project:	Lower Hunter Land Development
Drawing No:	0111477s_BH_GIS003_R0.mxd
Date:	18/02/2010 Drawing size: A4
Drawn by:	JF Reviewed by: DN
Projection:	GDA 1994 MGA Zone 56
Scale:	Refer to Scale Bar

N

0 400 800 1,200m

Maps and figures contained within this document may be based on third party data, may not be to scale and is intended for use as a guide only. ERM does not warrant the accuracy of any such maps or figures.

Figure 3.2

AHIMS Sites within the Locality of the Black Hill Employment Lands Site

Environmental Resources Management Australia Pty Ltd

Brisbane, Canberra, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney

ERM

3.3.2 Local Aboriginal Heritage

Black Hill Site AIHMS Data

A search of the AIHMS at DECCW within a 4km by 3km area centred around the Black Hill Site was undertaken. The search identified 35 recorded sites (Figure 3.2), which comprised 20 stone artefact scatters, 14 isolated artefact finds and one Potential Archaeological Deposit (PAD). This search indicated that Aboriginal artefact scatters and isolated artefacts constitute the predominant remnants recorded in this area.

The general patterning of Aboriginal sites in the local area shows a strong association with the use of the natural resources available around Hexham Swamp. There is a general pattern in the region of stone artefact sites being concentrated along watercourses and Black Hill's close proximity to Hexham Swamp should be noted.

A PAD (38-4-0552) has been recorded outside the Black Hill Site to the north of John Renshaw Drive. A light background scatter of artefacts was recorded across the 46 hectare site (the 'Freeway' industrial estate). Subsurface artefact concentrations were recorded in the area of the confluence of Viney Creek and Weakley's Flat Creek. This was approximately 750m north of the current Black Hill Site. The site card also notes that the majority of the area had been extensively disturbed by tree clearance, stump burning and cultivation.

The other recorded sites within the vicinity are situated outside the boundary of the Black Hill Site. These consist mainly of isolated artefacts and artefact scatters.

3.3.3 Predictive Aboriginal Heritage Statement

Based upon the environmental background, historical impacts, regional and local archaeological patterns it is possible to provide a predictive statement for the occurrence of Aboriginal sites within the Black Hill Site.

Due to the disturbed nature of the Black Hill Site by mining related activities, the asphalt facility and tree clearance, the archaeological potential (defined here as relating to the possibility of discovering heritage sites with a reasonable condition and integrity) of the Black Hill Site can be described as none to moderate. Areas associated with the former mine site and asphalt facility have no archaeological potential, the areas directly adjacent to the banks of Viney Creek (within 50 m) have a moderate potential, the remainder of the Black Hill Site has a low archaeological potential (*Figure 3.3*).

It is predicted that stone artefact sites (scatters and isolated finds) are the Aboriginal site types most likely to be found within the Black Hill Site. Stone artefacts are considered most likely to be found on the flat adjacent to Viney Creek, although patterning across the local areas indicates the possibility for artefact sites to be visible wherever exposures are evident. Scarred or carved trees are unlikely due to holistic vegetation clearance. *Table 3.2* provides a summary of Aboriginal site types and the likely occurrence.

Figure 3.3 ***Aboriginal archaeological potential. Moderate potential orange. Low potential purple. No potential unshaded.***

Table 3.2 Aboriginal archaeological site types, in order of likely occurrence

Site types	Definition
Open sites [stone artefact scatters]	Open sites, also known as open campsites, are usually indicated by surface scatters of stone artefacts and sometimes fire blackened stones and charcoal. Where such sites are buried by sediment they may not be noticeable unless exposed by erosion or disturbed by modern activities. The term campsite is used as a convenient label which, in the case of open sites, does not necessarily imply that Aboriginal people actually camped on the sites; rather it indicates only that some type of activity was carried out there.
Middens	Middens consist of accumulations of shell that represent the exploitation and consumption of shellfish by Aboriginal people. Shell species may be marine, estuarine or freshwater depending on the environmental context and middens may also include other faunal remains, stone artefacts, hearths and charcoal.
Grinding grooves	Grooves resulting from the grinding of stone axes or other implements are found on flat areas of suitable sandstone. They are often located near waterholes or creek beds as water is necessary in the sharpening process. In areas where suitable outcrops of rock were not available, transportable pieces of sandstone were used.
Quarries	These are areas where stone was obtained for flaked artefacts or ground-edge artefacts, or where ochre was obtained for rock paintings, body decoration or decorating wooden artefacts.
Art sites	Aboriginal paintings, drawings and stencils are commonly to be found where suitable surfaces occur in sandstone shelters and overhangs. These sites are often referred to as rock shelters with painted art. Rock engravings, carvings or pecking are also to be found on sandstone surfaces both in the open and in shelters. These are referred to as rock engraving sites.
Scarred trees	Scarred trees bear the marks of bark and wood removal for utilisation as canoes, shields, boomerangs or containers. It is commonly very difficult to confidently distinguish between Aboriginal scars and natural scars or those made by Europeans.
Burial sites	Burials may be of isolated individuals, or they may form complex burial grounds.
Stone arrangements, carved trees and ceremonial grounds	These site types are often interrelated. Stone arrangements range from simple cairns or piles of rocks to more elaborate arrangements; patterns of stone laid out to form circles and other designs, or standing slabs of rock held upright by stones around the base. Carved trees are trees with intricate geometric or linear patterns or representations of animals carved into their trunks. Ceremonial grounds and graves were often marked by such trees. Bora grounds are a common type of ceremonial site and they are generally associated with initiation ceremonies. They comprise two circles, generally edged with low banks of earth but sometimes of stone, a short distance apart and connected by a path.

4 HISTORICAL BACKGROUND OF BLACK HILL

4.1 EARLY REGIONAL SETTLEMENT

The settlement and development of the greater Newcastle area is closely associated with the rich coal seams of the Hunter region. Newcastle was settled in the early years of the 19th century and the extraction of coal, lime, timber and salt using convict labour ensued over the next twenty years in the region.

The Hunter Valley was opened up to free settlement in 1820 following John Howe's discovery of an inland route from the Hawkesbury River to Patrick Plains. Extensive land grants were made along watercourses and farming for sheep and cattle commenced soon after (ERM 2006:5).

The railway network was established in response to the need for reliable transportation of coal in the 1850s, with the construction of the Great Northern Railway commencing in 1854. At the same time, private railways were constructed to transport coal to the port in Newcastle from recently established mines in Minmi, Wallsend, Lambton and Waratah. This included the Richmond Vale Railway which was commenced by John Eales in 1857 to transport coal between his mine at Minmi to a coal landing wharf in Hexham.

With this improvement in transportation several villages in the hinterland began to grow and would later become suburbs to the city of Newcastle. Many of these towns and villages were closely connected to the development of the coal industry.

The Richmond Vale Railway ceased operation with the closing of Stockrington Colliery in 1984 (NPWS 2006:9).

4.2 HISTORICAL OVERVIEW OF THE STUDY AREA

The Black Hill study area is located approximately 4.5km north of Minmi and approximately 5km west of Hexham. The former Richmond Vale Railway line runs between Minmi and Hexham approximately 2km to the east of the Black Hill Site.

The Parish of Hexham Parish Maps for 1917, 1922, 1934 and 1954 (1917 shown in *Figure 4.1*) all indicate that the land where the Black Hill Site is located was owned by Thomas Walker throughout this period. An alignment 40 feet wide running through the north-eastern corner of the land parcel is noted as resumed for the Newcastle and Hunter District Pipeline on the all of the parish maps. The road that is now the F3 Freeway is marked on all of the parish maps. The 1954 map also includes the annotation "Ironbark Mine Subsistence District–Proclaimed '71". No other changes to the land are indicated for this period.

The Ironbark colliery can be associated with this period, when exploration was made in the area to determine the extent of the coal measures. A shaft was sunk, but no coal mining was undertaken prior to the abandonment of the colliery. No colliery infra-structure remains within the study area.

Aerial photographs also indicate little activity on the site until the period between 1966 and 1975. The 1966 photograph indicates that man-made changes to the alignment of Viney's Creek have been undertaken. The 1975 aerial photograph indicates that the property entrance road has been widened and several other small tracks in the northern portion have appeared. A large area in the north western portion of the Black Hill Site has been extensively cleared and worked; possibly by Boral. The 1984 photograph indicates that further activity also possibly by Boral, in the north eastern portion has been underway for several years and the changes to Viney Creek have been extended. The 1996 photograph indicates that the transmission easement has been widened and the activity in the north-western portion of the Black Hill Site has ceased.

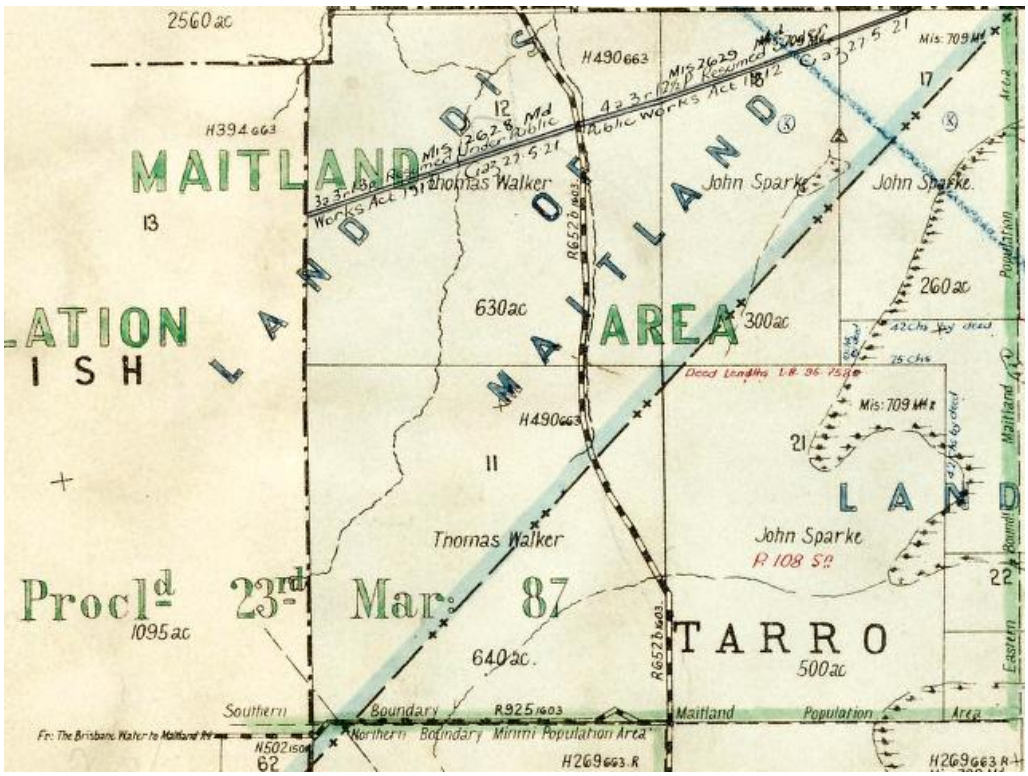


Figure 4.1 ***1917 Hexham Parish Maps. Image Source: Department of Lands, Parish Maps Preservation project, Image ID 10888801.***

4.3 SYNOPSIS OF HISTORICAL BACKGROUND

Overall, the Black Hill Site has been subject to historical development activities across its extent. The main activity that continues is the Boral asphalt operations. Other changes include the transmission line installation and associated clearances and role of the land as a subsidence zone for underground coal mining. In addition, recent activities and public access has resulted in the creation of walking tracks and some rubbish dumping (these impacts have been discussed in *Section 3*).

Based upon the known history of the Black Hill Site there is a low archaeological potential for historical heritage items to be present.

5 BLACK HILL SITE SURVEY

This section provides an overview of the survey of the Black Hill Site undertaken to determine the presence of Aboriginal and historic archaeology sites.

Tank Paddock was not surveyed as there will be no impact to that part of site.

5.1 SURVEY METHODOLOGY

The Black Hill Site was surveyed on foot by the study team and Aboriginal representatives (see *Section 2.5*) on 29 October 2007. A second 'repeat' survey was undertaken with the MLALC on 14 December. The survey aimed to inspect all zones within the Black Hill Site that contained tracks and paths, areas with soil exposures and zones with low vegetation. Transects were also walked through the dense bush around and through the centre of the Black Hill Site (see *Figure 5.1*).

When heritage sites were identified they were recorded by the survey team for content, GPS location and digitally photographed. Notes were made of soil conditions, evidence of disturbance and possible extent of sites. Specific methodologies are described below.

5.1.1 Historical Archaeology

The Black Hill Site was surveyed for historical archaeological sites concurrently with the Aboriginal survey. An inspection of all visible soil profiles was made, as well as an inspection of the landscape for former sites, such as house sites, evidence of landscape modification (associated with cultivation or mining) and material culture, such as rubbish dumps.

5.1.2 Aboriginal Heritage

The survey was conducted according to the methodology discussed with all Aboriginal stakeholders. An additional transect was requested by Aboriginal representatives on the day of survey.

The survey focused on the identification of Aboriginal heritage values relating to archaeological sites. Field survey methods were adopted to pursue the discovery of new archaeological sites, ensure their accurate recording and provide sufficient background information to provide an assessment of cultural significance to the extent that surface survey allowed.

As such, each of the different landforms identified in the Black Hill Site were surveyed, namely slopes, flats and the open depressions/creeks. Creek lines, mature trees, erosion scours and vehicle access tracks were all inspected. In order to ensure the highest likelihood of finding Aboriginal sites, survey focussed particularly on areas of visibility, water courses and trees.

5.1.3 Fieldwork Constraints

Exposures and thus ground visibility was limited on the survey. The low level of visibility was caused by extensive and dense vegetation growth covering most of the Black Hill Site. Erosion was generally associated with vehicle and walking tracks along with occasional patches of exposed ground resulting from water erosion. However, the external boundaries all contained eroded tracks and small paths. A central route adjacent to Viney Creek contained areas with exposures and thus allowed a transect route. The Effective Coverage Table is presented in *Annex B*.

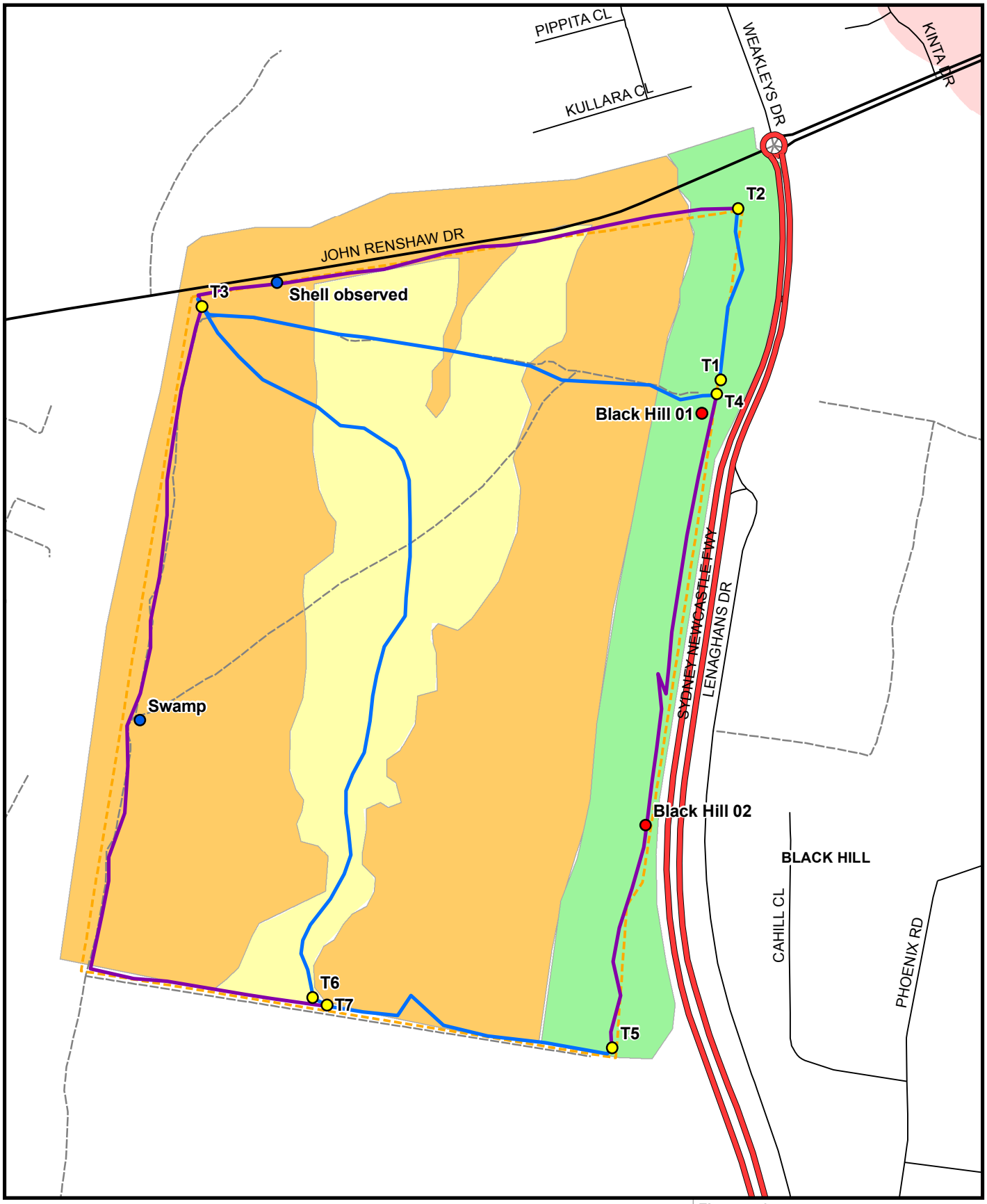
Observations of transects around the perimeter and through the centre of the Black Hill Site have allowed adequate observation of landforms, soil conditions and historical impacts, sufficient to undertake assessment of the archaeological potential of the Black Hill Site.

5.2 SURVEY TRANSECTS

The survey of the Black Hill Site initially focused upon the tracks and paths within the Black Hill Site. This surveyed all possible paths with erosion and visibility. Next a representative sample of the densely vegetated zone was surveyed. These survey areas took in a number of landforms which defined the survey transect inspected. Transects and landforms are identified in *Table 5.1* and *Figure 5.1*, further details are provided in *Annex B*.

Table 5.1 Description of Transects Surveyed

Transect	Landforms	Description
T1	Flat	Blue metal path/track
T2	Simple Slope	Transmission Line Easement
T3	Simple	Transmission Line Easement
T4	Flat	Fire/Vehicle Track
T5	Simple Slope	Fire/Vehicle Track
T6	Slope adjacent to Open Depression	Viney Creek/Bush Track
T7	Gentle Slope	Transmission Line Easement



Legend

- Project Application Area
- Features
- Transect start points
- Aboriginal sites

Transects

Landforms

- Flat
- Open depression
- Simple slope

Client:	Catylis	
Project:	Lower Hunter Land Development	
Drawing No:	0111477s_BH_GIS005_R0.mxd	
Date:	18/02/2010	Drawing size: A4
Drawn by:	JF	Reviewed by: DN
Projection:	GDA 1994 MGA Zone 56	
Scale:	Refer to Scale Bar	

N

0 110 220 330m

Figure 5.1
Survey Transects and Landforms

Environmental Resources Management Australia Pty Ltd

Brisbane, Canberra, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney

ERM

5.3 FIELD SURVEY RESULTS

5.3.1 Historical Archaeology

The survey of the Black Hill Site did not reveal any evidence of items of historical archaeological or built heritage value. The Black Hill Site appears to have been used mainly in conjunction with mining related activities although no historical features associated with this activity were present. This outcome is consistent with the background review and assessment of the Black Hill Site.

5.3.2 Aboriginal Heritage

The field survey confirmed that a limited number of Aboriginal objects were located along the eastern portion of the Black Hill Site at two sites. These were observed on a fire track adjacent to the eastern boundary of the Black Hill Site. However, no Aboriginal objects were observed within the central portion of the Black Hill Site, associated with Viney Creek.

The survey allowed for an assessment of historical impact to soil horizons across the Black Hill Site. It was found that widespread vegetation stripping (observed through 'new' tree growth and personal communication with the Aboriginal and other local stakeholders) and recent industrial use (northern zones) has diminished the overall archaeological potential of the Black Hill Site.

Soils across the Black Hill Site can be described as generally shallow, with a humic A1 horizon, giving way to a thin A2, and sharply abutting yellow clay B1. The combined depth of the A horizons was generally ~ 0.1 m to 0.2 m, apart from adjacent to Viney Creek, where extensive organic matter had created deeper A horizons (up to 0.5 m). Even through this zone B1 clays and bedrock exposures could be seen regularly spaced. Disturbance to soils was apparent adjacent to tracks, with pits, and uneven ground indicating tree removal.

The outcome of the survey was identification of two Aboriginal sites (BH1 and BH2) and clarification of zones with archaeological potential. The following photographs provide an overview of the transects surveyed.

Photograph 5.1 Black Hill Transect 1

Photograph 5.2 Black Hill Transect 2

Photograph 5.3 Black Hill Transect 6

Photograph 5.4 Black Hill Transect 7

Photograph 5.5 Black Hill Viney Creek (Transect 6)

Aboriginal Site - Black Hill 1

The first identified site within the Black Hill survey area comprised a single isolated find (*Photograph 5.7*). This was a yellow chert core with some remaining cortex and two negative scars. In its vicinity (approx. 50m radius) fragmented freshwater shell was also noted. The artefact was recorded on a wide bush track/fire trail transect with clear evidence of erosion and recent disturbance.

Deposits in the immediate area of the site consisted of a hard compact silty soil with approximately 35% inclusions of small irregular stones/gravel. There were no significant outcrops of bedrock in the area. In consultation with the Aboriginal representatives during survey the site was recorded and determined to have a low potential for further Aboriginal objects.

The presence of fragmented freshwater shells in the Black Hill Site is representative of the importance water resources are for the Aboriginal people.

Photograph 5.6 Black Hill 1

Aboriginal Site - Black Hill 2

The second identified site within the survey area consisted of three chert flakes made from a very fine grained grey material. These were located on the edge of a fire track along the easternmost boundary of the Black Hill Site. The track had been recently cleared, the trees and shrubs alongside it were quite young and there was a large quantity of dumped gravel and rubbish indicating recent vehicle impacts and general disturbance.

The remnant deposit consisted of hard baked silty clay (B1) with a high proportion (50%) of gravel covering. In consultation with the Aboriginal representatives the site was classified as having a low potential for further Aboriginal objects to be present at this location.

Photograph 5.7 Black Hill 2

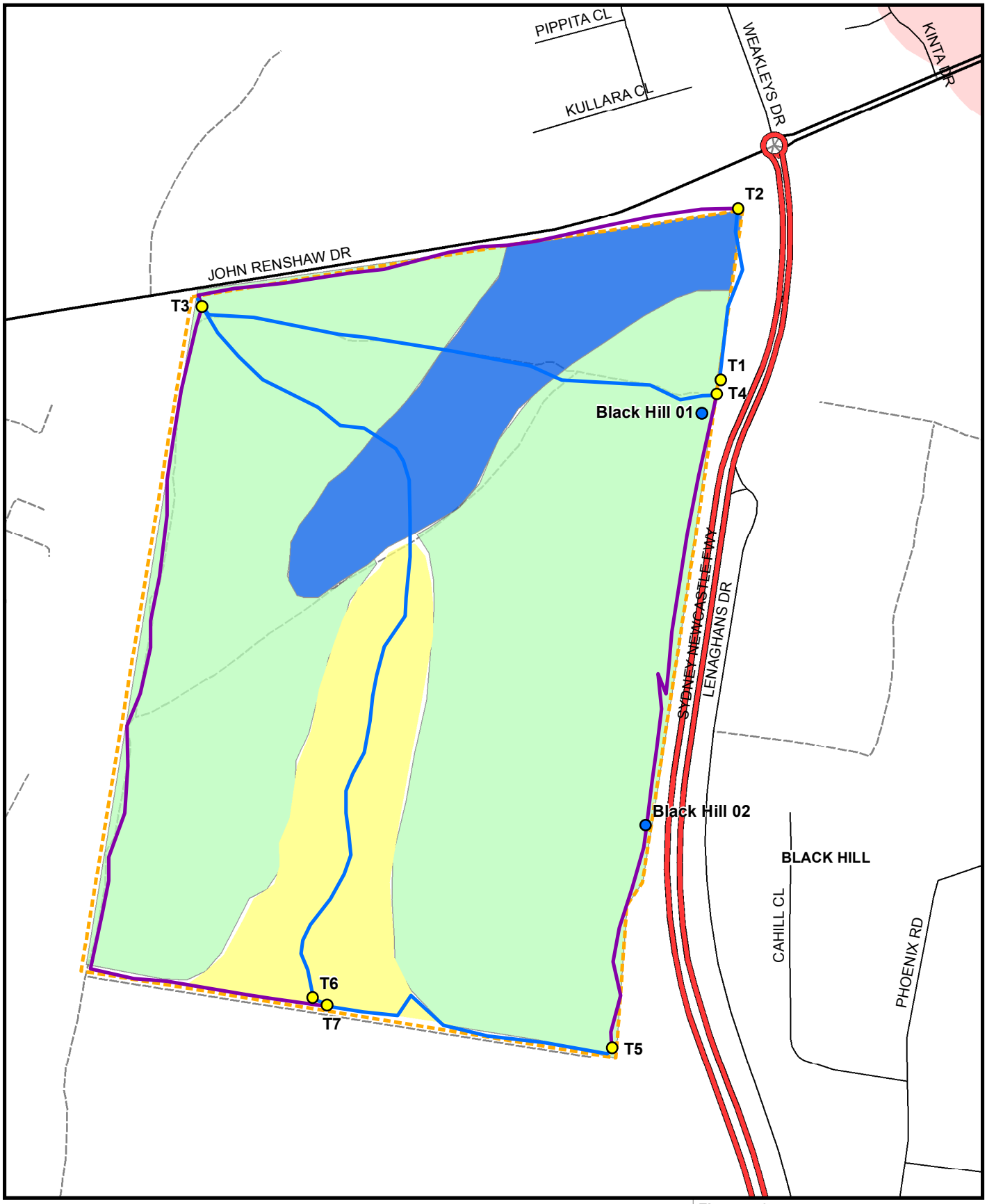
Discussion – Archaeological Potential and Archaeological Zoning

Discussion following the field survey, with regard to archaeological significance and archaeological potential, indicated that in general all parties agreed that the Black Hill Site has a low archaeological potential. This level of potential is connected directly to the historical disturbances observed across the Black Hill Site. Potential, in this context, refers directly to the possibility of further Aboriginal objects being present and that any sites are in a relatively undisturbed context, retaining a sufficient level of integrity to allow scientific analysis of their original spatial distribution. Definitions are provided in *Table 5.2*.

Table 5.2 Definitions of Archaeological Potential

Rank	Definition	Example
No potential	Artefacts cannot occur in situ.	Reconstructed landscapes, hazardous landscape, developed areas.
Low potential	Artefacts are not normally found in comparable contexts but could occur in low densities making detection unlikely.	Landforms with no specific focus for use, i.e. with water sources or undifferentiated slopes.
Moderate potential	Artefacts are known to occur in comparable landforms in detectable densities (~1artefact/m^2) and there is an unknown possibility for detection.	Landforms with an environmental focus which may have seen seasonal visitation.
High potential	Artefacts are consistently found in comparable landforms or similar environmental contexts and thus will certainly be found in any ground breaking works.	Landforms with known environmental focus encouraging repeat visitation to specific locale, i.e. margins of Lakes or near high order creeks.

Figure 5.2 provides zoning for archaeological potential across the Black Hill Site. Zones within the Black Hill Site that have been directly impacted by mining or the asphalt facility are deemed to have no archaeological potential. The zone directly adjacent to Viney Creek has a moderate level of archaeological potential. All other zones are deemed to have a low archaeological potential.



Legend

Project Application Area

Transects

Archaeological Potential

Low

Moderate

None

Tree removal, pipeline, gravels (introduced), soil disturbances

Client:	Catylis
Project:	Lower Hunter Land Development
Drawing No:	0111477s_BH_GIS004_R0.mxd
Date:	18/02/2010 Drawing size: A4
Drawn by:	JF Reviewed by: DN
Projection:	GDA 1994 MGA Zone 56
Scale:	Refer to Scale Bar

N

0 100 200 300m

Figure 5.2

Location of Aboriginal Sites and Archaeological Zoning Plan

Environmental Resources Management Australia Pty Ltd

Brisbane, Canberra, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney

ERM

6 HERITAGE SIGNIFICANCE ASSESSMENT

6.1 HISTORICAL HERITAGE ASSESSMENT

6.1.1 Historical Assessment Criteria

The Burra Charter (*The Australia ICOMOS Charter for Places of Cultural Significance*) has set a standard for assessing heritage significance based on the aesthetic, historic, scientific and social values embodied in an item or place. In New South Wales the *Heritage Act 1977* has established seven criteria for the identification and assessment of heritage values. The NSW Heritage Office, Department of Planning, has developed a guideline to assessing heritage significance against the seven criteria in their publication *Assessing Heritage Significance*. These criteria are as follows:

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

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

Criterion (c) – an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);

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

Criterion (e) – an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);

Criterion (f) – an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);

Criterion (g) – an item is important in demonstrating the principal characteristics of a class of NSW's:

- cultural or natural places; and/or
- cultural or natural environments.

6.1.2 Black Hill Site

The historical background and study area investigation have revealed that it has no historical heritage items or value at a local or State level, including historical archaeological potential. The Black Hill Site does not meet any of the above criteria at a State or local level.

6.2 ABORIGINAL HERITAGE ASSESSMENT

6.2.1 Aboriginal Assessment Approach

Aboriginal heritage sites, objects and places hold value for communities in many different ways. The nature of those heritage values is an important consideration when deciding how to manage a heritage site, object or place and balance competing land-use options. The many heritage values are summed up in an assessment of "Cultural Significance".

The primary guide to management of heritage places is the Australia ICOMOS Burra Charter 1999. The Burra Charter defines cultural significance as:

> *Cultural significance* means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.
>
> Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects.
>
> Places may have a range of values for different individuals or groups.

This assessment has sought to identify Aboriginal heritage objects and sites within the Black Hill Site and obtain enough information to allow the values of those objects and sites to be determined.

Research and consultation with the Aboriginal community has also been conducted to determine whether any heritage value relates specifically to the Black Hill Site regardless of the archaeological evidence. While it is accepted that Aboriginal sites within the local region are of significance to Aboriginal people, this study sought to identify whether the Black Hill Site itself held specific values either in itself, or as part of a specific local area of particular significance.

Aboriginal heritage sites with archaeological evidence are of value to the Aboriginal community through the tangible connection that it represents with pre-European Aboriginal land use.

Scientific value is assessed according to the research potential of a site. Rarity and representativeness are also related concepts taken into account. Research potential or demonstrated research importance is considered according to the contribution that a heritage site can make to present understanding of human society and the human past. Those heritage site, objects or places of high scientific significance are those which provide an uncommon opportunity to inform us about the specific age of people in an area, or provide a rare glimpse of artistic endeavour or provide a rare chronological record of changing life through deep archaeological stratigraphy.

The comparative rarity of a site is a consideration in assessing scientific significance. A certain site type may be "one of a kind" in one region, but very common in another. Artefacts of a particular type may be common in one region, but outside the known distribution in another.

The integrity of a site is also a consideration in determining scientific significance. While disturbance of a topsoil deposit with artefacts does not entirely diminish research value, it may limit the types of questions that may be addressed. For example a heavily cultivated paddock may be unsuited to addressing research questions of small-scale site structure, but it may still be suitable for answering more general questions of implement distribution in a region and raw material logistics.

Black Hill 1 & Black Hill 2

Both of these sites have been assigned a level of low archaeological potential, given the limited remnant A horizon soils and localised disturbance evident. The condition and integrity of both sites is considered poor. The two sites can both be considered to be representative of Aboriginal sites in this region. Overall the scientific value of these sites must be considered low. The Aboriginal community has assigned a high level of significance to these sites because of their connection to the region and the evidence present for use of the Black Hill Site. This significance can be recognised and managed through the development of an Aboriginal heritage Plan of Management for the Black Hill Site.

Moderate Archaeological Potential Zone

Based upon the outcomes of the survey and historical impacts, a zone with moderate archaeological potential has been assigned on either side of the southern portion of Viney Creek (see *Figure 5.2*). This zone (which contains intact deeper soil horizons) could have been a focus for Aboriginal subsistence activities within the Black Hill Site (a localised "economic zone"). If Aboriginal sites were present, with good integrity and condition, then these could be important for answering local and regional scientific questions (see discussion below).

Low Archaeological Potential Zone

The majority of the Black Hill Site has been designated as having a low archaeological potential (including the two identified Aboriginal sites BH1 & BH2). Overall, A horizon soils in this zone are shallow and have been significantly disturbed through the stripping of land, trees and introduction of gravels for tracks, rubbish and mining related activities in the last one hundred years. This zone thus has low condition and integrity and a low level of scientific importance.

No Archaeological Potential Zone

The remainder of the Black Hill Site has no archaeological potential as it has been extensively impacted and modified by historical activities (including vegetation stripping, transmission line creation and Boral's activities). This zone thus has very poor condition and integrity and is of no scientific importance with regard to research questions pertaining to Aboriginal heritage.

6.2.2 *Research Potential of the Black Hill*

The capacity of a site to address research questions is predicated on a definition of what the key research issues are for a region. In the area near Hexham Swamp, the main archaeological research questions centre around subsistence and habitation (economic) activities associated with the swamp, and to a lesser extent on stone artefact manufacturing technology and raw material sources.

In considering future management recommendations for the Black Hill Site, the aim of any future archaeological research/work should be considered in light of local and regional issues and work. Thus the following discussion provides a context, should further Aboriginal heritage work be required within the Black Hill Site. It should also be noted, that at the current time, the findings of this report are that it is unlikely that further archaeological work would be necessary within the Black Hill Site.

The background literature review has shown that relatively few archaeological investigations have been conducted within the local area. Most of the studies have been field surveys, such as this report, where no consequential analysis or sub-surface investigation of Aboriginal sites has occurred.

The general absence of focused research in the Newcastle area means that fundamental questions addressing Aboriginal land use, the chronology of the region, subsistence patterns and mechanisms for trade and exchange have not been explored. Archaeological questions should be asked on a local and regional basis. Suitable archaeological research questions focusing on the local Aboriginal archaeology should be considered in order to facilitate further understanding of the Black Hill Site. These include:

- What kind of sites can be attributed to this area?
- What types of material resources were available in this area that may have made it an attractive camp location or temporary settlement?
- What is the subsistence base for the region?
- What was the role of Viney Creek in the original use of this land?

Regional research questions include:

- What was the relationship of the Black Hill Site to Hexham Swamp? (especially the connection of the different economic zones of Viney Creek and Hexham Swamp);

- Was the Black Hill Site used for travelling camps en route to Hexham Swamp or as a more permanent base?

Given the Aboriginal research potential of the general area (surrounding the current Black Hill Site), and an absence of focus academic or scientific work, any further Aboriginal sites, with good condition and integrity, could be important resources for scientific research. Any further Aboriginal sites irrespective of condition and integrity are considered important to the Aboriginal community.

6.3 SYNOPSIS OF HERITAGE ASSESSMENT

Table 6.1 provides a synopsis of the heritage assessment. The assessment has been used to determine heritage impacts and the mitigation strategy.

Table 6.1 Summary of Heritage Assessment

Site/Area	Archaeological Potential	Archaeological Significance	Aboriginal Significance
Black Hill 1	Low	Low	High
Black Hill 2	Low	Low	High
Area with No archaeological potential	None	None	N/A
Area with Low archaeological potential	Low	Low	High
Area with Moderate archaeological potential	Moderate	Moderate, possibly High	High
Historical Heritage	None	None	N/A

7 *PROPOSED CONCEPT PLANS*

The Concept Plan for the Black Hill site is shown in *Figure 7.1*. Its development has benefited from multiple environmental surveys, the community meeting process and appropriate urban planning design.

The concept plan includes provision for an employment land area at Black Hill which is likely to be similar to adjacent industrial, warehousing and distribution centre development to the north, with provision for ancillary office space (Coal & Allied 2007:10). A central riparian corridor will be created abutting the east and west sides of Viney Creek.

If the concept plan is compared against *Figure 5.2* it can be seen that the proposed development impacts the archaeological sites BH1 and BH2as well as some portions adjacent to Viney Creek in the southern portion of the Black Hill Site. Further the majority of the zone assigned a low level of archaeological potential will be developed. However, the creation of the riparian corridor incorporates, and thus conserves, the majority of the archaeological zone assigned moderate potential.

LEGEND

- Site Boundary
- Existing Creek Line
- Existing Hunter Water Pipeline
- Existing Residential
- Existing Industrial
- Indicative Stancheon Locations
- Proposed Powerline Easement
- Proposed Detention Basin
- Indicative Proposed Riparian Zone
- Indicative Proposed APZ - 20m
- Proposed 20m wide Green Buffer Zone *(as required under Newcastle - Lake Macquarie Western Corridor Planning Strategy)*
- Indicative Proposed F3 Freeway - Raymond Terrace Interchange
- Proposed Indicative Site Entries
- Proposed Visual Buffer
- Proposed 10m wide Visual Buffer to John Renshaw Drive.
- 100 Year ARI
- Support Facilities
- Public Open Space

Land Budget
26ha Proposed Public Open Space
157ha Developable Land incl. Lots, Road, Easements, Buffers, APZ's, Detention basins

3-way signalised intersection

John Renshaw Drive

Left in/left out access

F3 - Sydney - Newcastle

Tenambits Drive

CITY OF CESSNOCK
PARISH OF STOCKRINGTON
NEWCASTLE CITY COUNCIL

DP 234203 131

1 7.8 Ha (1.7 Ha)
2 5.2 Ha
3 8.2 Ha
4 9.6 Ha
5 4.0 Ha
6 7.9 Ha
7 9.5 Ha
8 3.8 Ha (1.4Ha)
9 4.6 Ha
10 8.1 Ha
11 5.4 Ha
12 1.0Ha
13 2.2 Ha
14 3.9 Ha
15 8.3 Ha (0.8Ha)
16 5.4 Ha
17 2.7 Ha
18 4.9 Ha
19 7.4 Ha
20 6.5 Ha
21 4.8 Ha
22 3.3 Ha
1.0Ha
1.3Ha

New Road 20m Reserve

Figure 7.1

Black Hill & Tanks Paddock - Concept Plan

Client:	Catylis		
Project:	Lower Hunter Land Development - Black Hill & Tanks Paddock		
Drawing No:	0111477s_BH_01_R1.cdr		
Date:	19/11/2010	Drawing size:	A3
Drawn by:	GC	Reviewed by:	DN
Scale:	Refer to Scale Bar		

N

0 100 200 300m

Environmental Resources Management Australia Pty Ltd
Building C, 33 Saunders St, Pyrmont, NSW 2009
Telephone +61 2 8584 8888

ERM

8 ECOLOGICALLY SUSTAINABLE DEVELOPMENT (ESD)

8.1 PREAMBLE TO ESD

An objective of the NPW Act (1974) is the "*conservation of objects places and features … of cultural value within the landscape, including … places, objects and features of significance to Aboriginal people …*" (s.2A(1(b)(i)).

The DECCW's publication, *Operational Policy: Protecting Aboriginal Cultural Heritage* (2009), provides guidance to proponents with guidance in term of ESD. The following discussion provides an overview of ESD and its application to the current project.

8.1.1 Avoiding Or Reducing Impact To Aboriginal Sites

> "DECCW needs to balance the sometimes competing tensions between development activities and environment protection when we make decisions. Although the NPW Act gives a high level of protection to known Aboriginal objects, recent court decisions have reinforced that Part 6 gives the Director General (DG) express powers to consent to the damage, destruction or defacement of Aboriginal objects by development activities. The powers in Part 6 are not inconsistent with the objects of the Act or a requirement to give effect to ESD." (DECCW 2009: Section 3.8)

The DECCW has three policies that provide guidance with respect to avoiding or reducing impact to Aboriginal sites:

> Policy 20
>
> Impacts to significant Aboriginal objects and places should always be avoided wherever possible. We [the DECCW] will promote the development (or amendment) of proposals to avoid impacts and therefore avoid the need for s.90 AHIPs.
>
> Policy 21
>
> Where impacts to Aboriginal objects and places cannot be avoided, we will require the proponent or AHIP applicant to develop (or amend) proposals so as to reduce the extent and severity of impacts to significant Aboriginal objects and places through the use of reasonable and feasible measures. Any measures proposed should be negotiated between the proponent or AHIP applicant and the Aboriginal community.
>
> Policy 22
>
> Once all avoidance, minimisation and mitigation options have been adequately explored, we may also consider the appropriateness of any proposed actions having potential Aboriginal cultural heritage benefit. Any actions proposed should be negotiated between the proponent or AHIP applicant and the Aboriginal community.

8.1.2 Principles of Ecologically Sustainable Development

ESD has been defined in s.6 of the *Protection of the Environment Administration Act 1991.* This requires the integration of *economic* and *environmental* considerations (including cultural heritage) in the decision-making process. In regard to Aboriginal cultural heritage, ESD can be achieved by applying the principle of intergenerational equity and the precautionary principle. (DECC 2009: 26)

Intergenerational Equity

> "Intergenerational equity is the principle whereby the present generation should ensure the health, diversity and productivity of the environment for the benefit of future generations.
>
> In terms of Aboriginal heritage, intergenerational equity can be considered in terms of the cumulative impacts to Aboriginal objects and places in a region. If few Aboriginal objects and places remain in a region (for example, because of impacts under previous AHIPs), fewer opportunities remain for future generations of Aboriginal people to enjoy the cultural benefits of those Aboriginal objects and places.
>
> Information about the integrity, rarity or representativeness of the Aboriginal objects and places proposed to be impacted, and how they illustrate the occupation and use of land by Aboriginal people across the region, will be relevant to the consideration of intergenerational equity and the understanding of the cumulative impacts of a proposal.
>
> Where there is uncertainty, the precautionary principle should also be followed." (DECC 2009:26)

The precautionary principle

> "The precautionary principle states that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation.
>
> In applying the precautionary principle, decisions should be guided by:
>
> - a careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment
> - an assessment of the risk-weighted consequences of various options.

The precautionary principle is relevant to DECCW's consideration of potential impacts to Aboriginal cultural heritage where:

- the proposal involves a risk of serious or irreversible damage to Aboriginal objects or places or to the value of those objects or places, and

- there is uncertainty about the Aboriginal cultural heritage values or scientific or archaeological values, including in relation to the integrity, rarity or representativeness of the Aboriginal objects or places proposed to be impacted.

Where this is the case, a precautionary approach should be taken and all cost-effective measures implemented to prevent or reduce damage to the objects/place." (DECCW 2009:26)

With respect to the above DECCW policy (Policy 20-22) and ESD the following sections detail specifications for conservation, potential impact, and possible reductions to impact on the identified Aboriginal sites and values.

8.2 PROPOSED CONSERVATION (AVOIDANCE) OF HERITAGE SITES

The proposed riparian corridor includes the majority of the zone with moderate archaeological potential. The inclusion of this zone is very positive with regard to the long term conservation of Aboriginal cultural significance and unidentified sites within this Black Hill Site and the local region. The creation and long term conservation of the riparian corridor will have the effect of conserving unrecorded Aboriginal heritage site, maintaining their condition and integrity, and consequentially some of the intangible Aboriginal heritage values associated with the local area, in perpetuity.

8.3 PROPOSED IMPACTS TO HERITAGE SITES

8.3.1 Historical Heritage

The implications and impact of development will not impact any historical heritage values of the Black Hill Site or the local region. Therefore it is not necessary to discuss potential impacts in terms of historic heritage for the proposed development.

8.3.2 Aboriginal Heritage

Contrast of the concept plan (*Figure 7.1*) against the identified heritage values of the Black Hill Site (*Figure 5.2*) indicates that the proposed development may impact Aboriginal sites BH1 and BH2, the zone with low archaeological potential and some portions of the zone with moderate archaeological potential, associated with the southern extent of Viney Creek.

The assessment of significance has indicated that sites BH1 and BH2 have high social value to the Aboriginal community, low archaeological potential and low scientific value. The sites have been partially disturbed by recent activities in the area, but given the low archaeological potential are unlikely to contain a sub-surface component. The area with low archaeological potential has a low level of scientific importance. The area with moderate archaeological potential has a moderate to high level of scientific importance given its ability to answer research questions relating to local Aboriginal subsistence patterns.

BH1 & BH2

Any future works near Black Hill 1 and Black Hill 2 could impact and disturb these sites. This includes any soil testing or sampling, such as geo-technical work, top soil stripping for development.

Zones With Archaeological Potential

The two zones with moderate and low archaeological potential would also be affected by the proposed development. Soil stripping, vegetation clearance and development that impacts soils will modify the condition and integrity of the areas with archaeological potential. The likelihood of Aboriginal sites occurring within each zone has been explored by the field survey and heritage assessment. Impacts within these zones should be mitigated with relevance to their level of potential. Mitigation measures are provided in *Chapter 10*.

8.4 SUMMARY OF SITES, CONSERVATION, IMPACTS AND AFFECTS

A summary of the potential impacts on the heritage values of the Black Hill Site is provided in *Table 8.1* below. Mitigation requirements are presented in *Chapter 10*.

Table 8.1 provides an overview of the impacts to each of the Aboriginal sites identified during this project and whether these impacts will require archaeological mitigation prior to impact.

Table 8.1 Aboriginal sites impacted by the new pipeline

Site	Scientific significance	Cultural significance	Affect of the impact	Archaeological mitigation required
Black Hill 1	Low	High	Disturbance to artefact	Salvage of surface artefactual material and monitoring of earth stripping works.
Black Hill 2	Low	High	Disturbance to artefact	Salvage of surface artefactual material and monitoring of earth stripping works.
Area with No archaeological potential	None	N/A	None	No mitigation required
Area with Low archaeological potential	Low	High	Low possibility to impact unrecorded Aboriginal objects	No mitigation required
Area with Moderate archaeological potential	Moderate, possibly High	High	Moderate potential to impact unrecorded Aboriginal objects/sites. Conservation of majority of this zone within the riparian corridor.	Monitoring by Aboriginal community and archaeologist of top soil disturbance- see section *10.2.4* for further detail.
Historical Heritage	None	N/A	None	No mitigation required

9 STATUTORY CONTEXT

This project is to be assessed and approved under Part 3A of the *Environmental Planning and Assessment Act 1979*. In summary Part 3A can provide developers with 'comprehensive' approval for development, without the need for obtaining further approvals under additional pieces of State legislation. The Part 3A approval process involves strict requirements established by the Director General of NSW Planning to ensure all environmental factors are adequately considered and addressed.

Until the development is granted Part 3A approval the Black Hill Site and its heritage values remain protected and under the statutory control of the relevant State Acts.

Aboriginal cultural heritage in NSW is protected by the *National Parks and Wildlife Act 1974*. Historical heritage in NSW is protected under the *Heritage Act 1977*. These acts and their obligations are provided below. The obligations under these various acts have been used to devise relevant mitigation measures for the Black Hill Site, which are presented in *Chapter 10*.

9.1 NSW LEGISLATION

9.1.1 Environmental Planning and Assessment Act 1979 (NSW)

The *Environmental Planning and Assessment Act 1979* (EP&A Act) requires that environmental impacts are considered in land-use planning, including impacts on Aboriginal and historical heritage. Various planning instruments prepared under the Act identify permissible land use and development constraints.

The DECCW provides guidelines for Aboriginal heritage assessment, including those conducted under the EP&A Act 1979. Where Aboriginal heritage assessment is conducted under the Integrated Development Approval process, a more detailed set of NPWS guidelines applies.

Where a development is approved under Part 3A of the Act, further approvals under the National Parks & Wildlife Act 1974 are not required. In those instances management of heritage sites must follow the statement of commitments included in the Part 3A development approval.

The statement of commitments defines the environmental management and mitigation measures the proponent is prepared to make for on the site. The statement of commitments is made in accordance with *EP&A Act 1979*: Part 3A Division 2 Section 75F[6].

A Draft Statement of Commitments has been prepared as part of the Environmental Assessment. The draft Statement of Commitments defines the environmental management and mitigation measure the proponent is prepared to make for on the site.

9.1.2 National Parks and Wildlife Act 1974 (NSW)

All Aboriginal objects within the state of NSW are protected under section 90 of the *National Parks and Wildlife Act 1974* (NPW Act).

Under section 5 of the Act, "Aboriginal Object" means any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.

Sites of traditional significance that do not necessarily contain archaeological materials may be gazetted as "Aboriginal places" and are protected under Section 84 of the Act. This protection applies to all sites, regardless of their significance or land tenure. Under section 90, a person who, without first obtaining the consent of the Director-General, knowingly destroys, defaces or damages, or knowingly causes or permits the destruction or defacement of or damage to, an Aboriginal object or Aboriginal place is guilty of an offence.

Amendments introduced by the *National Parks & Wildlife Amendment Act 2001* which strengthen the provisions of section 90 have yet to commence.

The DECCW is the statutory authority for the protection of Aboriginal objects and places within NSW, with the Director-General of that department the consent authority. Approvals under the NPW Act are not required where a development is approved under Part 3A of the *Environmental Planning and Assessment Act*.

9.1.3 Heritage Act 1977 (NSW)

The *Heritage Act 1977* protects the natural and cultural history of NSW with emphasis on non-Aboriginal cultural heritage. The Act establishes the State Heritage Register (SHR). Development affecting items on the SHR requires approval by the NSW Heritage Council. Places included on the SHR are also required to have a Conservation Management Plan prepared. The Act also provides automatic statutory protection to 'relics'. Under recent amendments to the Act, a 'relic' is now defined as:

> *any deposit, artefact, object or material evidence that:*
>
> *(a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and*
>
> *(b) is of State or local heritage significance.*

Sections 139-145 of the *Act* prevent the excavation or disturbance of land known or likely to contain 'relics', except in accordance with an excavation permit issued by the Heritage Council of NSW (or in accordance with a gazetted exception under Section 139(4) of the *Act*).

While Aboriginal heritage sites and objects are protected principally by the *National Parks & Wildlife Act 1974*, if an Aboriginal site, object or place is of great significance it can be protected by a heritage order issued by the Minister on the advice of the Heritage Council.

Approvals under the Heritage Act are not required where a development is approved under Part 3A of the *Environmental Planning and Assessment Act*.

9.2 NSW PLANNING CONTROLS AND GUIDELINES

There are a range of planning controls and guidelines that outline issues to be considered in the management and protection of heritage at Black Hill. These include:

- Hunter Regional Environmental Plan (REP) 1989 - Heritage; and
- Newcastle Local Environmental Plan (LEP) 2003.

The Hunter REP (Heritage) aims to conserve the environmental heritage of the Hunter Region. It lists 1300 heritage items that are divided in a number of categories; State, regional, local, areas requiring archaeological investigation, and heritage precincts or conservation areas. The Hunter REP Heritage also provides a framework for local government councils to develop, along with the assistance of the Department of Planning, appropriate means for conserving the heritage of their area.

The Newcastle LEP 2003 includes a range of heritage protection provisions addressing both Aboriginal and European heritage sites, items and areas. The heritage objective of the LEP is to protect and conserve archaeological sites and places of Aboriginal, natural or European cultural significance. The LEP includes provisions to protect heritage in any redevelopment works.

No parts of the Black Hill Site are included on the heritage schedules of these planning instruments.

9.3 COMMONWEALTH LEGISLATION

9.3.1 Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* protects areas and/or objects which are of significance to Aboriginal people and which are under threat of destruction. The Act can, in certain circumstances override State and Territory provisions, or it can be implemented in circumstances where State or Territory provisions are lacking or are not enforced. A significant area or object is defined as one that is of particular importance to Aboriginal people according to Aboriginal tradition. The Act must be invoked by or on behalf of an Aboriginal or Torres Strait Islander or organisation.

9.3.2 Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides for the protection of matters of National Environmental significance and the environment generally on Commonwealth land. Impacts on the Aboriginal heritage must be considered as part of environmental impact assessment during land-use planning. A referral must be made to the Department of Environment, Water, Heritage and the Arts (formerly the Department of Environment and Heritage) where a significant impact is anticipated on matters of National Environmental significance or the environment of Commonwealth land.

This assessment has found that no heritage sites are located on Commonwealth land in association with the Black Hill Site and no heritage sites are significant at the National level. Therefore, from a heritage point of view, the EPBC Act does not apply for this development.

10 HERITAGE MITIGATION MEASURES

This section contains provisions for the mitigation of impacts (*Chapter 8*) resulting from the proposed development on the heritage values of the Black Hill Site (*Chapter 7*). Mitigation measures have been informed by consideration of the NSW Heritage Office and DECCW guidelines for historic and Aboriginal heritage impact assessments.

The mitigation measures presented will be used to form the basis of a 'Statement of Commitments' as defined under the *EP&A Act 1979*: Part 3A Division 2 Section 75F[6].

10.1 HISTORICAL HERITAGE MITIGATION MEASURES

The Black Hill Site does not have inherent historical heritage value nor does it contain items of historical heritage. The proposed development will not impact any known heritage items. Therefore the proponent is not required to undertake mitigation measures in relation to historical heritage.

10.2 ABORIGINAL HERITAGE MITIGATION MEASURES

Recommendations for Aboriginal heritage mitigation are based upon archaeological patterning outlined in *Figure 5.2.* These recommendations are based upon the archaeological significance and potential of Aboriginal significance of the areas as defined in *Table 8.1.*

Two different sites and two different zones require mitigation prior to and during development:

- Aboriginal site BH 1;
- Aboriginal site BH 2;
- the area with low archaeological potential; and
- the area with moderate archaeological potential.

10.2.1 General Aboriginal Heritage Mitigations

The following general Aboriginal heritage mitigation measures are proposed.

1) An 'Aboriginal Heritage Plan of Management'(PoM) should be written prior to construction commencing. The PoM should be developed between Coal & Allied and the Aboriginal stakeholders. The PoM should cover the following matters and issues:

    a) all site contractors undergo a site induction that includes information about Aboriginal sites in the event that unexpected archaeological sites are found;

    b) ensure appropriate stop work procedures are in place particularly for the excavation phase of works (topsoil stripping) in case of the unexpected discovery of Aboriginal objects/sites;

    c) provide contact details for Aboriginal stakeholders in the event they need to be brought to site for Aboriginal heritage management;

    d) ensure that on-site information about the heritage requirements is in place for the construction phase for the construction team; and

    e) in the unlikely event of discovery of skeletal material all works should cease, the police, relevant local Aboriginal community groups and a suitably experienced archaeologist or physical anthropologist should be contacted to assess the material before determining the correct management action.

It is the responsibility of Coal & Allied (as the developer) to make sure that the PoM is in place prior to construction occurring.

2) An agreement should be reached for the collection, care and control of any Aboriginal objects that will be impacted by development.

The Aboriginal Heritage PoM could include management recommendations for the storage and conservation of all Aboriginal materials excavated from the site. Measures should be agreed with the Aboriginal community prior to any site works. Storage solutions could include reburial at a nearby location, use of the material as a teaching collection or standard artefact repository with the Australian Museum.

3) Aboriginal heritage interpretation should be considered for the Black Hill Site, in-line with the outputs of the community meeting document (Coal & Allied 2007b). This could be in the form of signage, written material, or inclusion of a heritage 'walk'. Any option decided upon should be developed in collaboration with the identified Aboriginal stakeholders.

10.2.2 Aboriginal Site BH 1 and BH 2

Prior to earth works commencing, an opportunity for the Aboriginal community to collect the artefactual material from these sites should be offered. Further, the Aboriginal community should be allowed to monitor earth works (stripping of the A horizon soils only) within a 50 m radius of the two sites. This monitoring will be for the recovery of further possible Aboriginal objects. All objects recovered should be curated as per the Aboriginal PoM. As these sites are in the area with low archaeological potential this work would not require an archaeologist to be present.

10.2.3 Area of Low Archaeological Potential

No further archaeological work is required within this zone. Given the low potential for further Aboriginal objects to occur in this zone 'monitoring' is not recommended. In the event of the unexpected discovery of an Aboriginal object, site work in the immediate area should cease and Aboriginal stakeholders should be invited to collect the material – in accordance with the PoM.

10.2.4 Area of Moderate Archaeological Potential

Figure 5.2 indicates the areas of moderate archaeological potential. Although these are generally contained within the riparian corridor, there are some areas of possible impact. The following mitigating measures should be undertaken to conserve any in-situ archaeological deposits:

- within any area that is to be impacted the surface (A horizon soils) should be graded and an inspection of visible soil surface made by a qualified archaeologist and Aboriginal representatives;
- if no Aboriginal objects are present then site works can continue without the need for further archaeological work;
- if Aboriginal objects are located then a spot assessment should be made to determine the extent, condition and integrity of the objects/site;
- if the site has low or no integrity the Aboriginal representatives should undertake a surface collection of visible artefacts and no further archaeological intervention is required;

- if the site is assessed as having moderate or high integrity an archaeological test excavation should be undertaken. This should comprise initial sampling within 1mx1m squares over a representative portion of the site and sieving the collected deposit through 5mm mesh sieves to collect all artefacts. Expansion of the excavation should be determined upon the ability of the site to address the research questions stipulated in *Chapter 6*;

- any archaeological excavation should be accompanied by an excavation report that aims to address local and regional research questions. It should include qualitative and quantitative analysis of material recovered; and

- public interpretation of the results of excavation should be undertaken, which could be in the form of a plain English report or other heritage interpretation. This should be undertaken with the collaboration of Aboriginal stakeholders.

11 CONCLUSION

This HIA has determined that the proposed development at Black Hill has the potential to impact on the Aboriginal heritage values of the area. No impact on historic heritage values will occur.

Provided the mitigation measures outlined in this HIA are implemented by Coal & Allied, the potential impacts will be reduced to an acceptable level.

REFERENCES

Effenberger S & Baker N (1996) **Archaeological test Excavation and Significance Assessment F3 Freeway, Black Hill NSW** Consultancy report by Prisma and AMBS to the RTA

Environmental Resources Management (ERM) (2004) **Gap Analysis – Archaeology, History and Landscape: Upper Hunter Valley Aboriginal Heritage Baseline Study** Consultancy report to the Upper Hunter Aboriginal Heritage Trust

ERM Mitchell McCotter (1996) **Flora, Fauna and Archaeology Survey for Lot 422 DP 791776 No 21A Forsythe Parade, Black Hill** Consultancy report prepared for Don Caldwell

ERM Mitchell McCotter (1997) **Lot 422 DP 791776 No 21A Forsythe Parade, Black Hill – Application for Preliminary Research Permit** Consultancy report prepared for Don Caldwell

Kuskie PJ (2006) **Abel Underground Mine Part 3A Environmental Assessment – Appendix K – Aboriginal Heritage Assessment** Consultancy report prepared by Southeast Archaeology for Donaldson Coal Pty Ltd

Kuskie PJ & Kamminga J (2000) **Salvage of Aboriginal Archaeological Sites in relation to the F3 Freeway Near Lenaghans Drive, Black Hill, NSW** Consultancy report prepared by Southeast Archaeology to the RTA

National Parks and Wildlife Service (NPWS) (1998) **Kooragang Nature Reserve and Hexham Swamp Nature Reserve Plan of Management**

National Parks and Wildlife Service (NPWS) (2006) **Pambalong Nature Reserve Plan of Management**

NSW Department of Lands **Hexham Parish Maps for 1914, 1922, 1934, 1943 and 1954** available from
http://www.lands.nsw.gov.au/survey_mapping/parish_maps

Silcox R & Ruig J (1995) **Test Excavations on a Rural Residential Estate at Black Hill, Tarro NSW** Consultancy report prepared for Peter and Suzanne Evans

Suters Architects (1996-1997) **Newcastle City Wide Heritage Study Volumes 1-4**, prepared for Newcastle City Council under the National Estate Grants Program

Annex A

Aboriginal Consultation Log

Table A.1 Consultation Stage 1: Advisory Requests

Date	Organisation/group/individual	Contact Name	Details
28-Jun-07	Native Title Services	N/A	Search of NNTT website of Lake Macquarie LGA shows 7 claimant applications, none of which are active. Three of these were for Wonnarua Tribal Council and were discontinued, one was for the Boongary Clan of the Taurai People which was discontinued, one was for Jamie Roy Denniss which was discontinued, one was for Mimaga Wajaar Traditional Custodians Wanuruah Claim and was dismissed, and one was for the Wonnarua People and was discontinued.
28-Jun-07	DECCW	Brendan Diacono	Email requesting groups to consult. Letter received 4/07/07 identifying three Aboriginal parties who may be interested in being consulted: Guringai Tribal Link Aboriginal Corporation (who we're already consulting), Mur-Roo-Ma Inc. and Arthur C. Fletcher..
28-Jun-07	Registrar of Aboriginal Owners	Megan Mebberson	Email requesting groups to consult. Email received 29/06/07 specifying that no Aboriginal owners are known for the area.
28-Jun-07	Wyong Shire Council	Chris Ferry	Email requesting groups to consult. Email received 4/07/07 directing us to contact DECCW, which we have already done.
28-Jun-07	Lake Macquarie City Council	Mary Loder	Email requesting groups to consult. Resent on 25/07/07 as no response had been received. Email received 8/8/07 saying to contact LALC.
1-Oct-07	Wallsend Leader newspaper	N/A	Ad to appear on 1 October 2007, given response date of 15 October 2007 –no responses received
19-Oct-07	Mindaribba Local Aboriginal Land Council	Rick Griffiths	Phone call discussing project and checking whether a representative would be available for survey. Email to this effect giving details, map and requesting groups to consult.
19-Oct-07	Awabakal Traditional Owners Aboriginal Corporation	Kerrie Brauer	Phone call discussing project and checking whether a representative would be available for survey. Email to this effect giving details, map and requesting groups to consult.
19-Oct-07	Awabakal Descendents Traditional Owners Aboriginal Corporation	Shane Frost	Phone call discussing project and checking whether a representative would be available for survey. Email to this effect giving details, map and requesting groups to consult.
19-Oct-07	Kukuyngal Barritjapa	John Thorpe	Phone call discussing project and checking whether he would be available for survey. Email to this effect giving details, map and requesting groups to consult. Following consultation with Local Aboriginal Land Council, decision made that John Thorpe would represent the ALALC on survey.

Table A.2 Consultation Stage 1: Aboriginal Group Registrations Received

Date	Organisation/group/individual	Contact Name	Details

Date	Organisation/group/individual	Contact Name	Details
19-Oct-07	Mindaribba LALC	Rick Griffiths	Phone call registering interest.
19-Oct-07	Awabakal Traditional Owners Aboriginal Corporation	Kerrie Brauer	Phone call registering interest.
19-Oct-07	Awabakal Descendents Traditional Owners Aboriginal Corporation	Shane Frost	Phone call registering interest.
19-Oct-07	Kukuyngal Barritjapa	John Thorpe	Phone call registering interest.

Table A.3 Consultation Stage 2: Briefing and Methodology Advice Sent

Date	Organisation/group/individual	Contact Name	Details
22-Oct-07	Mindaribba LALC	Rick Griffiths	Email of methodology and invitation to participate in fieldwork; survey date of 29 Oct to 2 Nov 2007.
22-Oct-07	Awabakal Traditional Owners Aboriginal Corporation	Kerrie Brauer	Email of methodology and invitation to participate in fieldwork; survey date of 29 Oct to 2 Nov 2007.
22-Oct-07	Awabakal Descendents Traditional Owners Aboriginal Corporation	Shane Frost	Email of methodology and invitation to participate in fieldwork; survey date of 29 Oct to 2 Nov 2007.
22-Oct-07	Kukuyngal Barritjapa	John Thorpe	Email of methodology and invitation to participate in fieldwork; survey date of 29 Oct to 2 Nov 2007.

Table A.4 Consultation Stage 2: Aboriginal Comments Received

Date	Organisation/group/individual	Contact Name	Details
22-Oct-07	Mindaribba LALC	Rick Griffiths	Phone conversation to confirm scope of the survey, route, intended participants and any further comments. Agreed with ERM's approach.
22-Oct-07	Awabakal Traditional Owners Aboriginal Corporation	Kerrie Brauer	Phone conversation to confirm scope of the survey, route, intended participants and any further comments. Agreed with ERM's approach.
22-Oct-07	Awabakal Descendents Traditional Owners Aboriginal Corporation	Shane Frost	Phone conversation to confirm scope of the survey, route, intended participants and any further comments. Agreed with ERM's approach.
22-Oct-07	Kukuyngal Barritjapa	John Thorpe	Phone conversation to confirm scope of the survey, route, intended participants and any further comments. Agreed with ERM's approach.

Table A.5 Consultation Stage 3: Draft Report Provided

Date	Organisation/group/individual	Contact Name	Details
After initial client review	Mindaribba LALC	Rick Griffiths	Draft report and outcomes provided during community meeting. Input into Aboriginal mitigation recommendations provided during the meeting and December 2007. Final draft report supplied during public exhibition of Coal & Allied assessments.
After initial client review	Awabakal Traditional Owners Aboriginal Corporation	Kerrie Brauer	Draft report and outcomes provided during community meeting. Input into Aboriginal mitigation recommendations provided during the meeting. Final draft report supplied during public exhibition of Coal & Allied assessments.
After initial client review	Awabakal Descendents Traditional Owners Aboriginal Corporation	Shane Frost	Draft report and outcomes provided during community meeting. Input into Aboriginal mitigation recommendations provided during the meeting. Final draft report supplied during public exhibition of Coal & Allied assessments.
After initial client review	Kukuyngal Barritjapa	John Thorpe	Draft report and outcomes provided during community meeting. Input into Aboriginal mitigation recommendations provided during the meeting. Final draft report supplied during public exhibition of Coal & Allied assessments.

Table A.6 Consultation Stage 3: Aboriginal Comments Received – During Meeting

Date	Organisation/group/individual	Contact Name	Details
Nov 07	Mindaribba LALC	Rick Griffiths	Discussion of report, findings and recommendations during meeting 19-22 Nov. Agreed with the results and fed further comments directly into the meeting process. Results of this process have been used to modify concept plans for Black Hill.
Nov 07	Awabakal Traditional Owners Aboriginal Corporation	Kerrie Brauer	Discussion of report, findings and recommendations during meeting 19-22 Nov. Agreed with the results and fed further comments directly into the meeting process. Results of this process have been used to modify concept plans for Black Hill.
Nov 07	Awabakal Descendents Traditional Owners Aboriginal Corporation	Shane Frost	Discussion of report, findings and recommendations during meeting 19-22 Nov. Agreed with the results and fed further comments directly into the meeting process. Results of this process have been used to modify concept plans for Black Hill.
Nov 07	Kukuyngal Barritjapa	John Thorpe	Discussion of report, findings and recommendations during meeting 19-22 Nov. Agreed with the results and fed further comments directly into the meeting process. Results of this process have been used to modify concept plans for Black Hill.

Annex B

Effective Coverage Table

Table B.1 Effective Coverage

Transect	Landform	Length (m)	Width (m)	Area (m²)	Visibility	Exposure	Visible area (m²)	Area available for detection (m²)	% Effective coverage
1	Flat	169	10	1690	90%	80%	1521	1216.8	72%
2	Simple Slope	1152	10	11520	100%	100%	11520	11520.0	100%
3	Simple Slope	1099	6	6594	10%	20%	659.4	131.9	2%
4	Flat	1488	2.5	3720	20%	20%	744	148.8	4%
5	Simple Slope	1139	3	3417	90%	90%	3075.3	2767.8	81%
6	Slope adjacent to Open Depression	1555	8	12440	80%	40%	9952	3980.8	32%
7	Gentle slope	1480	10	14800	50%	20%	7400	1480.0	10%

ERM has over 100 offices across the following countries worldwide

Australia
Argentina
Belgium
Brazil
China
France
Germany
Hong Kong
Hungary
India
Indonesia
Ireland
Italy
Japan
Korea
Malaysia
Mexico
Netherlands
New Zealand
Peru
Poland
Portugal
Puerto Rico
Singapore
Spain
Sri Lanka
Sweden
Taiwan
Thailand
UK
USA
Venezuela
Vietnam

Environmental Resources Management

Building C, 33 Saunders Street
Pyrmont NSW 2009
Locked Bag 24,
Broadway NSW 2007

T: 61 2 8584 8888
F: 61 2 8584 8800
www.erm.com

ERM