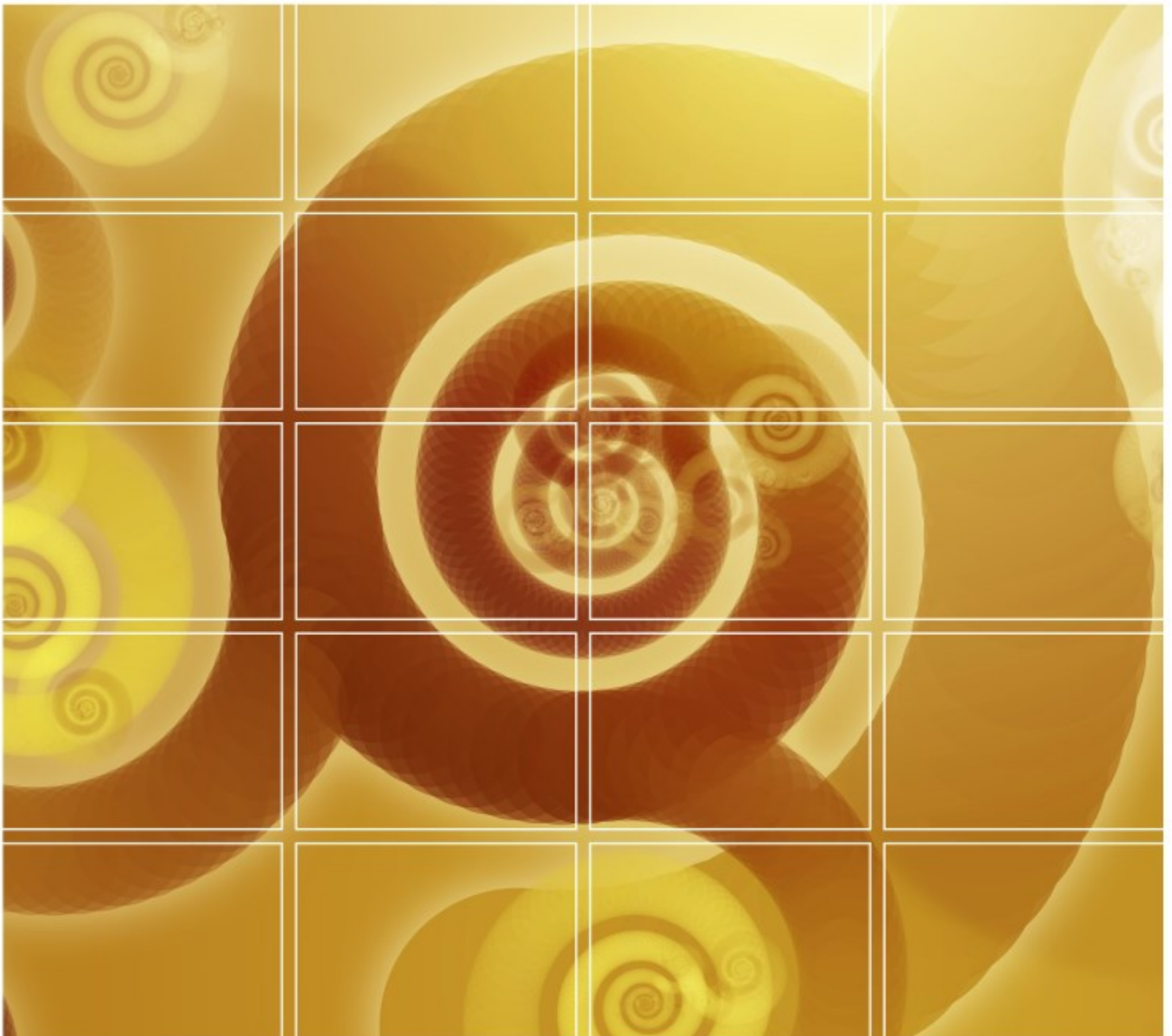


Annex D

Heritage Assessment



Sancrox Quarry *Heritage Assessment*

Hanson Construction Materials Pty Ltd

August 2019

0418291

www.erm.com

Approved by:	<i>Thomas Buchan</i>
Position:	Project Manager
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Date:	28 August 2019

Environmental Resources Management Australia Pty Ltd

Sancrox Quarry *Heritage Assessment_Final*

Hanson Construction Materials Pty Ltd (Hanson)

August 2019

0418291_Final

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TERMS, DEFINITIONS & ABBREVIATIONS

ABBREVIATION	DEFINITION
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
BLALC	Birpai Local Aboriginal Land Council
CHL	Commonwealth Heritage List
DECCW	Department of Environment and Climate Change and Water
DoE	Department of Environment (now Department of Environment and Energy)
DP&E	Department of Planning and Environment
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ERM	Environmental Resources Management Australia Pty Ltd
Hanson	Hanson Construction Materials Pty Ltd
HIS	Heritage Impact Statement
IBRA	Interim Biogeographic Regionalisation for Australia
IHO	Interim Heritage Orders
LGA	Local Government Area
NNTT	National Native Title Tribunal
NPW Act	National Parks and Wildlife Act 1974
NPWS	NSW National Parks and Wildlife Services
NTS Corp	Native Title Services Corporation
OEH	Office of Environment and Heritage (NSW)
ORALRA	Office of The Registrar, Aboriginal Land Rights Act
PAD	Potential Archaeological Deposit
PMHC	Port Macquarie Hastings Council
QA	Quality Assurance
RAP	Registered Aboriginal Party
RNE	Register of the National Estate
RPS HSO	RPS Harper Somers O'Sullivan
SEARS	Secretary's Environmental Assessment Requirement's
SHR	State Heritage Register
SSD	State Significant Development #7293
tpa	Tonnes per annum

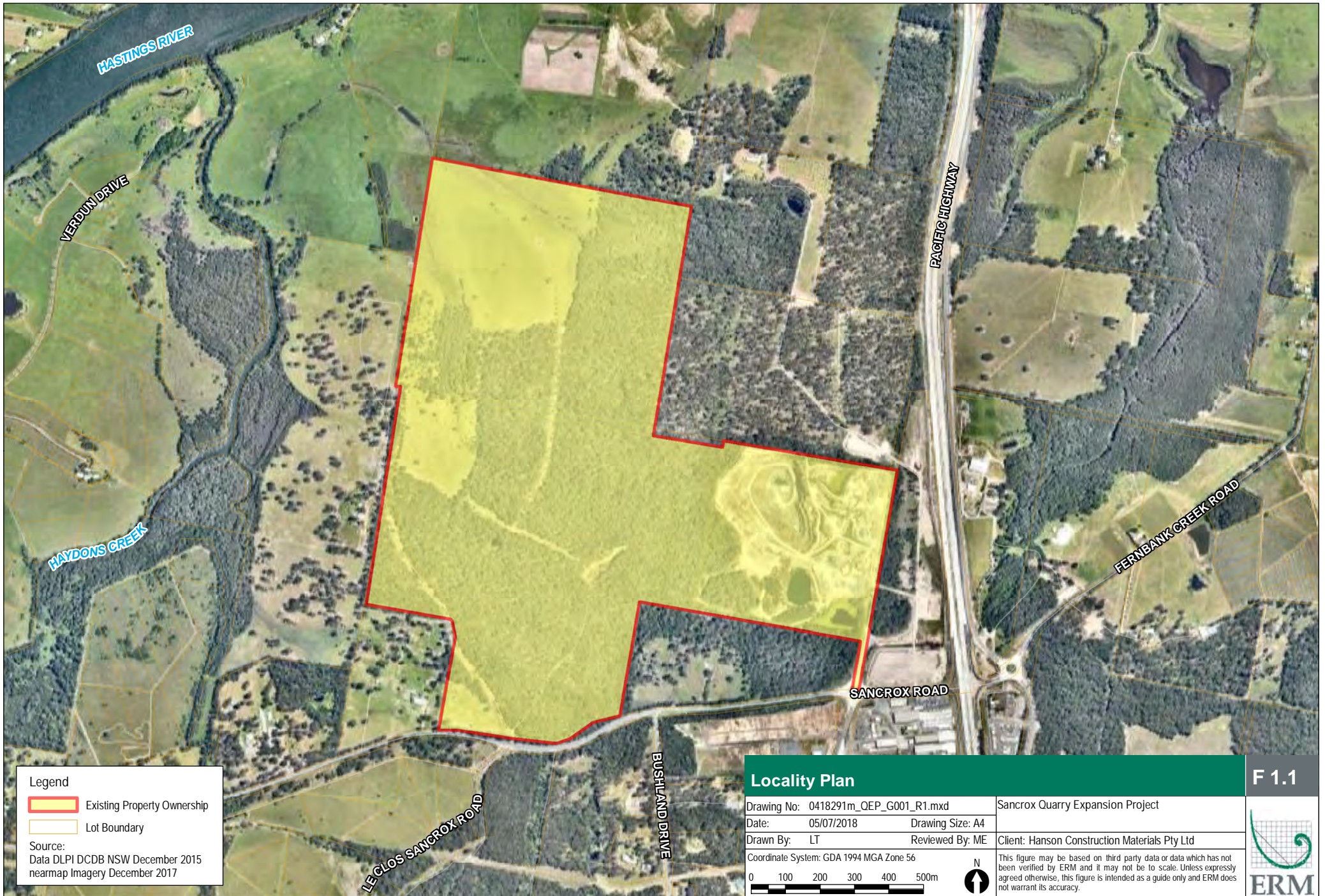
TERM	DEFINITION
Aboriginal Heritage Impact Permit	a permit issued by the Director General of the Office of Environment and Heritage (OEH) (or their delegate) allowing a person to desecrate or harm an Aboriginal Place or Aboriginal objects. Not required for SSD.
Aboriginal object (as defined in the <i>NPW Act</i>)	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.
Aboriginal Place (as defined in the <i>NPW Act</i>)	a place declared under s.84 of the <i>National Parks and Wildlife Act 1974 (NPW Act)</i> that, in the opinion of the Minister, is or was of special significance to Aboriginal culture. Information about the location of Aboriginal Places in NSW can be found on the OEH website at www.environment.nsw.gov.au/nswcultureheritage/PlacesOfSignificance.htm .
Aboriginal culturally modified tree (as defined in the <i>NPW Regulation</i>)	a tree that, before or concurrent with (or both) the occupation of the area in which the tree is located by persons of non-Aboriginal extraction, has been scarred, carved or modified by an Aboriginal person by: <ul style="list-style-type: none"> the deliberate removal, by traditional methods, of bark or wood from the tree, or the deliberate modification, by traditional methods, of the wood of the tree.
activity	a project, development, activity or work (this term is used in its ordinary meaning, and does not just refer to an activity as defined by Part 5 of the <i>Environmental Planning and Assessment Act 1979 (EP&A Act)</i>).
disturbed land or land already disturbed by previous activity	land is disturbed if it has been the subject of a human activity that has changed the land's surface, being changes that remain clear and observable. Examples include ploughing, construction of rural infrastructure (such as dams and fences), construction of roads, trails and tracks (including fire trails and tracks and walking tracks), clearing vegetation, construction of buildings and the erection of other structures, construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure) and construction of earthworks.
due diligence	taking reasonable and practical steps to determine whether a person's actions will harm an Aboriginal object and, if so, what measures can be taken to avoid that harm:
harm an Aboriginal object (as defined in the <i>NPW Act</i>)	<ul style="list-style-type: none"> destroy, deface, damage an object move an object from the land on which it is situated cause or permit an object to be harmed.
Burra Charter	Australian best heritage practice reference that provides guidance for the conservation and management of places of cultural significance (cultural heritage places)
Minister	Minister administering the <i>NPW Act</i>
<i>Source: DECCW (2010). Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales.</i>	

Environmental Resources Management Australia Pty Ltd (ERM) was commissioned by Hanson Construction Materials Pty Ltd (Hanson) to undertake a Heritage Assessment to inform the Environmental Impact Statement (EIS) for the Sancrox Quarry Expansion Project (the Project). The proposed Project is a State Significant Development (SSD #7293) and therefore the planning approvals process is regulated under Part 4 of the *Environmental Planning and Assessment Act 1979* (the EP&A Act), which requires Department of Planning and Environment (DP&E) approval for development consent, supported by an EIS.

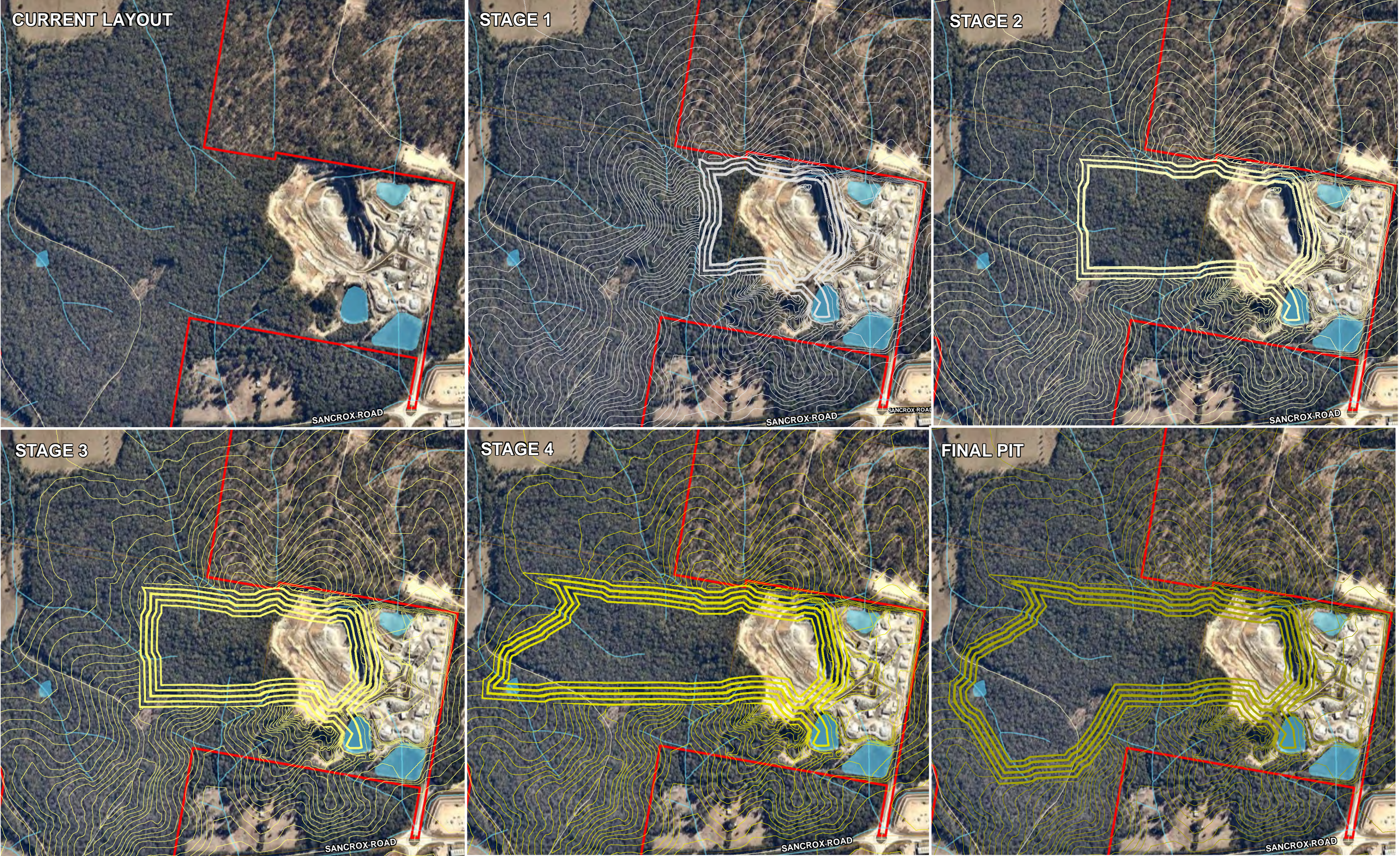
1.1**DESCRIPTION OF THE PROPOSED DEVELOPMENT**

Hanson currently operates a hard rock quarry, known as Sancrox Quarry, on Sancrox Road, Sancrox, located approximately 8 kilometres (km) west of Port Macquarie, within the Port Macquarie Hastings Council (PMHC) local government area (LGA) (*Figure 1.1*). The quarry has been owned and operated by Hanson since 1998, and is considered a major economic resource for regional and state development. The proposed Project will extend the life of the quarry by expanding the approved extraction boundary to facilitate the extraction and distribution of high quality construction materials for the use in civil infrastructure and road construction projects.

Hanson is proposing to increase the current annual maximum extraction limit from approximately 455,000 tonnes per annum (tpa) to 750,000 tpa. This will involve an expansion of the quarry footprint in a westerly direction into Lot 2, DP 574308 (*Figure 1.2*). Additionally, the proposed Project includes the construction of a new concrete batching plant and recycling facility, asphalt production plant and pug mill at the quarry site (*Figure 1.3*).



F 1.1





Legend

- Existing Property Ownership
- Lot Boundary
- Infrastructure
- Haul Road
- Road Network

Source:
Spatial Data: DFSI DCDB/DTDB 2017
Imagery Data: nearmap August 2017

Ancillary Infrastructure		F 1.3
Drawing No: 0418291s_HRA_G002_R3.mxd	Sancrox Quarry Expansion Project	
Date: 30/09/2019	Drawing Size: A4	Heritage Assessment Report
Drawn By: GC	Reviewed By: ME	Client: Hanson Construction Materials Pty Ltd
Coordinate System: GDA 1994 MGA Zone 56		This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.
0 25 50m		

1.2

OBJECTIVES AND SCOPE

This work has been conducted to conform to the Secretary's Environmental Assessment Requirement's (SEARs) for the Project and has been undertaken in accordance with the following current legislation, regulations and best practice guidelines:

- *National Parks and Wildlife Act 1974*;
- *Heritage Act 1977*;
- Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010a) (Consultation Guidelines);
- Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (DECCW 2010b);
- Code of practice for archaeological investigation of Aboriginal objects in NSW (DECCW 2010c);
- Guide to investigating, assessing; and reporting on Aboriginal cultural heritage in NSW (OEH 2011); and
- the Australia ICOMOS Burra Charter 2013 (Burra Charter).

This report provides a combined assessment of the tangible and intangible cultural heritage values relating to the Project area as defined during desk based and field surveys undertaken during November 2017.

1.3

SEARs AND AGENCY COMMENTS

With specific reference to Heritage, the SEARs require:

SEARs	Where addressed
An assessment of the potential impacts on Aboriginal heritage (cultural and archaeological), including evidence of appropriate consultation with relevant Aboriginal communities/parties and documentation of the views of these stakeholders regarding the likely impact of the development on their cultural heritage; and	Section 3 Annex A
Identification of historic heritage in the vicinity of the development and an assessment of the likelihood and significance of impacts on heritage items, having regard to the relevant policies and guidelines.	Section 5 Section 6.4

The Heritage Council of NSW (the Heritage Council) submission for the revised SEARs notes that that an early grave is identified from the National Trust Register in the suburb of Sancro. In this regard the area may have other historical archaeological potential associated with the development of the settlement of PMHC LGA which requires consideration and management.

The Heritage Council recommends that:

Heritage Council Requirements	Where addressed
<p>The EIS should identify if there are any potential heritage items within the proposed Project area including historical archaeological potential. If any potential heritage items are likely to be affected, a Heritage Impact Statement (HIS) must be prepared in accordance with the guidelines in the NSW Heritage Manual 1996. The HIS should assess how the development would impact on any places of heritage significance in or surrounding the SSD site.</p>	<p>Section 5</p> <p>Section 6.4</p> <p><i>No historical heritage items were found during the field survey, and there are no known non-Aboriginal heritage items located within the Project area.</i></p>
<p>A historical archaeological assessment should be prepared by a suitably qualified historical archaeologist in accordance with the Heritage Division, Office of Environment and Heritage Guidelines 'Assessing Significance for Historical Archaeological Sites and 'Relics' 2009. This assessment should identify what relics, if any, are likely to be present, assess their significance and consider the impacts from the proposal on this potential resource. Where harm is likely to occur, it is recommended that the significance of the relics be considered in determining an appropriate mitigation strategy. If harm cannot be avoided in whole or part, an appropriate Research Design and Excavation Methodology should also be prepared to guide any proposed excavations.</p>	

The NSW Office of Environment and Heritage (OEH) submission for the revised SEARs includes the following standard requirements:

OEH Standard Requirements	Where addressed
<p>The EIS must identify and describe the Aboriginal cultural heritage values that exist across the whole area that will be affected by the project and document these in the EIS. This may include the need for surface survey and test excavation. The identification of cultural heritage values should be guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011) and consultation with OEH regional officers.</p>	<p>Section 4</p> <p>Section 6</p>
<p>Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS.</p>	<p>Section 3</p> <p>Annex A</p>
<p>Impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.</p>	<p>Section 8</p> <p>Section 9</p>
<p>The EIS must provide a heritage assessment including but not limited to an assessment of impacts to State and local heritage including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall:</p>	<p>Section 5</p> <p>Section 6.4</p> <p><i>No historical heritage items were found during the field survey, and there are no known</i></p>

OEH Standard Requirements	Where addressed
<p>outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996),</p> <ol style="list-style-type: none"> be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria), include a statement of heritage impact for all heritage items (including significance assessment), consider impacts including, but not limited to, vibration, demolition, archaeological disturbance , altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations. 	<i>non-Aboriginal heritage items located within the impact area.</i>

The OEH submission for the revised SEARs includes the following project-specific requirements:

OEH Project-Specific Requirements	Where addressed
The assessment of cultural heritage values must include a surface survey undertaken by a qualified archaeologist in areas with potential for subsurface Aboriginal deposits. The result of the surface survey is to inform the need for targeted test excavation to better assess the integrity, extent, distribution, nature and overall significance of the archaeological record. The results of surface surveys and test excavations are to be documented in the EIS.	<i>Section 6</i>
The EIS must outline procedures to be followed if Aboriginal objects are found at any stage of the life of the proposal to formulate appropriate measures to manage unforeseen impacts.	<i>Section 9.2.1</i>
The EIS must outline procedures to be followed in the event Aboriginal burials or skeletal material is uncovered during construction to formulate appropriate measures to manage the impacts to this material.	<i>Section 9.2.1</i>

1.4

AUTHORSHIP

Katherine Deverson (ERM Heritage Consultant) conducted the field survey on Wednesday 15 November and Thursday 16 November 2017. Joanne Woodhouse (ERM Senior Consultant) authored the report and Katherine Deverson (ERM Heritage Consultant) undertook a technical review. Matthew Errington (ERM Project Manager) and Paul Douglass (ERM Partner) undertook quality assurance (QA) reviews of the report.

This report is structured in the following way:

<i>Chapter 2</i>	Legislative framework;
<i>Chapter 3</i>	Aboriginal community consultation undertaken for the heritage assessment;
<i>Chapter 4</i>	Background - Environmental and landscape background, archaeological context and Aboriginal heritage predictive model;
<i>Chapter 5</i>	Historical background relating to the Project area;
<i>Chapter 6</i>	Survey methodology and results;
<i>Chapter 7</i>	Significance assessment of sites located within the Project area;
<i>Chapter 8</i>	Impact assessment; and
<i>Chapter 9</i>	Heritage management and impact mitigation recommendations.

In addition, there are three annexes, including:

<i>Annex A</i>	Log of the Stakeholder consultation undertaken for the project
<i>Annex B</i>	Heritage Database Searches
<i>Annex C</i>	Parish Maps

Approval for the Project is sought under Division 4.1 (SSD) of Part 4 of the EP&A Act. Several conditions relating to the heritage matters of the Project were provided as part of the SEARs. These are discussed in *Section 1.2*.

Aboriginal cultural heritage in NSW is protected by the *National Parks and Wildlife Act 1974 (NPW Act)*. Land managers are required to consider the effects of their activities or proposed development on the environment under several pieces of legislation, principally the EP&A Act. Cultural heritage, which includes Indigenous heritage, is subsumed within the definition of “environment”. Commonwealth legislation protecting Indigenous heritage may also apply to Indigenous heritage places in NSW in certain circumstances. Key legislation is summarised in *Table 2.1* below.

Table 2.1 **Key Legislation**

State Legislation
<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
<p>The <i>Environmental Planning and Assessment Act 1979</i> (EP&A Act) and the <i>Environmental Planning and Assessment Regulation 2000</i> (EP&A Regulation) provide the statutory framework for the assessment of the activity. Section 79C of the EP&A Act requires the consent authority to take into consideration a range of matters when undertaking an assessment of a DA. The EP&A Act requires that environmental impacts are considered in land use planning, including impacts on Aboriginal and non-Aboriginal heritage. Various planning instruments prepared under the Act identify permissible land use and development constraints.</p> <p>The NSW National Parks and Wildlife Services (NPWS) provide guidelines for Aboriginal heritage assessment, including those conducted under the EP&A Act. Where Aboriginal heritage assessment is conducted under the Integrated Development Approval process, a more detailed set of NPWS guidelines applies.</p> <p>Part 4 of the EP&A Act 1979 lays the foundation for the legislative scheme. It contains the major concepts and addresses the major matters of principle. The regulations under Part 4 contain much of the detail of the various processes that, having regard to the nature of the proposed development, lead to the granting of development consent. They also largely determine whether development is designated development.</p> <p>Part 4 Division 4.1 of the Act provides a process for the assessment and approval of SSD and are subject to environmental assessment requirements, prepared by the Director General. Under Schedule 2(3) (4) of the <i>Environmental Planning and Assessment Regulation 2000</i>, the Director General is required to ‘consult relevant public authorities and have regard to the need for the requirements to assess any key issues raised by those public authorities’. The SEARs for the Project were issued on 18 September 2017.</p>
<i>National Parks and Wildlife Act 1974 (NSW)</i>
<p>All Indigenous objects within the State of New South Wales are protected under Part 6, and particularly Section 90, of the NPW Act.</p> <p>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 Indigenous habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.</p> <p>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</p>

State Legislation
<p>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.</p> <p>It is required that an Aboriginal Heritage Impact Permit (AHIP) be obtained for any impact to an Aboriginal object or place. The OEH is the responsible authority, with the Director General of that department the consent authority. However, as this Project is being assessed as a SSD, the OEH will not be the relevant consent authority and AHIPs will not be required for impacts to Aboriginal heritage objects or places. Consent approval will be required to be obtained from the DP&E.</p>
<i>Heritage Act 1977 (NSW)</i>
<p>The NSW <i>Heritage Act 1977</i> establishes the NSW Heritage Council and the State Heritage Register (SHR). The aim of the Act is to conserve the heritage of New South Wales. The aim of heritage management is not to prevent change and development, but to ensure that the heritage significance of recognised heritage items is not harmed by changes.</p> <p>The SHR is a separate listing to the State Heritage Inventory and includes items which are accorded SHR listing through gazettal in the NSW Government Gazette. Nominated items are considered by the NSW Heritage Council which then makes a recommendation to the Minister for Heritage. The Minister is empowered to place Interim Heritage Orders (IHO) on an item of potential State significance on the basis of advice received from the Heritage Council :</p> <ol style="list-style-type: none"> An item is important in the course, or pattern, of NSW's cultural or natural history. 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. An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW. An item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons. An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history. An item possesses uncommon, rare, or endangered, aspects of NSW's cultural or natural history. An item is important in demonstrating the principal characteristics of a class of NSW's a) cultural or natural places: or b) cultural or natural environments.
Commonwealth Legislation
<i>Environment Protection And Biodiversity Conservation Act 1999 (Commonwealth)</i>
<p>The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places – defined in the Act as matters of national environmental significance. The EPBC Act focuses on the protection of matters of national environmental significance, with the states and territories having responsibility for matters of state and local significance.</p> <p>The Commonwealth Heritage List (CHL) is established under the EPBC Act and comprises places on Commonwealth land or owned by Commonwealth Agencies that are determined to have “significant” heritage value to Australia. The Act also establishes the National Heritage List, comprising places considered to be of “outstanding” heritage value to Australia.</p>
<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)</i>
<p>The <i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i> 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.</p>

This chapter contains a summary of the Aboriginal community consultation undertaken in regard to the Aboriginal cultural heritage of the Project area. Consultation with the Aboriginal community has been undertaken in accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010). A full record of this consultation process is provided in Annex A.

On behalf of the Proponent, ERM has actively sought to identify stakeholder groups or people wishing to be consulted about the Project and has invited them to register their interest as follows:

To identify relevant stakeholders, letters about the proposed activity were supplied to the following bodies on 30 August 2017:

- Birpai Local Aboriginal Land Council (BLALC);
- NSW OEH;
- Local Land Services (North Coast);
- National Native Title Tribunal (NNTT);
- Native Title Services Corporation (NTS Corp);
- Office of the Registrar, Aboriginal Land Rights Act (ORALRA); and
- Port Macquarie-Hastings Council (PMHC).

A local press advertisement requesting Aboriginal party participation was placed in the Port News on Wednesday 6 September 2017. The response period for Aboriginal parties to register an interest in the Project was open for two consecutive weeks.

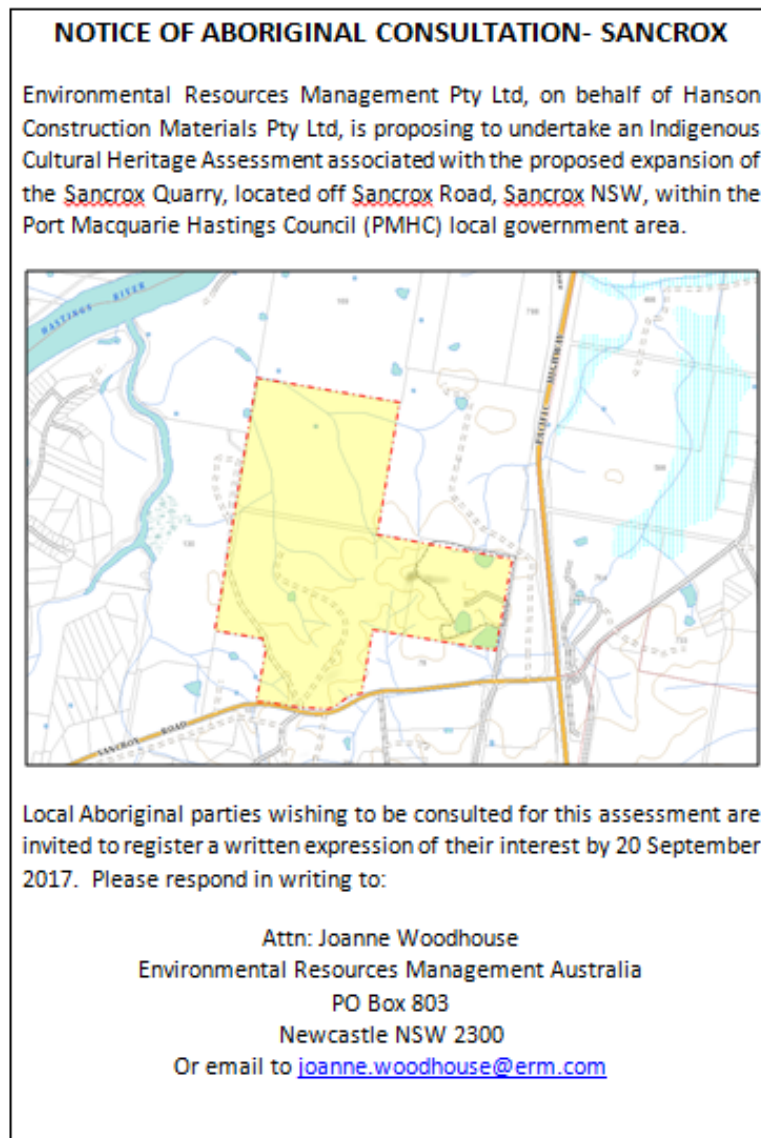


Figure 3.1 *Newspaper Advertisement in the Port News*

Four Aboriginal parties registered an interest in being consulted:

- Birpai Traditional Owners Indigenous Corporation;
- BLALC;
- Yanggaay; and
- Norm Archibald.

On 17 October 2017, each registered Aboriginal stakeholder group was provided an outline of the scope and a proposed survey methodology. No comments were received on the proposed methodology from any of the Aboriginal stakeholders.

The Project area is situated within the BLALC boundaries. Accordingly, a representative of this land council (Jason Holten; also representing Birpai Traditional Owners Indigenous Corporation) participated in the field assessment.

A draft copy of this Heritage Assessment was provided to all registered Aboriginal parties on 19 January 2018, for the purposes of receiving comments on the cultural significance of the Project area. A response was received on 14 March 2018 from the Birpai Local Aboriginal Land Council confirming that they are satisfied with the assessment, methodology and the protocols and do not wish to make any further comments.

4.1

ENVIRONMENTAL CONTEXT

Interactions between people and their surroundings are of integral importance in both the initial formation and the subsequent preservation of the archaeological record. The nature and availability of resources, including water, flora, fauna, and stone materials had (and continues to have) a significant influence over the way in which people use the landscape.

Alterations to the natural environment also impact upon the preservation and integrity of cultural materials within that environment. Current vegetation and erosional regimes also affect the visibility and detectability of Aboriginal sites and objects. For these reasons, it is essential to consider environmental factors as a component in any heritage assessment.

4.1.1

Bioregion

Bioregions and sub-bioregions are large, geographically distinct areas of land with common characteristics such as geology, landform patterns, climate, ecological features and plant and animal communities. The Interim Biogeographic Regionalisation for Australia (IBRA; Department of the Environment (DoE) 2014) provides a regional and national planning framework for the systematic development of a comprehensive, adequate and representative National Reserve System. Bioregions delineate salient environmental characteristics, which can highlight patterns in Aboriginal site patterning.

NSW has 17 identified bioregions. The Project area is located within the NSW North Coast bioregion, which extends along the coast from Tea Gardens north to just over the Queensland border. It is bordered by the Sydney Basin bioregion to the south, and the New England Tableland bioregion to the west. The total area of this bioregion is 5,924,130 ha, and the NSW portion is 5,692,351.6 ha; it occupies 7.11% of NSW (OEI 2016). A summary of the main attributes of the bioregion are provided in *Table 4.1*.

Table 4.1

Summary of Attributes for the South Eastern Highlands Bioregion

Characteristic	Description
Geology	The North Coast Bioregion is one of the most diverse in NSW. It has Devonian and Permian bedrocks that are part of the New England Fold Belt and have been closely faulted as they were thrust over the northern margin of the Sydney Basin. Small bodies of granite and granodiorite have intruded the sedimentary rocks and there are three centres of Tertiary basalt eruption.
Landforms	The region overlies dissected ranges and plateau of the Great Dividing Range, extending to the Great Escarpment in the east and the western slopes of inland drainage basins. The region covers a variety of landforms such as steep to gentle slopes, ridges and valley floors.

Characteristic	Description
Soils	The soil and vegetation patterns in the bioregion are very complex because of the different substrates, the topographic variation and the climatic differences encountered across and along the bioregion.
Vegetation	The region contains a diverse range of vegetation communities such as yellow box, red box, Blakely's red gum, white box and white gum to the west of the region, brown barrel to the east, river oak along streams, grey gum and Blaxland's Stringybark in lower areas and brown barrel, mountain gum, narrow-leaved peppermint and ribbon gum on elevated areas.
Source: OEH 2016	

4.1.2 *Topography and Landforms*

The topography surrounding the Project area is characterised by flood plains and low lying hills up to approximately 60m Australian Height Datum (AHD) which is the highest point of the Project area. The eastern portion of the Project area has been disturbed by active quarrying activities while, the west and northwest portions of the Project area are characterised by remnant and regenerating woodland vegetation and some smaller isolated sections of cleared pasture.

Speight (1990) describes categories of landform divisions, including ten morphological types of landform element units. For archaeological investigations they divide the landscape into standardised elements that can be used for comparative purposes and predictive modelling. The Project area is predominantly slopes, ridges and flats. Aboriginal site types most likely to occur on these landforms are stone artefact sites (scatters and isolated finds).

4.1.3 *Geology and Soils*

The 1:250,000 Hastings Geological Map Series SH 56-14 indicates that the Project area is situated over the Byabbara Beds Formation of the Carboniferous Period and Palaeozoic Era. The Byabbara Beds are characterised by lithic sandstone, siltstone, tuff, shale and limestone.

The soils at the quarry site have predominately been removed prior to the excavation of the quarry in search of 'hard rock'. The highly disturbed extraction area is characterised by exposed rock.

4.1.4 *Hydrology*

The availability of water has significant implications for the range of resources present and the suitability of an area for human occupation. The Project area is bordered to the north and west by the alluvial flood plains of the Hastings River and Haydons Creek.

4.1.5

Flora and Fauna

The flora and fauna of the Project area would have supported a rich and diverse resource base. Large trees were available for bark and fibres in order to make tools and containers. Resinous saps would have been used in the hafting process. Grasses would also have been twisted to produce twines that would then be woven into baskets or used in traps. The vegetation as a whole supported extensive faunal resources. These included wallabies, possums, snakes, lizards, and birds, which would all have been utilised as sources of food. Faunal resources were also utilised as the source of such things as clothing and bedding (skins and furs), hafting tools (sinews and twisted fur fibres), decorative items (feathers) and utilitarian items such as twine (twisted fur fibres and soft barks). Resources gathered in the area may also have been traded with neighbouring tribes for items not readily available.

The resources provided in the riparian/wetland habitats would have provided food for Indigenous communities and predators such as snakes and lizards. Both the Hastings River and Haydons Creek would have provided abundant aquatic resources.

4.1.6

Land Use and Disturbance

Land use and associated disturbances impact upon the archaeological record in terms of both the presence or absence of cultural materials and the integrity of any remaining deposits.

The existing hard rock quarry provides the most dramatic and obvious land disturbance within the Project area. The remaining portions of the Project area have been logged and used for cattle grazing/agriculture. The environment surrounding the existing quarry includes remnant and in most cases regenerating woodland vegetation to the north, west and south. Farm dams, stock yards and abandoned farm machinery scattered within isolated clearings through the Project area provide further evidence of previous land use disturbance (refer to *Photographs 1 to 8*).



Photograph 1 - View of existing quarry, view to south-east (ERM 2017)



Photograph 2 - View of existing quarry, view to north-east (ERM 2017)



Photograph 3 - Old quarry site, approx. 300 m south-west of current quarry (ERM 2017)



Photograph 4 - Regenerating woodland, west of current quarry (ERM 2017)



Photograph 5 -
Regenerating woodland, west
of current quarry (ERM 2017)



Photograph 6 - Evidence of
previous land use and
farming activities (*these items
are not of any local heritage
significance*), approx. 750 m
north-west of current quarry
(ERM 2017)



Photograph 7 - Evidence of
land use and stock yards,
approx. 750 m north-west of
current quarry (ERM 2017)



Photograph 8 - Cleared floodplain, north-west of current quarry (ERM 2017)

4.1.7 *Implications for Archaeology*

The environmental context outlined above has a number of implications for archaeology in the Project area. Previous disturbance caused by intensive extraction, logging and farming activities indicates that much of the evidence of Aboriginal land use and occupation would no longer be visible. Few trees of suitable age to bear cultural scars remain within the Project area.

4.2 *ARCHAEOLOGICAL CONTEXT*

The following information provides the context in which Aboriginal cultural heritage in the Project area can be understood and assessed. It includes a review of early historic records relating to Aboriginal people within the region.

4.3 *ETHNOGRAPHIC CONTEXT*

Early historic records provide information about Aboriginal occupation along the northern NSW coastline during the period of early European settlement. Ethnographic accounts (historical accounts relating to Aboriginal people) can be used to obtain information about the way in which Aboriginal people in the area lived at the time of early European contact and may be used to make inferences regarding the pre-contact period.

As reported by ERM (2002), information relating specifically to the Aboriginal inhabitants of the Port Macquarie region is sporadic at best and in general, information regarding pre-contact Aboriginal lifestyle and culture are extrapolated from early European explorers to the area and archaeological evidence. However, some cultural information is still passed orally through the generations. For example, as reported by HSO (2008), Birpai men married Murrawon women (from Macleay River area), and Birpai women married Murrawon men (Hastings Writers, 2003:11). Conflicting opinion over the language groupings of the area has also confused the issue. Tindale, in his mapping of language groups, identified the Ngamba tribe in the Camden Haven/Port Macquarie region, with the Birpai occupying lands to the south and west of the Ngamba (1940). It is now generally accepted that the Ngamba

were located further north, around the Macleay and Nambucca estuaries, with the Birpai occupying the region around Port Macquarie (Collins, 1998).

Population estimates for the Macleay Valley (north of the Project area) suggest a prehistoric Aboriginal population of between 3 and 6 people per 2 km² of coastal lands (Coleman, 1981 as cited in Collins, 1998). It appears that the local area has a comparably rich resource base and therefore it is inferred that similar population figures exist for the Port Macquarie region. Due to the level of available resources, it is thought that the local population occupied the region continuously, rather than undertaking seasonal migrations between the coast and inland areas (Collins, 1998).

During his exploratory journey in the spring of 1818, John Oxley observed “abundant signs” of Aborigines and their camps along the full length of the Hastings Valley, and Parker King reported an encampment of 25 natives on Blackmans Point in the late autumn of 1819 (Parker King, 1822 as cited in Collins, 2004). A reasonably sedentary lifestyle is also indicated by the solid construction methods used for the waterproof paperbark huts discovered by Oxley on the Camden Haven. The huts had domed roofs, an entry on the sheltered side away from sea winds, and were capable of holding 8-10 people (Rogers, 1982 as cited in Collins, 2004).

Base camps were established in areas protected from the elements by dense vegetation (McFarlane, 1934-5 as cited in Collins, 2004) and would have been situated in sheltered areas offering suitable conditions, with a large number of small resource-specific sites scattered between. The location of these non-occupation sites was dependent on various factors relating to site function. For example, grinding grooves only occur where there is appropriate outcropping sandstone, but as close to the occupation site as possible. Scarred trees were variably located with no obvious patterning, other than proximity to watercourses, where occupation sites were more frequently located.

Many of the region’s material items were made from the bark or wood of various trees. These include spears, boomerangs, clubs, shields, digging sticks, containers and canoes. Aboriginal people controlled the natural fracture properties of fine-grained stones to produce a variety of cutting and scraping tools, many of which were used to manufacture and maintain these types of wooden items. Large uni-facially and bi-facially flaked and/or ground stone axes, characteristic of NSW coastal regions, featured prominently in the Birpai toolkit. The axe heads were usually hafted to a handle fashioned from a pliable vine (Collins, 2004).

As reported by Elaine Van Kempen (2003), Indigenous Australians in this area had experienced considerable loss of life from the early waves of smallpox, and had barely recovered when the British arrived to establish the settlement for recalcitrant convicts at Port Macquarie 1821. In 1840 the local Aboriginal people endeavoured to fight back, enlisting the help of the neighbouring Thungutti Nation but, as a result of the superior weaponry of the new arrivals, many were

killed near a place subsequently known as Blackman's Point (Van Kempen 2003).

Thomas Dick of Port Macquarie took many hundreds of photographs of Indigenous people during the early years of the twentieth century. Dick hoped that his work would 'produce scenes described by the early explorers such as Oxley' and his concern for the losses sustained by these people through European usurpation is evident in the photographs and their captions (Van Kempen 2003). Many of the photographs, which depict Aboriginal lifestyle, are thought to have been taken around the Lake Innes area. There are also references of Aboriginal occupation in this area in the journals of Major Innes' niece (NSW National Parks and Wildlife Service, 1999) and is located approximately 5 km to the south east of the Project area.

4.4 LOCAL ARCHAEOLOGICAL CONTEXT

A number of archaeological investigations have been undertaken in the Project area and broader Port Macquarie area. The results of these investigations provide an indication of the range, nature and distribution of archaeological sites within the local area and therefore provide essential background information for this study.

4.4.1 OEHS AHIMS Register

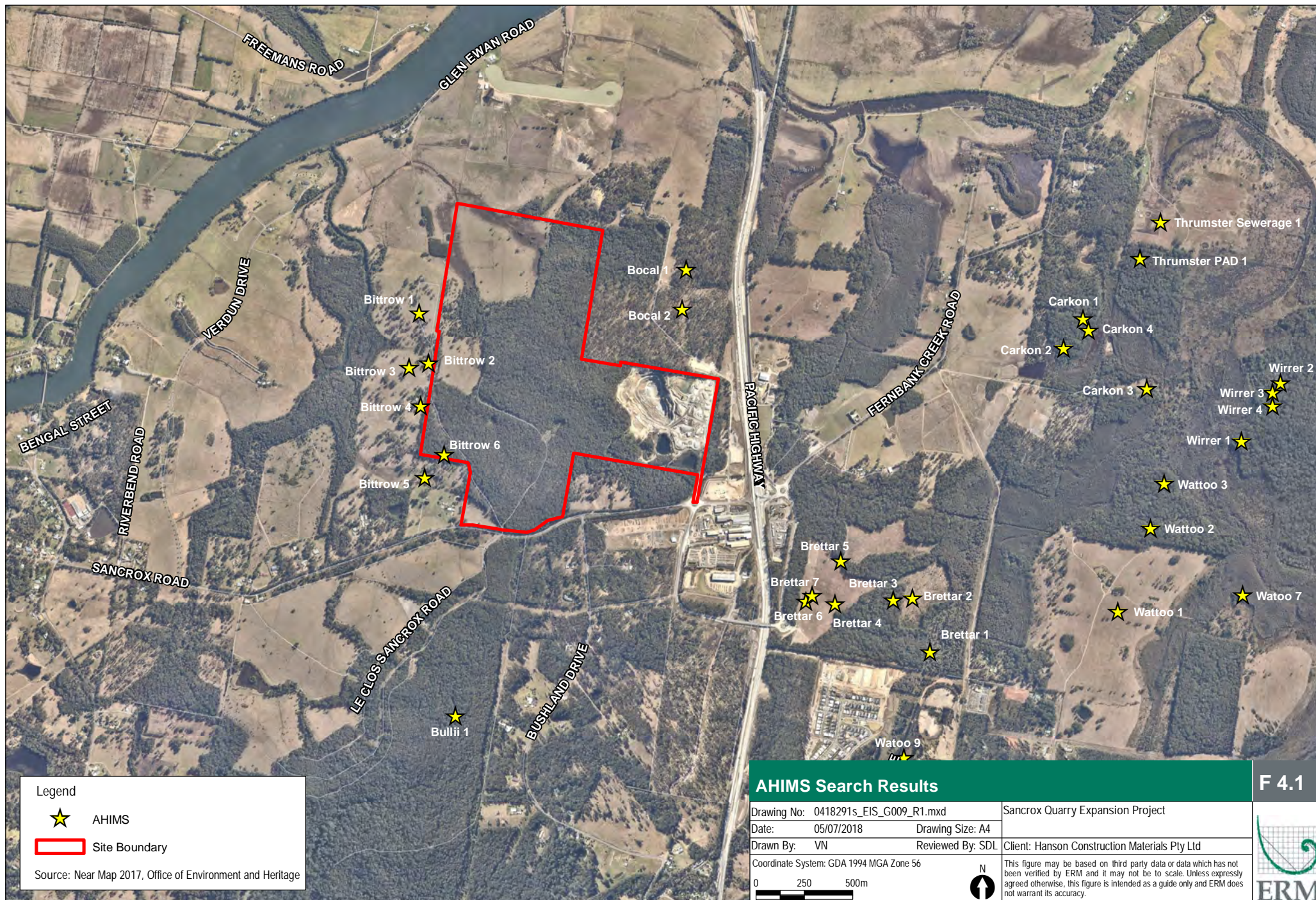
Aboriginal heritage sites recorded in NSW are generally reported to the OEHS and registered on the Aboriginal Heritage Information Management System (AHIMS) database. A search of the AHIMS database revealed that 92 sites have been recorded within a 10 square kilometre area (from Lat, Long: -31.4664, 152.7767 - Lat, Long To: -31.4117, 152.8634 with a Buffer of 1000 meters) surrounding the Project area (refer to *Annex B*). The numbers of recorded sites by site type are shown in *Table 4.2*.

Table 4.2 Results from AHIMS Search - Count by Site Types

Site Types	Number of Sites	Percentage
Restricted	4	5%
Isolated Artefact	23	28%
Middens	1	1.5%
Artefacts with Potential Archaeological Deposit	4	5%
Open Camp Site	47	56%
Stone Quarry	1	1.5%
TRE (Scarred or Carved Tree)	3	3%
Total	83	100.00%

The most common site features are artefact scatters or isolated artefacts making up 84% of the sites found in the search. Scarred or carved trees make up 3% of site types found, PADs being 5% and quarries and middens just 1.5% of the site types found.

The location of the restricted sites is not disclosed in this report, although they are noted to be greater than 2 km from the Project Area.



Legend

★ AHIMS

Site Boundary

Source: Near Map 2017, Office of Environment and Heritage

AHIMS Search Results		F 4.1
Drawing No: 0418291s_EIS_G009_R1.mxd	Sancrox Quarry Expansion Project	
Date: 05/07/2018	Drawing Size: A4	Client: Hanson Construction Materials Pty Ltd
Drawn By: VN	Reviewed By: SDL	
Coordinate System: GDA 1994 MGA Zone 56		This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.
0 250 500m		

N

A number of archaeological investigations have been conducted in the Port Macquarie region over the last twenty years. The available studies give a broad picture of the wider cultural landscape and the site types, frequencies and distribution patterns that have contributed to the current understanding of the archaeological record in the region. The findings from these investigations echo those of the regional studies and define the archaeological context of the Project area. Studies most relevant to the Project are briefly summarised in *Table 4.3*.

As noted by Collins (1995) Area 13, which includes the current Project area, is on the whole very well-watered, with all parts of it being within easy walking distance of a potential water source. Access to fresh water is reported to be important for site placement, with no cultural materials being detected further than 350 m from either a perennial or seasonal water source. Swamps appear to have been the most favoured source, although they do represent the most common source type in the area. There also appears to have been a strong preference for sites along elevated sections of the Hastings River bank, on footslopes near water sources, and along spur crests and saddles. There is an overall trend toward a greater number of site locations with decreased elevation, with the larger and most complex sites all occurring below 10 m AHD.

Slope also appears to have been an important criterion in site placement, with an outstanding preference shown for low-gradient land. No cultural materials were found on slopes greater than 10°, and the vast majority of sites were found on slopes of 5° or less. All of the larger and more complex sites had been established on very gentle grades. Sites were found in all aspect contexts, although there is a strong preference for sites to face N.N.W.-N.E. (316°- 45°). Given that cold winter winds blow from the west and south west and that cool summer breezes blow from the north east, this land use preference may well have been a direct response to the need to seek both protection from adverse weather conditions and relief from summer heat (Collins, 1995).

Although site locations were recorded across all geological units, there does appear to have been a significant preference for occupation of lands based on the Touchwood Formation and Fault Zone Complex rocks which are sandwiched between faults in the south eastern section of Area 13. The higher incidence of artefacts on these substrates may be related to the superior flaking qualities exhibited by their constituent rocks.

Table 4.3 Summary of Previous Archaeological Investigations

Author of Report	Relation to Project area	Details of sites recorded/recommendations
Appleton 1996	Archaeological Investigation of the current Project area for the proposed quarry operations.	<u>Archaeological Investigation of the site of proposed quarry operations at Sancrox Road, Wauchope, NSW</u> This report was commissioned by Anthony Thorne & Associates pursuant to information received from the local Aboriginal community that a ceremonial site once existed at the site of a proposed quarry. Appleton found that there was no evidence to support the existence of a ceremonial site, however, he theorised that any such evidence may have been removed earlier in the process during the removal of overburden at the site. Appleton also identified a single artefact, but believed that it was in a secondary context.
Appleton 2005	Immediately to the west of current Project area.	As reported by Appleton (2013), in 2005 ASR was engaged to undertake an investigation of property on Sancrox Road in which Collins had recorded five artefact sites (Bittrow site complex) nearly ten years previously. However none of the sites were relocated and no additional sites were found.
Appleton 2007	Immediately to the north, east and south of current Project area.	As reported by Appleton (2013), in 2007 ASR was engaged to investigate areas to the north, east and south of Sancrox Quarry. No sites were found, and nor were the two sites previously recorded in that area by Collins in 1995.
Appleton 2013	Survey area immediately east of the current Project area.	<u>Archaeological Assessment Fernbank Creek Road, Port Macquarie</u> This assessment was performed for King & Campbell Pty Ltd to facilitate a Proposed rezoning of the Cassegrain Winery, Fernbank Creek Road, Port Macquarie. In the absence of any archaeological or cultural remains in the project site and no cultural information that might pose a constraint to the proposed development ASR recommends that there are no constraints on either cultural or archaeological grounds to the proposed development.
Kuskie 2006	Includes reference to the current Project area	<u>Pacific Highway Upgrade: Oxley Highway to Kempsey – Supplementary Indigenous Heritage Impact Assessment Report – Areas of Cultural Sensitivity</u> This report was commissioned by GHD on behalf of the Roads & Traffic Authority. Three (3) main sites of cultural sensitivity were identified. The first was the Sancrox Quarry ceremonial site, the second is the land

Author of Report	Relation to Project area	Details of sites recorded/recommendations
		<p>surrounding the Hastings River, as it was the site of frequent battles between the Birpai and the Dunghutti. The third was an area near Maria Creek.</p> <p>Other information provided by the Aboriginal representatives include:</p> <ul style="list-style-type: none"> • Native resources included the wild apple (giving rise to the name Kundabung), and Cobra grubs (giving rise to the name Copperabung, later corrupted to Cooperabung); • Birpai people lived in the mountains in summer and the coast in winter; and • Known Aboriginal camps in historic times are on the south side of the Hastings River, especially in the area between the Pacific Highway and Haydons Creek (to the immediate west of the current Project area).
RPS Harper Somers O'Sullivan 2008	Survey area west of the current Project area.	<p><u>Aboriginal & European Cultural Heritage Assessment For Le Clos Verdun At Sancrox NSW</u></p> <p>RPS Harper Somers O'Sullivan (RPS HSO) was commissioned by Hopkins Consultants to provide an Aboriginal and European Cultural Heritage Assessment for the land known as "Le Clos Verdun" at Sancrox, near Port Macquarie, New South Wales.</p> <p>No Aboriginal heritage sites were identified. With regards European cultural heritage HSO shows that the Sancrox area was the location of one of the early government farms of nearby Port Macquarie. The exact location of the farm is not known. No remnant of that farm was located and it is considered highly unlikely given the temporary nature of the farm and the changing landscape of the Hastings River that any record would remain if it was in the vicinity of the study area.</p>
Haglund 1997	Survey area south of the current Project area, extending over 10 km to the south.	<p><u>Archaeological investigations along the Pacific Highway: south of Innes Drive, near Port Macquarie</u></p> <p>The section of Pacific Highway reserve from Herons Creek to approximately one kilometre south of the Oxley Highway interchange was surveyed by Brayshaw and Haglund (1996), resulting in the detection of an isolated artefact and four small scatters of between three and eight artefacts, all made on locally occurring quartz. The sites were situated on the crests and slopes of ridges and spurs. The least disturbed of the scatters (RRID-3) was subsequently investigated and interpreted as a quartz extraction site. Site use appeared to have been low-key only, centring on the extraction of vein quartz from weathered surface rock or its mantle of soil. Given their similarity to RRID-3, it was concluded that two of the other scatters recorded during the original survey (RRID-1 and RRID-2), and the only sites found on slopes of over 10°, were also associated with low-key quartz extraction.</p>

Author of Report	Relation to Project area	Details of sites recorded/recommendations
Collins, J.P. 1995	Includes the current Project area	<p><u>Aboriginal Archaeological survey Area 13 (Thrumster), Port Macquarie</u></p> <p>The most wide-ranging archaeological survey so far completed for the lower Hastings hinterland is that done by Collins (1995) as part of an environmental study for Hastings Council's urban investigation 'Area 13'. The Area 13 Project area encompassed 4,200ha of land between the Hastings River and Lake Innes west of Lindfield Park Road. 17 isolated artefacts, 30 artefact scatters, 3 scarred trees 1 shell midden, two traditional cultural significant sites and 1 Aboriginal historical significant site were recorded. With specific reference to the current study area, Collins reports that a Corroboree/ceremonial ground lies west of the Pacific Highway and north of Sancrox Road and is thought to have occupied the hill crest now being worked as a hard rock quarry. Aboriginal informants were told of the site many years ago by elderly European residents who described hearing the music and chanting and seeing the many large campfires. The closest recorded sites were the Bittrow site complex located approximately 100m to the south and west of the current Project area comprising a large and complex open campsite, three isolated artefacts and two small campsites. It is considered highly likely that further materials will occur across hillslopes and associated with Haydons Creek. Subsequent surveys by Appleton in 2005 and 2007 have not relocated these sites.</p> <p>The survey identified that site locations were associated with certain landforms. Sites identified were all located within 350m of water, and tended to be on decreased elevation with low gradient slopes facing NNW and NE. Management recommendations included:</p> <ul style="list-style-type: none"> • any floodplain excavation works which will be greater than 80cm in depth to be monitored by a representative of the BLALC in case archaeological materials are unearthed. • Any urban rezoning proposal for any non-floodplain area which has not already been substantially impacted, and which was not covered during the present survey or during any past archaeological survey in Area 13 should be subject of a separate archaeological survey of all slopes of 10° and less which are within 350m of any existing or former permanent or semipermanent water source (including drained swamps). • Any rezoning proposal for any land which does not encompass slopes of 10° and less within 350m of a present or former permanent or semi-permanent water source is unlikely to threaten archaeological materials and an archaeological survey is not considered warranted in such areas.

Author of Report	Relation to Project area	Details of sites recorded/recommendations
Collins, J 2005	Located 1.5km south east of the Project area.	<p><u>Area 13 Structure Plan: Aboriginal Heritage Assessment</u></p> <p>A further survey of a 780ha portion of the 1995 Area 13 Study Area resulted in the recording of four isolated stone artefacts and three small artefact scatters on footslopes and valley flats adjacent to swamps and streams. Two extensive campsites were also recorded, both on the terminal ends of low spurs extending into swamps. Re-inspection of previously registered sites revealed several of those south of the upgrading corridor, including the Site #30-3-169 scarred tree, to have been destroyed by land clearing since 1995.</p>
GHD 2010	Covers the north western portion of the current Project area	<p><u>Oxley Highway to Kempsey Pacific Highway Upgrade – Aboriginal Heritage Working Paper</u></p> <p>The Aboriginal heritage assessment for the Oxley Highway to Kempsey Pacific Highway Upgrade has been undertaken in two phases, an initial predictive study to assist with selection of feasible route options (Kuskie 2005), followed by a comprehensive field survey and sub-surface investigations undertaken in 2007 by South East Archaeology. Five areas of cultural sensitivity, ten archaeological sites and six PADs were identified as potentially impacted. Archaeological test excavation was undertaken at two locations. No Aboriginal sites were recorded within the current Project area although an Ochre Sites were mapped approximately 800 m to the south east of the current Project area. This ochre vein was exposed by road construction in about 1968.</p>
Kelleher Nightingale Consulting 2012	Immediately east of the current Project area	<p><u>Artefact Salvage Methodology and Cultural Heritage Assessment Oxley Highway to Kempsey Upgrade.</u></p> <p>This report provides a detailed methodology for archaeological excavation of the identified sites and PADs along the Oxley Highway to Kempsey upgrade (GHD 2010) to obtain a representative sample of the archaeology that will be impact by the project. A series of management policies for the management and conservation of Aboriginal heritage were provided. With relevance to the Project area, the seam of ochre site was confirmed along the highway, approximately 800 m to the south east of the current Project area. This ochre vein was exposed by road construction in about 1968.</p>

4.4.3

Implications for the Project area – Predictive Model

It is important to note that the level of archaeological potential relates to the likelihood of discovering an Aboriginal object or site, within a location. Further description should then be made as to the potential condition and integrity of the soil matrix and potential site itself. Only once all these factors have been considered, can scientific value start to be assessed for an area with potential. Therefore, whilst scientific value and potential are linked, it must be noted that these values and potentials are not the same and can differ substantially for any single site or area with potential.

Areas with archaeological potential were assessed according to the definitions in *Table 4.4*. Proximity to a permanent water supply and landform is the primary factor appearing to determine the location of Aboriginal campsites within the region and scar trees can occur anywhere that trees of a suitable age remain.

Using Collins (1995) predictive model for Area 13:

1. At least 40 further artefact locations are predicted to occur within Area 13 and while on a gross scale these will be spread across the entire area, they will vary widely in size, content and complexity level. Site locations are likely to occur with a significantly higher frequency on lands based on the Touchwood Formation and the Fault Zone Complex rocks in the south east section of the area.
2. Open campsites (scatters of stone artefacts) and isolated stone artefacts will be found on slopes of 10° and less, with the majority of site locations and the greatest artefact frequencies occurring on flat or gently inclined land (up to 5°). The larger complex sites in particular will be associated with the lower gradients.
3. Open campsites and isolated stone artefacts will be found anywhere within 350 m of a water source with greatest site and artefact frequencies occurring within 350 m of swampland (existing or drained). Most of the larger and more complex sites will be found on the very edge of water sources.
4. The majority of open campsites and isolated stone artefacts will be found sealed within alluvium on natural levees along the bank of the Hastings River, and on the surface of footslopes and spur crests on bedrock lands. Sites will also be found on ridgeline saddles. Few sites will occur on slopes (particularly upper slopes), and few will be detectable on flats during any surface survey.
5. Open campsites and isolated stone artefacts will occur at all elevations but most will be found at elevations below 10 m AHD. Site locations will occur with the second greatest frequency at elevations above 20 m AHD.
6. Although open campsites and isolated stone artefacts will occur on land within the full circle of aspects, the vast majority of artefacts and site locations will face between north-north west and north east (316°-45°).
7. Scarred trees may occur in any area where ecologically mature trees have survived.

8. As a consequence of the acidity of soils within Area 13 bone and shell attrition rates will be high and it is unlikely that any such materials will have survived for more than a few hundred years. Small recent shell middens may, however, occur on low gradient land in similar contexts to the artefact sites. The presence of whelks at Site Wirrer 1 indicates that shellfish were transported from the estuary into the hinterland (in this case at least 2 km from Fernbank Creek).

Due to the scope for variation that comes with human choice, it cannot be assumed that all areas of predicted sensitivity will contain a high density of archaeological sites, or for that matter, any sites at all. Archaeological models predict 'typical' site locations and apply only to those sites that are representative in terms of their environmental setting. Therefore in this landscape known to have high usage then consultation is recommended.

Table 4.4 *Definitions of Archaeological Potential*

Rank	Definition	Example
Very Low potential	Artefacts are very unlikely to occur in situ.	Eroded landforms, 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. areas not associated with or in proximity to water sources.
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 swamp or near high order creeks.

Table 4.5 below provides predictive statements from the previous studies, background research and the AHIMS data. All areas identified as having moderate or high levels of archaeological potential were targeted during the site visit (refer to Section 6). Specific management and mitigation measures have been recommended within Section 9.

Landform elements of highest potential archaeological sensitivity are level to gently inclined crests of ridges and spurs, particularly crests above 20 m AHD within 350 m of a water course. This does not occur within the Project area.

Elements with lowest potential archaeological sensitivity are hillslopes with gradients greater than 10° and poorly drained alluvial valley flats (including swamps). Irrespective of its topographic context, land which has been intensively disturbed (e.g. roads, services easements and quarries) will also have low archaeological sensitivity.

Table 4.5 Landforms in which Site Types Usually Occur

Site Types	Landform in which this Site Type is Usually Found	Assessment	Potential
Artefact Scatters	<p>Stone artefact concentrations are collections of stone, frequently brought from other areas, which demonstrate evidence for Aboriginal working, use and/or discard of the stone at a single location. These sites may be found in any landforms particularly in association with hillslopes and water courses.</p> <p>This site type may be within several hundred metres of water, either on the low hill slopes / toe slopes, on terraces of the Richmond River or on low spurs leading down to water, with the highest concentrations occurring near the confluences.</p> <p>These sites are likely to have been impacted by European agricultural practices as landforms favoured for prehistoric occupation were also often favoured for the European occupation or agriculture.</p>	<p>Locations with highest potential for artefact scatters would be along the ridges and spurs in the central portion of the Project area and mostly associated with transient movement between the nearby resource rich areas. It is noted that the crest and ridges have all been subject to disturbance including intensive quarrying activities. The highest portion of the Project area (reported as a potential ceremonial site) has been completely removed by the current quarry activities and there is only moderate potential that evidence of Aboriginal occupation remains within the broader Project area.</p> <p>The low lying floodplains have low potential for artefact scatters as they are not favourable for habitation and the effects of flooding in the low lying areas would also have disturbed the integrity and condition of any sites that may have been here.</p>	Moderate
Isolated finds	<p>Sites consisting of only one identified stone artefact, isolated from any other artefacts or archaeological evidence. They are generally indicative of sporadic past Aboriginal use of a location.</p> <p>A distinction should be drawn between isolated finds which are a component of the background distribution and objects such as axes, hammer stones, grinding dishes, etc which would have been used repeatedly.</p>	<p>Isolated finds may occur anywhere, especially in disturbed locations near water sources or on travel routes. They are known to occur in comparable landforms and there is an unknown possibility for detection.</p>	High

Site Types	Landform in which this Site Type is Usually Found	Assessment	Potential
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. Scars may also originate as 'foot-marks', small pockets cut into the bark of a tree enabling the tree to be climbed.	Small areas of remnant vegetation are present in the Project area making it possible that trees of sufficient age to bear scars of Aboriginal origin may be located within the Project area. Carved trees may also occur within the Project area, particularly given that a ceremonial site once existed at the site.	Moderate
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.	Grinding grooves may be present, although picking up the small exposed bedrock that may be used for grinding grooves is difficult at the desktop level.	Low-moderate
Stone arrangements, and ceremonial grounds	<p>These site types are often interrelated. Stone arrangements vary 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.</p> <p>Carved trees may have intricate geometric or linear patterns or representations of animals carved into their trunks. Ceremonial grounds and graves were often marked by such trees.</p> <p>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.</p> <p>Bora grounds were generally situated near a camping ground large enough to accommodate all the tribes invited, and close to a river, creek or lagoon to provide sufficient water and food for all those attending the ceremonies (OEH 2013).</p>	<p>It has been reported that a ceremonial ground once existed within the Project area and is thought to have occupied the hill crest now being worked by the quarry. Aboriginal informants were told of the site many years ago by elderly European residents (Collins 1995 and Appleton 1996).</p> <p>No evidence to support the existence of a ceremonial site has been found although it is noted that any such evidence would have been removed during the removal of overburden at the site.</p>	Low

Site Types	Landform in which this Site Type is Usually Found	Assessment	Potential
Middens	Middens predominantly 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. Middens frequently also include faunal remains, stone artefacts, hearths and charcoal.	Shell middens are known to occur within alluvial plains around Hastings River although they are generally found closer to the coast.	Low
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.	Quarries are only located where appropriate stone or ochre resources are present. One ochre seam is located 800 m to the south east of the Project area although modelling for these resources is difficult at the desktop level.	Low
Burial sites	Burials may be of isolated individuals, or they may form complex burial grounds. Often associated with other site types such as middens, or mounds.	These sites are not expected to be found in the Project area although they cannot be discounted.	Low
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 peckings are also to be found on sandstone surfaces both in the open and in shelters. These are referred to as rock engraving sites.	It is unlikely that the Project area contains suitable rock platforms or shelters.	Very Low
Shelter sites	Sandstone shelters and overhangs were used by Aboriginal people to provide habitation areas sheltered from the rain and sun. The deposits in such sites are commonly very important because they often contain clearly stratified material in a good state of preservation. The geomorphology of the New England Region to the west of the Project area lends itself to the occurrence of rock shelters along deeply incised gullies or near creek lines where sandstone is exposed.	The floodplain landform and low rises are very unlikely to contain any rock shelters, overhangs or gullies. The hill crest has already been heavily disturbed by quarrying activities.	Very Low

5.1

BRIEF HISTORY OF PORT MACQUARIE AREA

European settlement of Port Macquarie began in 1821. The penal settlements in Sydney and Newcastle were close to capacity and a need was identified, by the authorities, for a more isolated settlement away from the farmland of the free settlers who had started to populate the Hunter region. As reported by Collins (2004), the settlement centred on land bounded by the Hastings River and Kooloonbung Creek. This area lies some 10 km east of the Project area and is now covered by the Port Macquarie CBD.

The first convoy of prisoners and soldiers arrived in 1821 and work started soon after with the clearing of trees and erection of temporary bark huts for the convicts and separate huts of similar construction for the soldiers. The convicts' huts were enclosed by a palisade and ditch to protect the soldiers. Construction of permanent quarters continued steadily from this point.

Convicts constructed Government House and other public buildings, as well as establishing farms to make the settlement self-sufficient. In 1821 it was recorded that 200 convicts were employed clearing land for wheat at St Rocks (Griffin & Howell, 1996:11). St Rocks was the location of one of two original government farms in the area, by 1826 the spelling of the name was recorded as Sancrox (Rogers, 1982: 45). The first crops of wheat both at Sancrox and Settlement Farm were affected by blight and rust, however 400 bushels were nonetheless gained from the Sancrox farm (Rogers, 1986: 79). Forty acres of corn was grown here in 1826 (Rogers, 1982: 59), however in 1830 the Surveyor General recommended that the government farm at St Rocks (Sancrox), among others, be opened for public selection (Rogers, 1982: 83).

The exact location of the original government farm is not known and there is no written account of structures on that farm. They would have been most likely simple timber dwellings of a temporary nature constructed close to the crops on the fertile flood plain. With no record of them, it is possible they disappeared during one of the numerous inundations (Appleton, 2013).

Port Macquarie operated exclusively as a penal settlement until 1830 when free settlers were encouraged to farm and settle the area. By 1831 Port Macquarie was well established and contained many buildings associated with a convict town of the period: prisoner barracks, a hospital and church, commissariats store, granary, civil officers' quarters, a clergyman's house, lumber yards, government house, police office, military barracks, and the rows of slab huts, located near to shore lines.

As reported by HSO (2008) a number of people bought land and established farms in the areas around the Hastings River. One such settler, Major Archibald Clunes Innes, established a farm near present day Lake Innes, growing crops for the convicts in the settlement (Hastings Writers 2003:28). The ruins of Innes House are now gazetted heritage items.

Over the following decades the primary industry of Port Macquarie was agriculture specialising in the pastoral wool trade, and production of crops such as maize and sugar cane. In 1887 the Town Council was formed and the Town Hall was opened in 1892. The redirection of the Pacific Highway in the mid-twentieth century resulted in Port Macquarie becoming more accessible and from business, tourism and residents.

In 1889 the timber mill that had been at nearby Wauchope was relocated to Sancrox with logs brought to the mill by bullock dray and paddle wheel boats. One of these paddle wheel boats was built at Sancrox as were a number of punts (Wauchope District Historical Society, 1990: 24). The Sancrox mill was the source of the wooden paving blocks found in early Sydney streets (Wauchope District Historical Society, 1990: 24). In 1906 the mill burnt down, the timber workers and their houses were relocated to another area and subsequently the village fell into decline (Wauchope District Historical Society, 1990: 32). The boat building yards would have been located on the banks of the Hastings, yet with no modern reference point, and subsequent and frequent inundation events, no record remains (Appleton, 2013).

Examination of early parish maps for the Sancrox area do not list any built items within the current Project area and there is no indication that either the original Government farm or the late nineteenth century mill or boat building yards were in the vicinity the current Project area, it is most likely they were further west towards Rawdon Island Road. However other items, such as tangible remnants of early farming, may still be present.

5.2

POTENTIAL FOR HISTORIC HERITAGE WITHIN THE PROJECT AREA

While much of the Port Macquarie hinterland was appropriated by European settlers during the first half of the 19th Century, based on the literature reviewed in the preparation of this assessment, the Project area itself experienced very little historical development.

The closest historic site reported by GHD (2010) (Oxley Highway to Kempsey Pacific Highway Upgrade Environmental Assessment) were eight hand cut sandstone kerb stones, although their original location and context were not known. This site was highlighted for its local significance only.

Two historic heritage items are located within a 5 km radius of the Project area on the Hastings Local Environmental Plan 2011 and Section 2 of the NSW State Inventory, both located on Rawdon Island:

- Former school building and teacher's dwelling-house, 479 Rawdon Island Road; and
- Former Post Office building, 489 Rawdon Island Road.

Based on a review of parish maps (*Annex C*) and the historical context of the area, it is considered unlikely that relics or additional sites of historical significance will be located within the Project area. Surviving sites and features of non-Indigenous cultural heritage value would be limited to portable domestic and rural artefacts, or features associated with grazing and timber extraction activities.

This section provides an overview of the surveys of the Project area undertaken to determine the presence of Aboriginal and historic heritage sites.

6.1 FIELD SURVEY METHODOLOGY

The Project area was surveyed by the ERM Heritage Consultant, Katherine Deverson, and Jason Holten (BLALC and Birpai Traditional Owners Indigenous Corporation) on Wednesday 15 November and Thursday 16 November 2017.

The conditions encountered in the Project area during the fieldwork resulted in limited ground surface visibility due to leaf litter, which defined the opportunistic nature of the field survey. Observations were recorded using digital photography, GPS recording, as well as field notes. In accordance with OEH guidelines, photographic recording was undertaken of landforms, Aboriginal cultural material, areas of archaeological or cultural sensitivity, levels of disturbance, as well as other areas/items of interest.

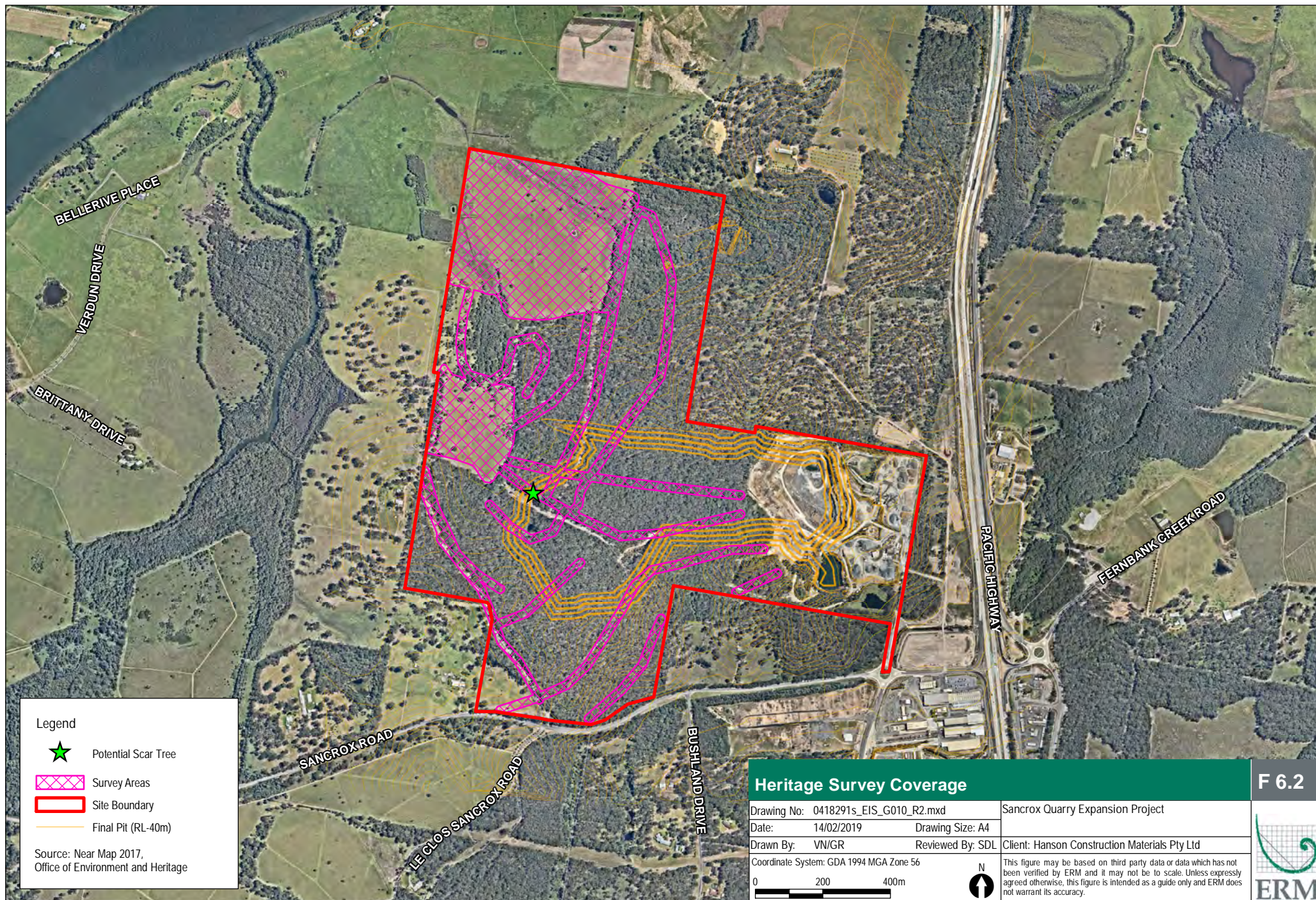
The survey focused on the identification of heritage values relating to archaeological sites, although discussion also included Aboriginal intangible values and the importance of Aboriginal sites to the local community, including the reported ceremonial site. Field survey methods were adopted to pursue the discovery of new archaeological sites, ensure their accurate recording and provide sufficient background information to provide an assessment of cultural (and social) significance to the extent that surface survey allowed.

6.2 SURVEY COVERAGE





In accordance with NSW NPWS (1997:18), the description of survey coverage includes the landform, survey unit area and a quantification of the level of exposure and visibility. The survey units were mapped using a combination of hand-held GPS and visible landmarks. The heritage survey coverage is shown in *Figure 6.1*.

Visibility refers to the amount of ground upon which artefacts could be sighted and is expressed as a percentage of the survey unit (NSW NPWS 1997:18). The presence of vegetation, leaf litter and other variables can obscure visibility. As a descriptive tool, *Table 6.1* has been devised which indicates the level of ground surface visibility. It is a subjective method of assessment, but provides a useful tool when attempting to describe the level of ground surface visible during field surveys or inspection.

The ground surface visibility was poor over most of the survey area. Where the ground surface was visible, it was in the form of vehicle tracks and fence lines or associated with the existing use of the site as an active quarry.



Legend

-  Potential Scar Tree
-  Survey Areas
-  Site Boundary
-  Final Pit (RL-40m)

Source: Near Map 2017,
Office of Environment and Heritage

Heritage Survey Coverage

Drawing No: 0418291s_EIS_G010_R2.mxd

Date: 14/02/2019

Drawn By: VN/GR

Coordinate System: GDA 1994 MGA Zone 56

0 200 400m

Drawing Size: A4

Reviewed By: SDL

Sancrox Quarry Expansion Project

Client: Hanson Construction Materials Pty Ltd

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.



F 6.2

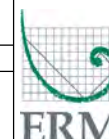


Table 6.1 **Ground Surface Visibility Rating**

	Description	GSV Rating %
Very Poor	Heavy vegetation, scrub foliage or debris cover, dense tree or scrub cover. Soil surface of the ground very difficult to see.	0-9%
Poor	Moderate level of vegetation, scrub, and / or tree cover. Some small patches of soil surface visible in the form of animal tracks, erosion, scalds, blow outs etc., in isolated patches. Soil surface visible in random patches.	10-29%
Fair	Moderate levels of vegetation, scrub and / or tree cover. Moderate sized patches of soil surface visible, possibly associated with animal, stock tracks, unsealed walking tracks, erosion, blow outs, etc. Soil surface visible as moderate to small patches across a larger section of the Project area.	30-49%
Good	Moderate to low level of vegetation, tree or scrub cover. Greater amount of areas of soil surface visible in the form of erosion, scalds, blow outs, recent ploughing, grading or clearing.	50-59%
Very Good	Low levels of vegetation / scrub cover. Higher incidence of soil surface visible due to recent or past land-use practices such as ploughing, grading, mining, etc.	60-79%
Excellent	Very low to non-existent levels of vegetation/scrub cover. High incidence of soil surface visible due to past or recent land use practices, such as ploughing, grading, mining, etc.	80-100%

6.3 **ABORIGINAL HERITAGE RESULTS**

The archaeological survey did not result in the identification or recording of Aboriginal archaeological or cultural sites within the proposed extraction area, except for one potential scar tree which was noted to the north of a small farm dam at the western extent of the proposed extraction area (and ancillary infrastructure).

The tree is located approximately three metres from the edge of a cleared track. The scar is symmetrical, extending from the ground to 3.5 m in height. No Potential Archaeological Deposit (PAD) was recorded in association with the tree. No tool marks were noted, although the tree is of sufficient age to bear an Aboriginal scar (refer to *Figure 6.2* and *Photographs 9* and *10*).



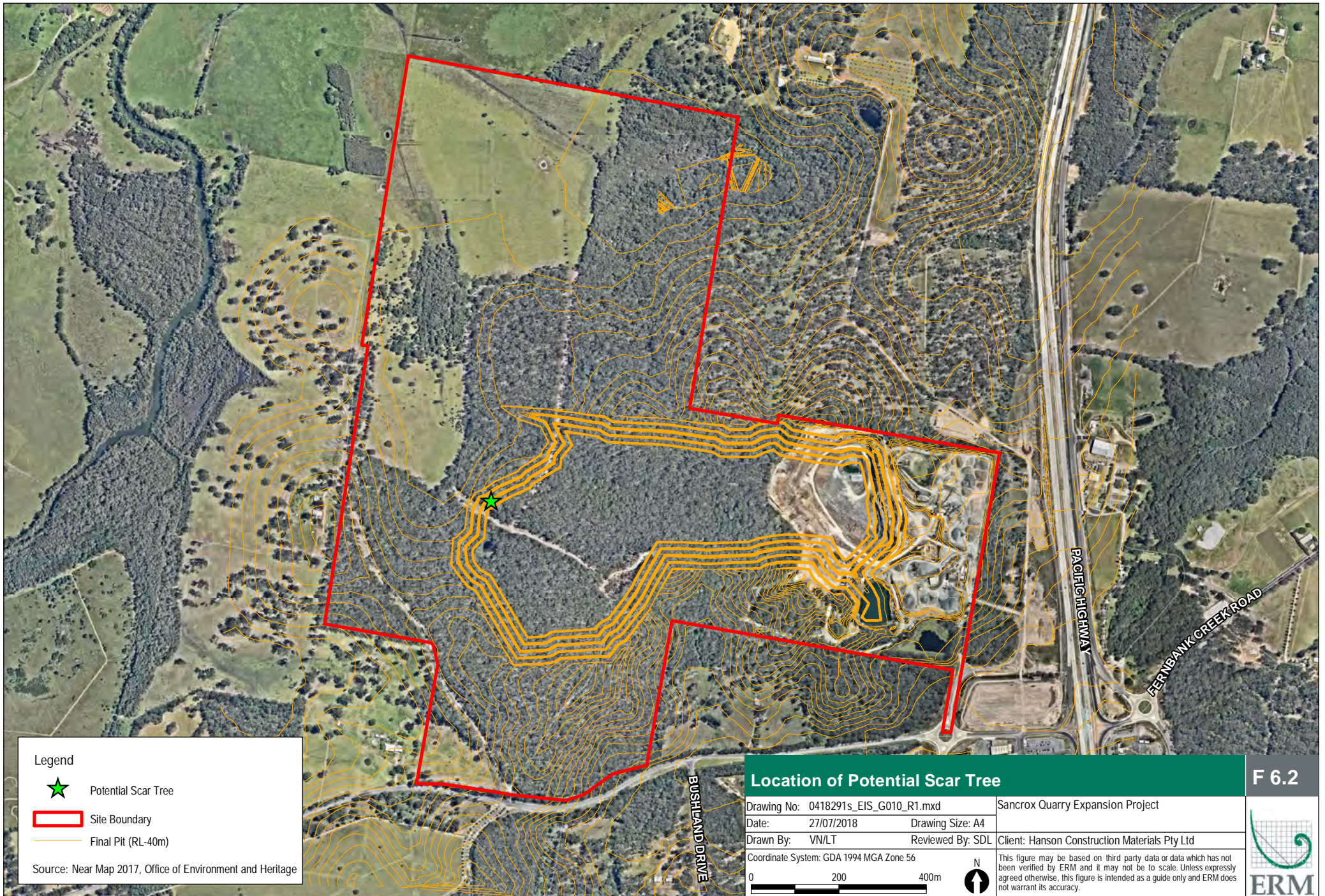
Photograph 9

Potential Aboriginal scarred tree at the western extent of the proposed extraction area. The origin of the scar is difficult to determine based on the damage from recent fires (ERM 2017)



Photograph 10

Potential Aboriginal scarred tree noted at the western extent of the proposed extraction area. The tree is of sufficient age to bear an Aboriginal scar (ERM 2017)



Desktop review and field survey has not identified any historical items within the Project area. As identified within *Section 5.2*, it is considered unlikely that relics or additional sites of historical significance will be located within the Project area. Surviving sites and features of non-Indigenous cultural heritage value would be limited to portable domestic and rural artefacts, or features associated with grazing and timber extraction activities.

This was confirmed during the field survey with abandoned farm machinery, stock yards and isolated clearings noted throughout. Brick piers and timber floor bracing was also recorded within the Project area and is likely to represent an abandoned farm house. These items are not of any local heritage significance and cannot be attributed to any notable local figures. They do not show any evidence of or provide additional information on the early settlement of the Sancrox area.



Photograph 11 - Evidence of previous land use - brick piers and timber floor bracing (ERM 2017)

(these items are not of any local heritage significance and cannot be attributed to any notable local figures. They do not show any evidence of or provide additional information on the early settlement of the Sancrox area).

The heritage values significance assessment for the Project area has been assessed in accordance with the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011) and encompasses the four values outlined in the *Burra Charter* (social, historical, scientific and aesthetic) (Australian ICOMOS 2013).

7.1 ASSESSMENT OF ABORIGINAL ARCHAEOLOGICAL SIGNIFICANCE

7.1.1 Preamble

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.

Assessing the cultural significance of a place means identifying the reasons why a place is culturally important.

The NPWS Aboriginal Cultural Heritage Standards and Guidelines Kit (1997) states:

While Aboriginal sites and places may have educational, tourism, and other values to groups in society, their two principal values are their cultural/social significance to Aboriginal people and their scientific significance to archaeologists. It is thus possible to identify two main streams in the overall significance assessment process: the assessment of cultural/social significance to Aboriginal people and the assessment of scientific significance to archaeologists... (1997: 92)

The OEH *Guideline for investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (2011) states that analysing cultural heritage significance involves two main steps:

- identifying the range of values present, including social, historic, scientific and aesthetic values; and
- assessing why they are important.

In addition to identifying the scientific and cultural (social) values of Aboriginal places, the OEH Guideline (2011:7) draws on the *Burra Charter* (2013) and adds that historic and aesthetic values should also be considered. The assessment process is shown diagrammatically in *Figure 7.1*.

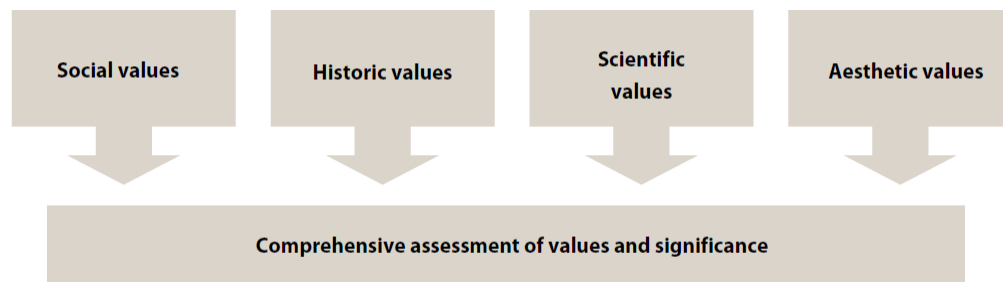


Figure 7.1 *Diagrammatic presentation of the significance assessment process (OEH 2011)*

The assessment in *Section 7.1.3* focuses upon the scientific significance of the sites recorded during the survey. The cultural significance assessment is provided in *Section 7.1.4* of this report. Aboriginal groups who registered in the Project were afforded the opportunity to comment on the draft report for a cultural and social significance assessment of the sites recorded.

7.1.2 *Background: Scientific Significance Assessment*

This assessment has sought to identify Aboriginal heritage objects and sites within the Project area and obtain sufficient information to allow the scientific values of those objects and sites to be determined. NPWS (1997:93) have stated that ‘*while various criteria for archaeological significance assessment have been advanced over the years, most of them fall under the heading of archaeological research potential*’. As such, seven key criteria may be used to examine the scientific value/significance of a site. These are:

- **Rarity:** whether any or all aspects of a site (type, location, integrity, content and archaeological potential) can be considered common or rare within a local, regional or national context;
- **Representativeness:** the comparative rarity of the site when considered and contrasted against other similar sites conserved at the local and/or regional level;
- **Archaeological landscapes:** the study of the cultural sites relating to Aboriginal peoples within the context of their interactions in the wider social and natural environment they inhabited. Landscapes can be large or small depending upon specific contexts (i.e. local or regional conditions); they may also may be influenced by Aboriginal social and demographic factors (which may no longer be apparent);
- **Connectedness:** whether the site can be connected to other sites at the local or regional level through aspects such as type, chronology, content (i.e. materials present, manufacturing processes), spatial patterning or ethno-historical information;

- Integrity & condition: integrity refers to the level of modification a site has been subject to (the cultural and natural formation process) and whether the site could yield intact archaeological deposits, which could be spatially meaningful. Condition takes into account the state of the material, which is especially relevant for organic materials;
- Complexity: the demonstrated or potential ability of a site to yield a complex assemblage (stone, bone and/or shell) and/or features (hearths, fire pits, activity areas); and
- Archaeological potential: the potential to yield information (from sub-surface materials which retain integrity, stratigraphical or not) that will contribute to an understanding of contemporary archaeological interest, or which could be saved for future research potential.

7.1.3 *Scientific Significance Assessment*

The potential scar was not confirmed as a cultural scar and has only low scientific significance.

There is also no archaeological evidence to support the existence of a ceremonial site and it is noted that any such evidence would have been removed during the removal of overburden at the site. This site has only low scientific significance.

7.1.4 *Aboriginal Cultural Significance Assessment*

Cultural/social significance concerns the values of a place, feature or site to particular community groups, in this case the local Aboriginal communities. The primary guide to management of heritage places is the Australia ICOMOS Burra Charter 2013. 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.

Aspects of cultural or social significance are relevant to sites, objects and landscapes that are important or have become important to local Aboriginal communities. This importance involves both traditional links with specific areas as well as an overall concern by Aboriginal people for sites generally and their continued protection. Aboriginal communities have provided input into the archaeological survey methodology and the archaeological and cultural significance assessment of the Project area. They will also be provided the opportunity to comment on the cultural and social significance assessment of the Project area.

Landscapes or locations within a landscape may hold special significance to Aboriginal communities as places where traditional lifestyles have occurred and where sacred or symbolic significance places exist. The evidence of Aboriginal heritage sites (including but not limited to artefact scatters, middens, scarred trees, burials) are direct evidence of past Aboriginal people, and reflect traditional ways of life including subsistence practices, ceremonial practices and aspects of cultural life. Therefore, it can be inferred that any identified site holds significance to Aboriginal people however; the level of significance may vary according to site type.

As such, the Aboriginal community can best determine Aboriginal cultural significance. Consultation with Aboriginal people (who can provide information about the local and regional significance of Aboriginal cultural heritage) is therefore required for any archaeological, social or cultural values assessment of Aboriginal heritage (especially where there is the potential for impact or harm to an Aboriginal heritage site or item). The consultation guidelines used for this assessment set out a process for identifying and registering Aboriginal parties who wish to be consulted on the proposed development. These processes have been followed and consultation with the registered Aboriginal stakeholder groups has been maintained throughout the assessment including during the field assessment.

The potential ceremonial site, although now completely destroyed, is considered to have high cultural significance and recognition of its location within the Sancrox area should be recognised.

7.2 *HISTORICAL HERITAGE*

No historical heritage items were found during the field survey, and there are no known non-Aboriginal heritage items located within the Project area.

The proposed works involve the following actions that have the potential to impact on Aboriginal heritage sites and values:

- increased size of the extraction area;
- grading of roads and upgrading of existing access roads;
- vehicle movement across eroded tracks;
- development of new access roads;
- clearance of regrowth vegetation; and
- construction of ancillary facilities.

There no historical heritage items known to occur within the Project area.

No archaeological evidence of the ceremonial site remains within the Project area.

The potential scar tree is located within the western extent of the proposed extraction area and is likely to be impacted as a direct result of the proposed extraction footprint.

9.1***HISTORICAL HERITAGE***

No historical heritage items were found during the field survey, and there are no known non-Aboriginal heritage items located within the impact area. In the unlikely event that historic heritage items are found during works, the following Unexpected Finds Protocol is provided below.

9.1.1***Unexpected Finds Protocol***

Historic heritage items could include relics, defined by the Heritage Act as, “*any deposit, artefact, object or material evidence that relates to the settlement of the area that comprises NSW, not being Aboriginal settlement; and is of State or local heritage significance*” or archaeological features (works). It is not considered unlikely that archaeological deposits will be found during trenching works; however the following steps are provided below in the event that deposits are found.

- where a potential historic heritage item is found during works, all works within the vicinity of the item, or with the potential to impact the item will cease and a temporary exclusion zone established;
- an appropriately qualified heritage consultant will examine the item to assess its significance and further archaeological potential; and
- where a relic is found, the NSW Heritage Council will be notified and approval will likely be required prior to the continuation of works. Other archaeological deposits will be recorded and assessed for significance and potential salvage by an appropriately qualified heritage consultant.

9.2***ABORIGINAL HERITAGE***

The potential scar tree is located within the western extent of the proposed extraction area and is likely to be impacted as a direct result of the proposed extraction footprint. Avoidance is the preferred management measure, however if this cannot be achieved, it is recommended that BLALC is afforded the opportunity to retain the scar for educational and interpretive purposes if requested.

The ceremonial site, although now completely destroyed, is considered to have high cultural significance and recognition of its location within the Sancrox area could be considered for display in the quarry site office. The development of any cultural information will be undertaken in consultation with the BLALC.

An unexpected (chance) finds procedure will be implemented for any locations subject to soil disturbance activities, including vegetation clearing. In the event that site workers identify any potential Aboriginal heritage sites, the unexpected finds procedure shall be implemented in compliance with s89 of NP&W Act. The procedure is as follows:

1. STOP WORK IMMEDIATELY. Any person that observes or uncovers potential Aboriginal heritage objects during the works must notify machinery operators immediately. All activities and/or works in the immediate area must cease (DO NOT collect samples to show someone);
2. NOTIFY. Notify the site supervisor immediately. The site supervisor will contact, notify and consult with Registered Aboriginal Parties (RAPs) and an appropriately qualified heritage professional (archaeologist);
3. AVOID DISTURBANCE of the area at and adjacent to the cultural finds;
4. PROTECT THE SITE. Any sand/soils removed must be identified and set aside for assessment. The disturbed area needs to be cordoned off as an exclusion zone so that no further disturbance occurs (include an adequate buffer area);
5. ASSESS THE FIND. The RAPs and archaeologist will investigate the nature; extent and location of the find;
6. RECORD/SALVAGE THE FIND. The RAPs and archaeologist will, in consultation with the site supervisor, arrange recording of the objects and if required salvage; and
7. RESUME WORK. Subject to the archaeologist's assessment, work may be able to recommence under the terms once the site is assessed and appropriately salvaged. Alternatively, where possible, work methods or location may be altered to minimise further harm to the find, or objects associated with the find.

In the event of the discovery of human skeletal material (or suspected human skeletal material) during Project activities, the following steps will be followed:

1. STOP WORK IMMEDIATELY. Any person that observes or uncovers human skeletal material (or suspected human skeletal material) during the works must notify machinery operators immediately. All activities and/or works in the immediate area must cease (DO NOT collect samples to show someone);
2. NOTIFY. Notify the site supervisor immediately;
3. PROTECT THE SITE. Monitor the area and keep all personnel out of the area until further notice. Inform site personnel of the restricted access to that area. The disturbed area needs to be cordoned off as an exclusion zone so that no further disturbance occurs (include an adequate buffer area);
4. ASSESS THE FIND. If human remains are suspected the site supervisor is to notify the NSW Police and provide available details of the remains and their location. The site supervisor will also notify the RAPs, an archaeologist/anthropologist and OEH;
5. POLICE INVESTIGATION. NSW Police and the Coroner will determine the nature of the suspected remains and advise on further actions.
6. RECORDING AND MANAGEMENT OF ABORIGINAL ANCESTRAL REMAINS. The RAPs must be present where it is reasonably suspected that Aboriginal burials or human remains have been encountered. Recording of Aboriginal ancestral remains must be undertaken by, or be conducted under the direct supervision of, a specialist physical anthropologist or other suitably qualified person; and
7. RESUME WORK. Subject to the archaeologist's assessment, work may be able to recommence under the terms once the site is assessed and appropriately managed. Alternatively, where possible, work methods or location may be altered to minimise further harm to the find, or objects associated with the find. Reburial of the remains to a specific location may be requested by the RAPs.

9.2.2 *Cultural Awareness Training*

In order to comply with best practice principles, all employees and subcontractors will undergo environmental awareness training as part of the site induction to ensure they understand their obligations and responsibilities. This training will include basic Aboriginal heritage awareness across the following topics:

- legal responsibilities and statutory obligations for heritage under the NPW Act and the Heritage Act;

- outline the location and type of archaeological sites within the Project Area and give instructions not to disturb these sites;
- provide the detailed locations of all known Aboriginal objects within the Project Area to all relevant personnel;
- outline the procedures for the discovery of previously unrecorded Aboriginal objects; and
- provide training on how to identify stone artefacts and other Aboriginal heritage sites.

It is important to note that only information endorsed for sharing by the BLALC would be included within the induction package, alternatively a representative of the BLALC could be employed to undertake an induction session for all major contractors prior to works commencing.

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Annex A

Aboriginal Stakeholder Consultation

RAP	Contact Name	Address	Phone	Email
Birpai Traditional Owners	Jason Holten		0498 238 692	jasonholten88@gmail.com.au
Birpai Local Aboriginal Land Council	David Carroll		0498 238 692	dcarroll.birpai@gmail.com
Yanggaay	Danial Carriage	369 Old Coast Road, Korora, NSW, 2450	0402883073	yanggaay@gmail.com
Norm Archibald	Norm Archibald	17 Flobern Ave, Wauchope NSW 2446		jtmanagement@live.com.au

Date	RAP/Contact Name	Contact Made By:	Form of Contact:	Evidence of Consultation	Details	Response/Follow up?	Any Additional Actions Required?
4 September 2017	-	-	Newspaper Advertisement	Yes	Port News		
30 August 2017	Birpai Local Aboriginal Land Council	ERM	Stage 1 Notification letter sent via email.	Yes	Letters have been sent to the relevant government agencies to determine the relevant stakeholder groups for contact. Response requested by Friday 15 September 2017.	05/9/2017 - response received via email to register an interest and confirming the proposed work is wholly located within the boundary of the Birpai Local Aboriginal Land Council. Also suggested that Birpai Traditional Owners group would be interested.	
30 August 2017	the Registrar	ERM	Stage 1 Notification letter sent via email and post.	Yes	Letters have been sent to the relevant government agencies to determine the relevant stakeholder groups for contact. Response requested by Friday 15 September 2017.	6/09/2017 – email response confirming that the project area described does not have Registered Aboriginal Owners pursuant to Division 3 of the Aboriginal Land Rights Act 1983 (ALRA).	
30 August 2017	OEH Port Macquarie	ERM	Stage 1 Notification letter sent via email and post.	Yes	Letters have been sent to the relevant government agencies to determine the relevant stakeholder groups for contact. Response requested by Friday 15 September 2017.	17/09/2017 – letter providing a list of potential interested parties.	

Date	RAP/Contact Name	Contact Made By:	Form of Contact:	Evidence of Consultation	Details	Response/Follow up?	Any Additional Actions Required?
30 August 2017	NTSCorp	ERM	Stage 1 Notification letter sent via email and post.	Yes	Letters have been sent to the relevant government agencies to determine the relevant stakeholder groups for contact. Response requested by Friday 15 September 2017.		
30 August 2017	NNTT	ERM	Stage 1 Notification letter sent via email and post.	Yes	Letters have been sent to the relevant government agencies to determine the relevant stakeholder groups for contact. Response requested by Friday 15 September 2017.	20/06/17 – response email from NNTT, no Native Title Determination Applications, Determinations of Native Title, or Indigenous Land Use Agreements over the identified area.	
30 August 2017	Port Mac Hastings Council	ERM	Stage 1 Notification letter sent via email and post.	Yes	Letters have been sent to the relevant government agencies to determine the relevant stakeholder groups for contact. Response requested by Friday 15 September 2017.		
30 August 2017	North Coast LLS	ERM	Stage 1 Notification letter sent via email and post.	Yes	Letters have been sent to the relevant government agencies to determine the relevant stakeholder groups for contact. Response requested by Friday 15 September 2017.		
5 September 2017	Birpai Local Aboriginal Land Council	David Carroll	Email	Yes	David sent an email registering BLALC in the project and confirming that the proposed work is wholly located within the boundary of the Birpai Local Aboriginal Land Council. David also	5/09/2017 - ERM replied thanking David for his response and confirming that we will be in contact soon.	

Date	RAP/Contact Name	Contact Made By:	Form of Contact:	Evidence of Consultation	Details	Response/Follow up?	Any Additional Actions Required?
					suggested contact with Birpai Traditional owners group.		
11/09/2017	Jason Holten Birpai Traditional Owners	Jason Holten Birpai Traditional Owners	Phone	Consultation log	JH called KD ERM to register Birpai Traditional Owners as RAP for project. Received letter from NTS		
4/10/2017	Saltwater Tribal Council	ERM KD	Mail	Yes	Letter sent to groups identified from Stage 1.1 letter to government agencies to determine the relevant stakeholder groups for contact, letter requested registration of interest to be consulted. Response requested by 13 October 2017.		
4/10/2017	Ghinni Ghinni Youth and Culture Aboriginal Corporation	ERM KD	Email & Mail	Yes	Letter sent to groups identified from Stage 1.1 letter to government agencies to determine the relevant stakeholder groups for contact, letter requested registration of interest to be consulted. Response requested by 13 October 2017.		
4/10/2017	Bindi Aboriginal Heritage & Cultural Centre Inc.	ERM KD	Mail	Yes	Letter sent to groups identified from Stage 1.1 letter to government agencies to determine the relevant stakeholder groups for contact, letter requested registration of interest to be consulted. Response requested by 13 October 2017.		
4/10/2017	Jason Holten Birpai Traditional Owners	ERM KD	Email	Yes	Letter sent to groups identified from Stage 1.1 letter to government agencies to determine the relevant stakeholder groups for contact, letter requested registration of interest to be consulted.		

Date	RAP/Contact Name	Contact Made By:	Form of Contact:	Evidence of Consultation	Details	Response/Follow up?	Any Additional Actions Required?
					BTO have already registered interest however letter sent to ensure that all groups have the same information.		
4/10/2017	Lakkari NTCG Mick Leon	ERM KD	Email & mail	Yes	Letter sent to groups identified from Stage 1.1 letter to government agencies to determine the relevant stakeholder groups for contact, letter requested registration of interest to be consulted. Response requested by 13 October 2017.		
4/10/2017	Birpi Local Aboriginal Land Council Steve Miles	ERM KD	Email & Mail	Yes	Letter sent to groups identified from Stage 1.1 letter to government agencies to determine the relevant stakeholder groups for contact, letter requested registration of interest to be consulted. Response requested by 13 October 2017.		
4/10/2017	Norm Archibald	ERM KD	Email & Mail	Yes	Letter sent to groups identified from Stage 1.1 letter to government agencies to determine the relevant stakeholder groups for contact, letter requested registration of interest to be consulted. Response requested by 13 October 2017.		
4/10/2017	Yangaay Danial Carriage	ERM KD	Mail	Yes	Letter sent to groups identified from Stage 1.1 letter to government agencies to determine the relevant stakeholder groups for contact, letter requested registration of interest to be consulted. Response requested by 13 October 2017.		
13/10/2017	Yangaay	Yangaay	email	Yes	Danial sent an email registering an interest in the project.	13/10/2017 ERM replied to confirm the registration and that we will be in	

Date	RAP/Contact Name	Contact Made By:	Form of Contact:	Evidence of Consultation	Details	Response/Follow up?	Any Additional Actions Required?
	Danial Carriage					contact with additional information soon.	
17/10/17	Jason Holten Birpai Traditional Owners	ERM KD	Email	Yes	Letter sent to RAPs providing project information and invitation to fieldwork on 15 & 16 November. Requesting response by 13 November.		
17/10/17	Birpi Local Aboriginal Land Council David Carroll	ERM KD	Email	Yes	Letter sent to RAPs providing project information and invitation to fieldwork on 15 & 16 November. Requesting response by 13 November.		
17/10/17	Yangaay Danial Carriage	ERM KD	Email	Yes	Letter sent to RAPs providing project information and invitation to fieldwork on 15 & 16 November. Requesting response by 13 November.		
21/10/17	Norm Archibald	Norm Archibald	Email	Yes	Norm sent an email registering an interest in the project. Norm apologised for delayed registration as there were issues with the mail.	27/10/2017 ERM replied to confirm the registration	
27/10/17	Norm Archibald	ERM KD	Email	Yes	Email to advise that ERM had included Norm as RAP and extended invitation to fieldwork in form of below letter. Letter sent to RAPs providing project information and invitation to fieldwork on 15 & 16 November. Requesting response by 13 November.		

Date	RAP/Contact Name	Contact Made By:	Form of Contact:	Evidence of Consultation	Details	Response/Follow up?	Any Additional Actions Required?
8/11/2017	Birpi Local Aboriginal Land Council cc. OEH	ERM	Email	Yes	<p>Letter sent to the LALC in accordance with the consultation guidelines advising them that the Registered Aboriginal Parties (RAPs) for the Sancrox Quarry Project are:</p> <ul style="list-style-type: none"> • Birpai Local Aboriginal Land Council; • Birpai Traditional Owners; • Yangaay; and • Norm Archibald. 		
9/11/17	Jason Holten Birpai Traditional Owners	ERM KD	Phone	Consult log	Called to advise that fieldwork still going ahead on 15 & 16 November. Jason advised that he would be conducting the fieldwork on behalf of Birpai Traditional Owners and Birpi Local Aboriginal Land Council		
9/11/2017	Birpi Local Aboriginal Land Council	ERM KD	Phone	Consult log	<p>Called to advise that ERM had spoken to Jason Holten who had advised he would be conducting the fieldwork on behalf of Birpai Traditional Owners and Birpi Local Aboriginal Land Council.</p> <p>Requested insurance information be sent on Jason's behalf.</p>		
9/11/17	Yangaay Danial Carriage	ERM KD	Phone	Consult log	<p>Called to advise that fieldwork still going ahead on 15 & 16 November.</p> <p>Message that phone number was disconnected.</p>		

Date	RAP/Contact Name	Contact Made By:	Form of Contact:	Evidence of Consultation	Details	Response/Follow up?	Any Additional Actions Required?
19/01/2018	Jason Holten Birpai Traditional Owners	ERM KD	Email	Yes	Draft heritage assessment provided to all RAPs for their review and comment. Comments requested by COB Friday 16 February 2018.		
19/01/2018	Birpi Local Aboriginal Land Council David Carroll	ERM KD	Email	Yes	Draft heritage assessment provided to all RAPs for their review and comment. Comments requested by COB Friday 16 February 2018.		
19/01/2018	Yangaay Danial Carriage	ERM KD	Email	Yes	Draft heritage assessment provided to all RAPs for their review and comment. Comments requested by COB Friday 16 February 2018.		
19/01/2018	Norm Archibald	ERM KD	Email	Yes	Draft heritage assessment provided to all RAPs for their review and comment. Comments requested by COB Friday 16 February 2018.		
14/3/2018	Birpi Local Aboriginal Land Council	LALC	Email	Yes	Response received on the draft report. The Birpai Local Aboriginal Land Council has viewed the draft heritage assessment dated January 2018 and we are satisfied with the assessment, methodology and the protocols and do not wish to make any further comments.	No further action required	

Annex B

Heritage Database Searches

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 0481291

Client Service ID : 298680

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
30-3-0202	Wirrer 3	AGD	56	485780	6521920	Open site	Valid	Artefact : -	Isolated Find	4024,98713
	Contact	Recorders	Ms.Jacqueline Collins Permits							
30-3-0203	Wirrer 4	AGD	56	485780	6521850	Open site	Valid	Artefact : -	Open Camp Site	4024
	Contact	Recorders	Ms.Jacqueline Collins Permits							
30-3-0204	Wattoo 1	AGD	56	484980	6520790	Open site	Valid	Artefact : -	Isolated Find	4024,98713
	Contact	Recorders	Ms.Jacqueline Collins Permits							
30-3-0205	Wattoo 2	AGD	56	485150	6521220	Open site	Valid	Artefact : -	Isolated Find	4024,98713
	Contact	Recorders	Ms.Jacqueline Collins Permits							
30-3-0206	Wattoo 3	AGD	56	485220	6521450	Open site	Valid	Artefact : -	Open Camp Site	4024,98713
	Contact	Recorders	Ms.Jacqueline Collins Permits							
30-3-0207	Brettar 1	AGD	56	484010	6520580	Open site	Valid	Artefact : -	Open Camp Site	4024,98713
	Contact	Recorders	Ms.Jacqueline Collins Permits							
30-3-0208	Brettar 2	AGD	56	483920	6520860	Open site	Valid	Artefact : -	Isolated Find	4024,98713
	Contact	Recorders	Ms.Jacqueline Collins Permits							
30-3-0211	Brettar 5	AGD	56	483550	6521050	Open site	Valid	Artefact : -	Open Camp Site	4024,98713,10 2213
	Contact	Recorders	Ms.Jacqueline Collins Permits							
30-3-0212	Brettar 6	AGD	56	483370	6520840	Open site	Valid	Artefact : -	Open Camp Site	4024,98713,10 2213
	Contact	Recorders	Ms.Jacqueline Collins Permits							
30-3-0217	Rawdon 1;Rawdon Island;	AGD	56	478680	6523500	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Ms.Jacqueline Collins Permits							
30-3-0221	Rawdon 1;	AGD	56	478680	6523500	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Ms.Jacqueline Collins Permits							
30-3-0156	RTA 1	AGD	56	483520	6519035	Open site	Destroyed	Artefact : -	Isolated Find	2711,98713
	Contact	Recorders	ADISE Pty Ltd,Ms.Jacqueline Collins,Ms.Jacqueline Collins Permits							
30-3-0157	RTA 2	AGD	56	483650	6519060	Open site	Destroyed	Artefact : -	Isolated Find	2711,98713
	Contact	Recorders	ADISE Pty Ltd,Ms.Jacqueline Collins,Ms.Jacqueline Collins Permits							
30-3-0158	RTA 3	AGD	56	484380	6518440	Open site	Valid	Artefact : -	Open Camp Site	2711,98713
	Contact	Recorders	Ms.Jacqueline Collins Permits							
30-3-0162	Brettar 7	AGD	56	483400	6520870	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	4024,98713,10 2213
	Contact	Recorders	Ms.Jacqueline Collins Permits							
30-3-0163	Tarrokoe 1	AGD	56	484370	6518450	Open site	Valid	Artefact : -	Isolated Find	4024,98713
	Contact	Recorders	Ms.Jacqueline Collins Permits							

Report generated by AHIMS Web Service on 30/08/2017 for Joanne Woodhouse for the following area at Lat, Long From : -31.4664, 152.7767 - Lat, Long To : -31.4117, 152.8634 with a Buffer of 1000 meters. Additional Info : Heritage Assessment. Number of Aboriginal sites and Aboriginal objects found is 83

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 0481291

Client Service ID : 298680

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
30-3-0164	Tarrokoe 2	AGD	56	484350	6518130	Open site	Valid	Artefact : -	Open Camp Site	4024,98713
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							
30-3-0165	Tarrokoe 3	AGD	56	484310	6518420	Open site	Valid	Artefact : -	Open Camp Site	4024,98713
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							
30-3-0168	Tarrakoe 6	AGD	56	484240	6517850	Open site	Valid	Artefact : -	Isolated Find	98713
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							
30-3-0169	Tarrokoe 7	AGD	56	484150	6518270	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	4024,98713
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							
30-3-0170	Biller 1	AGD	56	485560	6525160	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	4024
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							
30-3-0171	Biller 2	AGD	56	485650	6525260	Open site	Valid	Artefact : -	Open Camp Site	4024
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							
30-3-0172	Biller 3	AGD	56	485700	6525400	Open site	Valid	Artefact : -	Isolated Find	4024
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							
30-3-0173	Biller 4	AGD	56	484950	6525450	Open site	Valid	Artefact : -	Open Camp Site	4024
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							
30-3-0175	Biller 6	AGD	56	484250	6525250	Open site	Valid	Artefact : -	Isolated Find	4024
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							
30-3-0176	Biller 7	AGD	56	485550	6525090	Open site	Valid	Artefact : -	Isolated Find	4024
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							
30-3-0177	Bittrow 1	AGD	56	481370	6522330	Open site	Valid	Artefact : -	Isolated Find	4024
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							
30-3-0178	Bittrow 2	AGD	56	481420	6522070	Open site	Valid	Artefact : -	Isolated Find	4024
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							
30-3-0179	Bittrow 3	AGD	56	481320	6522050	Open site	Valid	Artefact : -	Open Camp Site	4024
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							
30-3-0180	Bittrow 4	AGD	56	481380	6521850	Open site	Valid	Artefact : -	Isolated Find	4024
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							
30-3-0181	Bittrow 5	AGD	56	481400	6521480	Open site	Valid	Artefact : -	Open Camp Site	4024
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							
30-3-0182	Bittrow 6	AGD	56	481500	6521600	Open site	Valid	Artefact : -	Open Camp Site	4024
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins <u>Permits</u>							

Report generated by AHIMS Web Service on 30/08/2017 for Joanne Woodhouse for the following area at Lat, Long From : -31.4664, 152.7767 - Lat, Long To : -31.4117, 152.8634 with a Buffer of 1000 meters. Additional Info : Heritage Assessment. Number of Aboriginal sites and Aboriginal objects found is 83

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 0481291

Client Service ID : 298680

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
30-3-0183	Bullii 1	AGD	56	481560	6520250	Open site	Valid	Artefact : -	Isolated Find	4024,98713
	Contact	Recorders		Ms.Jacqueline Collins				Permits		
30-3-0184	Piyerbang 1	AGD	56	486220	6518050	Open site	Valid	Artefact : -	Open Camp Site	4024,98713
	Contact	Recorders		Ms.Jacqueline Collins				Permits		
30-3-0185	Piyerbang 2	AGD	56	486320	6518020	Open site	Valid	Artefact : -	Open Camp Site	4024,98713
	Contact	Recorders		Ms.Jacqueline Collins				Permits		
30-3-0186	Piyerbang 3	AGD	56	486250	6517990	Open site	Valid	Artefact : -	Open Camp Site	4024,98713
	Contact	Recorders		Ms.Jacqueline Collins				Permits		
30-3-0187	Piyerbang 4	AGD	56	485850	6518270	Open site	Valid	Artefact : -	Open Camp Site	4024,98713
	Contact	Recorders		Ms.Jacqueline Collins				Permits		
30-3-0188	Piyerbang 5	AGD	56	485900	6518000	Open site	Valid	Artefact : -	Open Camp Site	4024,98713
	Contact	Recorders		Ms.Jacqueline Collins				Permits		
30-3-0189	Cooricki 1	AGD	56	485370	6517570	Open site	Valid	Artefact : -	Open Camp Site	4024,98713
	Contact	Recorders		Ms.Jacqueline Collins				Permits		
30-3-0191	Cooricki 3 (Port Macquarie)	AGD	56	485060	6517450	Open site	Valid	Artefact : -	Open Camp Site	98713
	Contact	Recorders		Ms.Jacqueline Collins				Permits		
30-3-0192	Cooricki 4	AGD	56	485000	6517720	Open site	Valid	Artefact : -	Open Camp Site	4024,98713
	Contact	Recorders		Ms.Jacqueline Collins				Permits		
30-3-0193	Cooricki 5	AGD	56	484920	6517750	Open site	Valid	Artefact : -	Open Camp Site	4024,98713
	Contact	Recorders		Ms.Jacqueline Collins				Permits		
30-3-0196	Carkon 1	AGD	56	484800	6522300	Open site	Valid	Artefact : -	Open Camp Site	4024
	Contact	Recorders		Ms.Jacqueline Collins				Permits		
30-3-0197	Carkon 2	AGD	56	484700	6522150	Open site	Valid	Artefact : -	Isolated Find	4024
	Contact	Recorders		Ms.Jacqueline Collins				Permits		
30-3-0199	Carkon 4	AGD	56	484830	6522240	Open site	Valid	Artefact : -	Open Camp Site	4024
	Contact	Recorders		Ms.Jacqueline Collins				Permits		
30-3-0200	Wirrer 1	AGD	56	485620	6521670	Open site	Valid	Shell : -, Artefact : -	Midden	4024,98713
	Contact	Recorders		Ms.Jacqueline Collins				Permits		
30-3-0201	Wirrer 2	AGD	56	485820	6521970	Open site	Valid	Artefact : -	Isolated Find	4024
	Contact	Recorders		Ms.Jacqueline Collins				Permits		
30-3-0121	Partridge Creek Swamp	AGD	56	486400	6522200	Open site	Valid	Stone Quarry : -, Artefact : -	Quarry	98713
	Contact	Recorders		Mr.Gordon Atkinson				Permits	2945	
30-3-0322	Ah-E2	AGD	56	486775	6519450	Open site	Valid	Artefact : 1		
	Contact	Recorders		ADISE Pty Ltd,Ms.Jacqueline Collins				Permits	3214,3216	

Report generated by AHIMS Web Service on 30/08/2017 for Joanne Woodhouse for the following area at Lat, Long From : -31.4664, 152.7767 - Lat, Long To : -31.4117, 152.8634 with a Buffer of 1000 meters. Additional Info : Heritage Assessment. Number of Aboriginal sites and Aboriginal objects found is 83

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 0481291

Client Service ID : 298680

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
30-3-0323	Ah-D1	AGD	56	485634	6519193	Open site	Partially Destroyed	Artefact : 6, Potential Archaeological Deposit (PAD) : 0		
	Contact							Permits	3214,3216	
30-3-0324	Ah-D2	AGD	56	484550	6518829	Open site	Partially Destroyed	Artefact : 2		
	Contact							Permits	3214,3216	
30-3-0325	Ah-D3	AGD	56	484338	6518950	Open site	Partially Destroyed	Artefact : 6		
	Contact							Permits	3214,3216	
30-3-0326	Ah-D6	AGD	56	486310	6519300	Open site	Valid	Artefact : 5		
	Contact							Permits	3214,3216	
30-3-0327	Karikeree 1	AGD	56	483975	6517775	Open site	Valid	Artefact : 20		
	Contact							Permits	2627,2841	
30-3-0328	Karikeree 2	AGD	56	483525	6517727	Open site	Valid	Artefact : 1		
	Contact							Permits		
30-3-0329	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	Contact							Permits		
30-3-0330	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	Contact							Permits		
30-3-0331	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	Contact							Permits		
30-3-0332	Watoo 7	AGD	56	485625	6520875	Open site	Valid	Artefact : 20		
	Contact							Permits		
30-3-0333	Watoo 8	AGD	56	485510	6519856	Open site	Valid	Artefact : 1		
	Contact							Permits		
30-3-0334	Watoo 9	AGD	56	483875	6520036	Open site	Valid	Artefact : 1		
	Contact							Permits		
30-3-0335	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	Contact							Permits		
30-3-0338	TKA-OS1 with PAD	AGD	56	486330	6520823	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact							Permits		
	T Russell									
		Recorders				Birpai Local Aboriginal Land Council				

Report generated by AHIMS Web Service on 30/08/2017 for Joanne Woodhouse for the following area at Lat, Long From : -31.4664, 152.7767 - Lat, Long To : -31.4117, 152.8634 with a Buffer of 1000 meters. Additional Info : Heritage Assessment. Number of Aboriginal sites and Aboriginal objects found is 83

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 0481291

Client Service ID : 298680

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
30-3-0353	CA62#2 & #3	AGD	56	479670	6518519	Open site	Valid	Artefact : 2		
	Contact	Recorders	Kevin Smith					Permits		
30-3-0354	C62#4	AGD	56	479804	6518573	Open site	Valid	Artefact : 2		
	Contact	Recorders	Kevin Smith					Permits		
30-3-0198	Carkon 3	AGD	56	485130	6521940	Open site	Valid	Artefact : -	Open Camp Site	4024
	Contact	Recorders	Ms.Jacqueline Collins					Permits	2945	
30-3-0174	Billar 5	AGD	56	484400	6525300	Open site	Valid	Artefact : -	Open Camp Site	4024
	Contact	Recorders	Ms.Jacqueline Collins					Permits		
30-3-0392	OHK 46/A	GDA	56	482543	6525461	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Peter Kuskie					Permits		
30-3-0390	Thrumster PAD 1	GDA	56	485200	6522800	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	ERM - Maitland					Permits		
30-3-0391	OHK 47/A	GDA	56	482513	6525387	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Peter Kuskie					Permits		
30-3-0409	RD - 1	AGD	56	487200	6524975	Open site	Valid	Artefact : 11		101178
	Contact	Recorders	Lindsay Moran					Permits		
30-3-0166	Tarrokoe 4	AGD	56	484140	6518300	Open site	Valid	Artefact : -	Open Camp Site	4024,98713
	Contact	Recorders	Ms.Jacqueline Collins					Permits		
30-3-0167	Tarrakoe 5	AGD	56	484500	6518080	Open site	Valid	Artefact : -	Isolated Find	98713
	Contact	Recorders	Ms.Jacqueline Collins					Permits		
30-3-0209	Brettar 3	AGD	56	483820	6520850	Open site	Valid	Artefact : -	Isolated Find	4024,98713
	Contact	Recorders	Ms.Jacqueline Collins					Permits		
30-3-0210	Brettar 4	AGD	56	483520	6520830	Open site	Valid	Artefact : -	Open Camp Site	4024,98713,10 2213
	Contact	Recorders	Ms.Jacqueline Collins					Permits		
30-3-0405	Thrumster Sewerage 1	AGD	56	485200	6522800	Open site	Valid	Artefact : 36		101206
	Contact	Recorders	Doctor.Diana Neuweiger					Permits	3065	
30-3-0403	Tarrokoe 5	GDA	56	484500	6518080	Open site	Valid	Artefact : -		4024
	Contact	Recorders	Ms.Jacqueline Collins					Permits		
30-3-0404	Tarrokoe 6	GDA	56	484240	6517850	Open site	Valid	Artefact : 6		4024
	Contact	Recorders	Ms.Jacqueline Collins					Permits		
30-3-0194	Bocal 1	AGD	56	482750	6522800	Open site	Valid	Artefact : -	Open Camp Site	4024,100934,1 01426
	Contact	Recorders	Ms.Jacqueline Collins					Permits	2940,2941	

Report generated by AHIMS Web Service on 30/08/2017 for Joanne Woodhouse for the following area at Lat, Long From : -31.4664, 152.7767 - Lat, Long To : -31.4117, 152.8634 with a Buffer of 1000 meters. Additional Info : Heritage Assessment. Number of Aboriginal sites and Aboriginal objects found is 83

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 0481291

Client Service ID : 298680

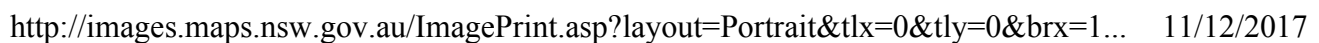
SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
30-3-0195	Bocal 2	AGD	56	482730	6522350	Open site	Valid	Artefact : -	Open Camp Site	4024,100934,101426
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins					<u>Permits</u>	2940,2941	
30-3-0410	PAD Ah-1 (Not an Aboriginal Site)	GDA	56	485449	6519140	Open site	Valid	Potential Archaeological Deposit (PAD) : 0		
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins					<u>Permits</u>	3214,3216	
30-3-0412	Ah-D7	GDA	56	483865	6518963	Open site	Destroyed	Artefact : 8		
	<u>Contact</u>	<u>Recorders</u>	ADISE Pty Ltd,Ms.Jacqueline Collins,Ms.Jacqueline Collins					<u>Permits</u>	3214	
30-3-0413	Ah-D8	GDA	56	483391	6519079	Open site	Destroyed	Artefact : 8		
	<u>Contact</u>	<u>Recorders</u>	ADISE Pty Ltd,Ms.Jacqueline Collins,Ms.Jacqueline Collins					<u>Permits</u>	3214	

Report generated by AHIMS Web Service on 30/08/2017 for Joanne Woodhouse for the following area at Lat, Long From : -31.4664, 152.7767 - Lat, Long To : -31.4117, 152.8634 with a Buffer of 1000 meters. Additional Info : Heritage Assessment. Number of Aboriginal sites and Aboriginal objects found is 83

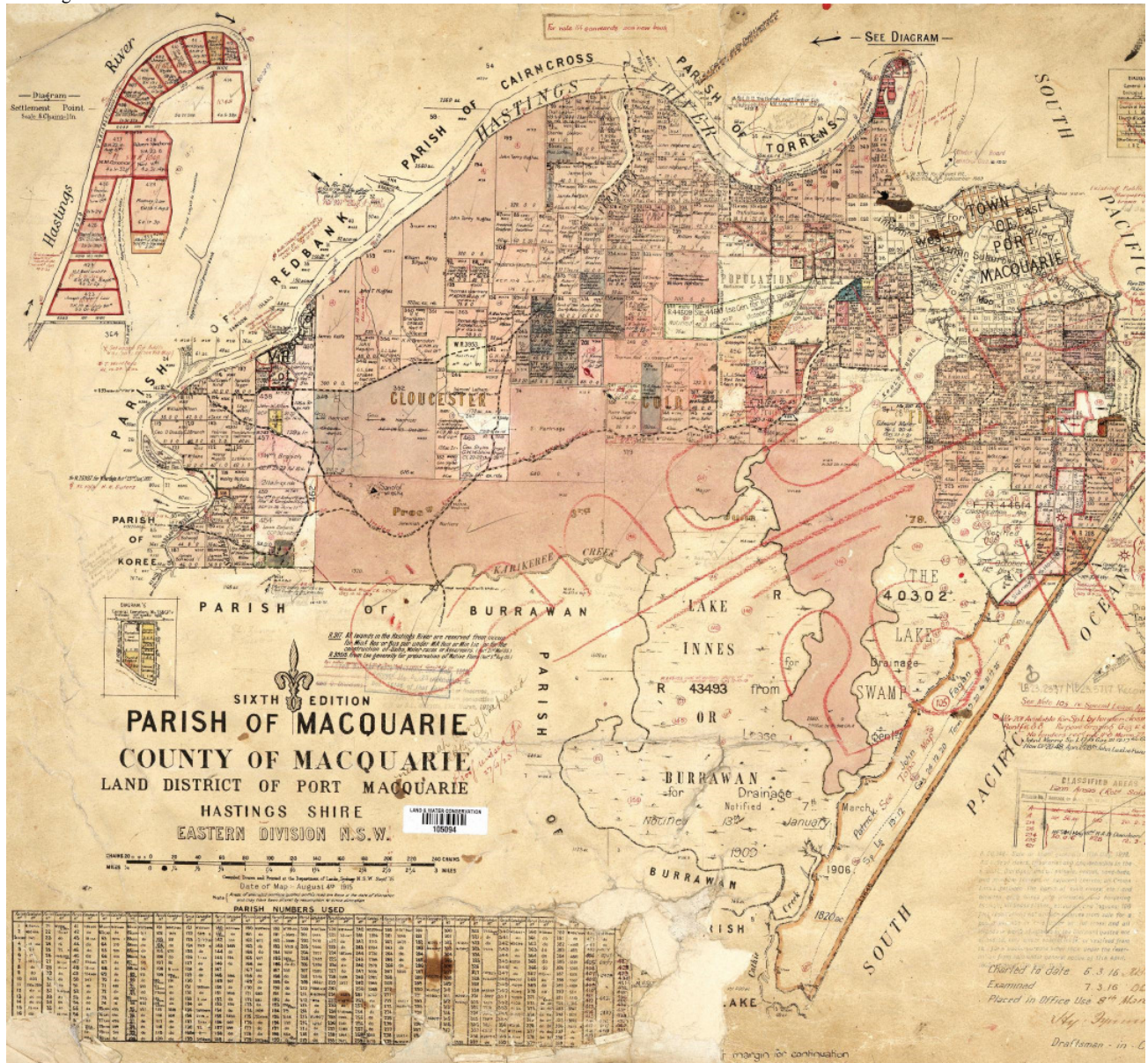
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Annex C

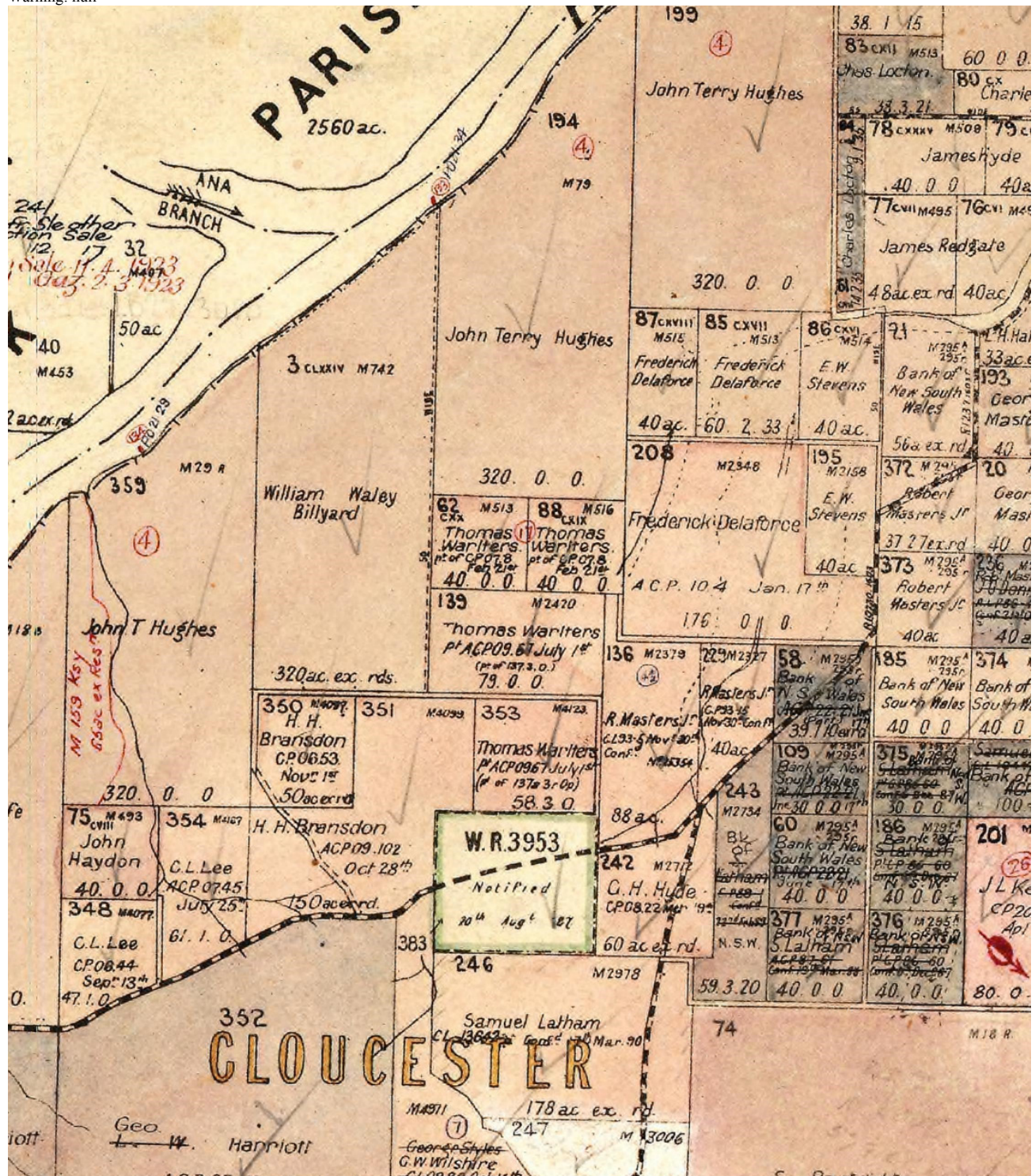
Parish Maps



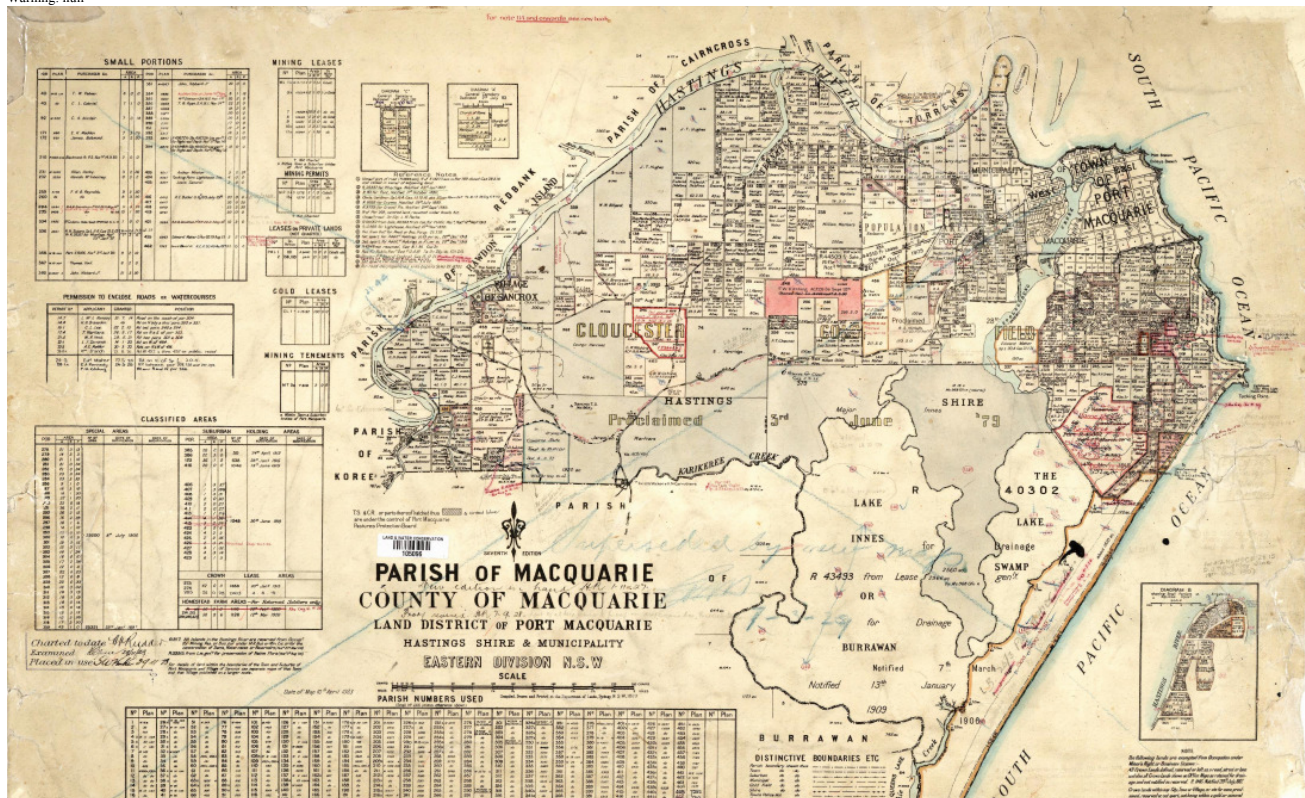
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Warning: null



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Warning: null



Staff: Unknown /Doc: Parish of Macquarie (Parish Maps-Historical Parish Maps) /Rev: 30 Sep 2011 /Prt: 11 Dec 2017 23:13 /Seq: 1 of 1 /Src: Pixel
Warning: null



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