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**ARTC** *InlandRail*

# Inland Rail Programme Narrabri to North Star Project



## **Environmental Impact Statement**

Technical Report 8: **Aboriginal Cultural Heritage  
and Archaeological Assessment**

Image: Newell Highway north of Narrabri, NSW



# Technical Report 8: **Aboriginal Cultural Heritage and Archaeological Assessment**

Image: Railway and Newell Highway north of Narrabri, NSW





## **ARTC INLAND RAIL – NARRABRI TO NORTH STAR EIS**

Aboriginal Cultural Heritage and  
Archaeological Assessment

**FINAL**

October 2017







## **ARTC INLAND RAIL – NARRABRI TO NORTH STAR EIS**

Aboriginal Cultural Heritage and Archaeological  
Assessment

### **FINAL**

Prepared by  
**Umwelt (Australia) Pty Limited**  
on behalf of  
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Report No. 3607/R06/Final  
Date: October 2017



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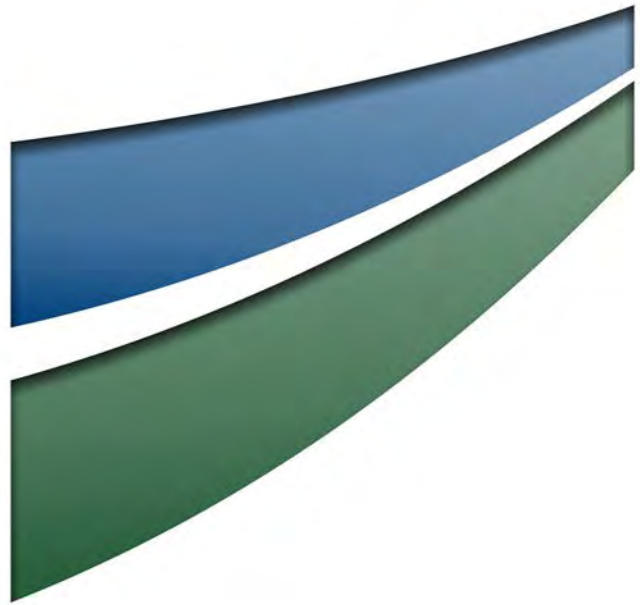
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# Executive Summary



The Australian Government has committed to delivering a significant piece of national transport infrastructure by constructing a high performance and direct interstate freight rail corridor between Melbourne and Brisbane. The Inland Rail programme (Inland Rail) involves the design and construction of a new inland rail connection, about 1,700 kilometres long, between Melbourne and Brisbane. Inland Rail is a transformational rail infrastructure initiative that will enhance Australia's existing national rail network and serve the interstate freight market.

Australian Rail Track Corporation Ltd (ARTC) is seeking approval to construct and operate the Narrabri to North Star section of Inland Rail ('the proposal'), which consists of 188 kilometres of upgraded rail track and associated facilities. The proposal will generally be located along the existing rail corridor between Narrabri and North Star. The proposal commences on the northern side of Narrabri, passes through Bellata, Gurley and Moree largely using the existing corridor and ends at the town of North Star in NSW. The Camurra bypass is proposed to extend from the existing line north of the crossing of the Gwydir River to rejoin the existing line near Camurra.

Proposed works to be constructed within the existing rail corridor will include track upgrading, tracking realignment (Bellata, Gurley and Moree stations), culvert and underbridge replacement, establishment of crossing loops (Bobbiwaa, Pennys Road, Moree, Coolleearllee and Croppa Creek), construction of three new bridges (Moree, Gwydir and Croppa Creek) and establishment/replacement of turnouts. Proposed works outside the existing rail corridor will include and construction of a road

overbridge over the Newell Highway (three kilometres north of Bellata), the construction of the Camurra Bypass, establishment of a road overbridge and road connections at Jones Avenue (Moree), establishment and use of construction compounds and other ancillary works that may occur within the proposal site (such as the establishment of access tracks or changes to powerlines).

A detailed archaeological survey and assessment was undertaken for the proposal with the findings documented in this report. The archaeological investigations were undertaken concurrently with an Aboriginal cultural heritage assessment that was completed in partnership with representatives of the Aboriginal community. In accordance with current requirements and expectations, consultation with Aboriginal parties regarding the proposal was undertaken in accordance with Part 8A, Clause 80C of the NPW Regulation and the Aboriginal cultural heritage consultation requirements for proponents (DECCW 2010). The documentation of the outcomes of Aboriginal party consultation in this report reflects the requirements of the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH 2011).

A copy of the draft Aboriginal cultural heritage and archaeological assessment report was provided to all registered Aboriginal parties in June 2017 with an invitation to review and comment on all aspects of the document. No further detailed comments or responses to the draft report were received from the registered Aboriginal parties.



A review of key environmental factors associated with the proposal site demonstrates that the portions of the proposal site associated with water resources would have provided an environmental context attractive to Aboriginal people and that the north-eastern portion of the proposal site may have provided access to lithic resources. However, historical land use of the proposal site and surrounds has the potential to have significantly impacted any archaeological deposits that may be present.

A review of available ethnohistoric resources provides important information about how Aboriginal people lived in the region during the period of early non-Aboriginal settlement. While these records are affected by the biases of the author, they do provide some indication of the traditional boundaries of Gomeroi Country (including the proposal site) and other key aspects of Gomeroi society. These records also demonstrate that the period of non-Aboriginal settlement from the late 1830s was characterised by ongoing conflict between Aboriginal and non-Aboriginal people, resulting in the deaths of 100s of Aboriginal people, both directly (where Aboriginal people were murdered) and indirectly (through the spread of disease and the removal of access to resources). These impacts were exacerbated during the mission period in which Aboriginal people were required to move to a number of established missions within the region, the majority of which were highly regimented and allowed for the control of Aboriginal people. In response, Aboriginal people within the region established informal settlements on the outskirts of Moree, including what was referred to as the 'Steel Bridge Camp', located within the proposal site at the crossing of the Mehi River (Briggs-Smith et al, 1999:4). There was a history of significant conflict between Aboriginal people living in these fringe camps on the edges of Moree and town authorities.

A review of available archaeological information (including an AHIMS search) identified 4 previously recorded sites within 50 metres of the proposal site. Two of these sites are located outside the proposal site; consisting of a scarred tree (#10-6-0048) and an isolated artefact (2-4-0073). The remaining two sites extended into the proposal site and consisted of an area of potential archaeological deposit at the former Aboriginal fringe camp referred to as the Steel Bridge fringe camp (#10-3-0032) and an artefact scatter and area of potential archaeological deposit (10-3-0035). Based on the

review of available information, it was predicted that stone artefact scatters and scarred trees are the most likely site types to be identified within the proposal site. Stone artefact scatters will be most frequent in number and will be larger in size in proximity to reliable sources of water. Quarry sites may also occur where suitable rock outcrops are present. Within the proposal site, the potential for quarry sites is greatest in the section between Croppa Creek and North Star where geological mapping indicates rock types suitable for artefact manufacture (silcrete, basalt, dolerite and porcellanite) may be present.

In relation to all of the above, it is noted that the proposal site has been subject to significant disturbance. Within the existing rail corridor, the construction and maintenance of the existing rail line is likely to have resulted in the removal/relocation of archaeological evidence that may have been present (if any). Similarly, in adjoining farmland within the proposal site and additional assessment areas outside the existing rail corridor, clearance, grazing and cultivation of the landscape will have impacted on archaeological potential, compromising the integrity of any archaeological sites that may have been present. The potential exception to this is the possibility that archaeological deposits may be present at depths less subject to disturbance in terrace landforms bordering the Mehi and Gwydir Rivers and Croppa Creek.

The survey of the proposal site and additional assessment areas comprised both vehicle and pedestrian survey in order to ensure maximum coverage of the area, with a focus on areas the predictive model indicated may have higher archaeological potential, including previously recorded sites. During the survey, it was noted that the existing rail corridor has been subject to extensive disturbance, with the sections of the proposal site within the existing rail corridor assessed as having low archaeological potential, with the exception of the terrace landforms bordering the Mehi and Gwydir Rivers and Croppa Creek. In four survey areas (42, 55, 56 and 67) within these terrace landforms, it was recognised that deposits may be present below the depth of current disturbance and depth of modern flood deposit. Within the terraces immediately bordering the Mehi and Gwydir Rivers (survey areas 42 and 56), this level of potential is assessed as moderate to high based on the permanent nature of these watercourses. The Croppa Creek terraces

(survey area 55) and the section of Gwydir River terraces upon which the Camurra bypass is located (survey area 57) were assessed as having moderate potential due to the slightly lesser nature of Croppa Creek (when compared to the Mehi and Gwydir Rivers) and the distance between the Camurra bypass terraces and the main river channel. In addition, one portion of the proposal site extending outside the existing rail corridor (within Survey Unit 15) was assessed as having moderate archaeological potential.

A total of 19 new sites were identified during the survey, of which 14 are located within the proposal site and 3 are within 10 metres of the proposal site. With the exception of sites NNS AS1 and NNS AS7, these sites all consisted of isolated artefacts or artefact scatters containing less than 5 artefacts. It is important to note that the artefacts within NNS AS7 are considered unlikely to be in-situ and are likely to have been imported to the site with gravel materials. One previously identified site, an isolated artefact (#2-4-0073), was no longer visible. Sites #10-3-0035 (Duffys Creek) and #10-3-0032 (Steel Bridge Camp) did not have any visible manifestation within the proposal site but are both associated with areas identified as having moderate or higher archaeological potential. The previously recorded scarred tree (#10-6-0048) was in the same condition as the original recording. The sites located in areas of low archaeological potential all comprised sites containing low numbers of artefacts in highly disturbed contexts. The area surrounding site NNS AS1 (associated with survey area 15) was assessed as having moderate potential based on the nature of the landform, the presence of artefacts across a relatively large area, the low levels of visibility (potentially meaning that additional artefacts were present but not visible) and the lower level of disturbance in this area when compared to other areas subject to cultivation.

The archaeological sites within the proposal site that are not associated with areas of archaeological potential are assessed as having low archaeological potential. Site 10-6-0048 is assessed as having low to moderate archaeological significance. The areas of moderate or higher archaeological potential (including sites 10-3-0032, 10-3-0035 and NNS AS1) are assessed as having moderate or moderate to high archaeological significance based on potential values noting that this may be subject to revision should further investigation be undertaken within these areas.

Based on currently available information, the proposal is likely to result in harm to archaeological sites NNS IA6-13, NNS AS1, 5, 6, 7, 10-3-0032 and 10-3-0035, with sites NNS IA4 and NNS AS2 and 4 also considered likely to be impacted (located within 10 metres of the proposal site). In addition, the proposal may result in disturbance to areas of moderate or higher archaeological potential within survey areas 15 (containing the proposed Newell Highway overpass that is located outside the existing rail corridor), 42 (Gwydir River terraces), 55 (Croppa Creek terraces), 56 (Mehi River terraces) and 57 (Camurra bypass on Gwydir River terraces).

During the survey, Aboriginal parties provided a number of recommendations. An invitation to comment on these recommendations was provided as part of the opportunity to review the draft report. No further comments were received in relation to the recommendations. The recommendations provided by Aboriginal parties are provided below.

- Some Aboriginal parties requested an opportunity to revisit three previously recorded site locations (10-3-0032, 10-3-0035 and 2-4-0073) where vegetation cover potentially obscured artefacts and areas of identified sensitivity (namely associated with the Mehi and Gwydir Rivers) following the removal of vegetation either as a result of a change in climatic conditions or during initial vegetation clearance for construction purposes..
- ARTC should make sure that the Mehi River bridge (Steel Bridge) is not removed. The Aboriginal parties requested that ARTC consult with Aboriginal parties to develop appropriate interpretation material to accompany any subsequent re-purposing of the bridge.
- Where ARTC is required to undertake rehabilitation of areas subject to temporary disturbance or to provide compensatory habitat, ARTC should provide the opportunity for the registered Aboriginal parties to have input into the selection of plant species so that there is an adequate representation of local Aboriginal resource plants (noting that any plant selections must conform to the required vegetation community that is being planted).

The following archaeological recommendations were made for the management of Aboriginal cultural heritage within the proposal site.

- ARTC should advise relevant employees and contractors that it is an offence under Section 86 of the NPW Act to harm or desecrate an Aboriginal object and provide appropriate Aboriginal cultural heritage awareness to all employees and contractors so that they are aware of their obligations.
- Prior to the commencement of construction, surface collection works should be conducted at sites NNS IA6-13, NNS AS1, 5, 6, 7, 10-3-0032, 10-3-0035, NNS IA4 and NNS AS2 and 4 where it is identified that the proposal would result in surface impacts within the identified site area. The surface collection should be undertaken in accordance with the approach outlined in **Section 11.1**.
- The assessment has identified three locations within the proposal site (consisting of the Gwydir River and associated terraces – Survey Units 42 and 57, the Mehi River and associated terraces – Survey Unit 56 and Croppa Creek and associated terraces – Survey Unit 55) that have moderate to high archaeological potential at depths below those previously impacted by rail construction and agricultural practices. In these areas, where finalised designs will require impacts at depths greater than 50 centimetres below the natural ground surface (that is, the surface below existing ballast/fill), a geomorphic testing program will be undertaken to confirm if any buried soil profiles are present that may contain relatively intact archaeological deposits. The geomorphic testing is an interim measure intended to refine the understanding of the archaeological potential of these landforms to determine whether or not there is the need for further archaeological testing or salvage in accordance with current guidelines and requirements. The geomorphic testing program will be developed for inclusion with an Aboriginal Cultural Heritage Management Plan. Where the geomorphic testing identifies areas subject to impact by the proposal that contain relatively intact buried soil profiles that have high potential to be associated with archaeological deposits, a subsequent program of archaeological investigation may be undertaken. If no buried relatively intact soil profiles are present no further investigations are required. If they do occur and will be impacted, a methodology for any subsequent archaeological excavation that may be required will be developed in consultation with Aboriginal parties for inclusion within an Aboriginal Cultural Heritage Management Plan.
- Should it be necessary to undertake ground disturbance works outside the existing rail corridor in survey area 15 (Newell Highway overbridge), archaeological excavation works should be conducted prior to any ground disturbing construction works in this area. The final location of excavations should be determined with reference to detailed design within survey area 15 however allowance should be made for excavation of up to 5% of the portion of survey area 15 that is outside the existing rail corridor and subject to impact. Finalisation of the excavation methodology will occur as part of the development of an Aboriginal Cultural Heritage Management Plan.
- With reference to site 10-6-0048, ARTC should attempt to avoid impacts within the dripline of the scarred tree and put appropriate protective measures in place during construction works so that incidental impact to the tree is avoided. Should this not be possible, an alternate management strategy for this site should be developed as a component of an Aboriginal Cultural Heritage Management Plan.
- The detailed design process, including any designs for compound areas should be undertaken with reference to the outcomes of this assessment and with the intent of avoiding disturbance in areas of archaeological potential. Where possible, efforts should be made to locate construction compounds in areas of low archaeological potential. If this is not possible, the need for further investigation within these areas should be determined in the Aboriginal Cultural Heritage Management Plan.
- Should the detailed design process identify that impacts are required outside the proposal site, any such additional area will be subject to further assessment to clarify their Aboriginal cultural and archaeological values.
- Where the proposal will involve clearance of mature native trees in areas that were not subject to archaeological survey (i.e. in areas where access was not available at the time of the survey), any such trees subject to clearance should be inspected for any evidence of cultural



scarring. Where any scarred trees are identified, efforts should be made to avoid impact. Should this not be possible, a management strategy should be developed as a component of an Aboriginal Cultural Heritage Management Plan.

- Should suspected human skeletal material be identified at any time during proposal, these should be managed in accordance with the strategy provided below:
  - works within the immediate vicinity of the skeletal material would cease and the area would be cordoned off for 10 metres from all edges of the skeletal material
  - the skeletal material would be inspected to determine whether it is human or animal. If necessary, advice would be sought from a forensic specialist
  - if the skeletal material is human, the NSW Police and OEH would be contacted. No excavation will proceed until an appropriate course of action has been determined in consultation with NSW Police, OEH and the Aboriginal parties
  - if the skeletal material is not human, works may proceed.
- Should potential Aboriginal objects (other than those discussed in this assessment) be identified, works would cease within 10 metres of the potential object and the area would be cordoned off for 10 metres from the object/s. The object/s should be assessed by an appropriately qualified person to determine whether it is an Aboriginal object. If it is not an Aboriginal object, works may proceed. If it is an Aboriginal object, it would be managed in accordance with strategies that would be identified as a component of an Aboriginal Cultural Heritage Management Plan, noting that any such strategies would be consistent with the approaches outlined in **Section 11.0**.
- Should the proposal be approved, ARTC, in consultation with the registered Aboriginal parties, should develop an Aboriginal Cultural Heritage Management Plan for the proposal that is prepared with reference to all of the above recommendations.



# Glossary

Additional assessment areas	Additional areas assessed outside the proposal site to allow for flexibility in project design. It includes an approximate 60 metre buffer around culverts/underbridges and overbridges, an approximate 120 metre buffer around level crossings and some other areas to provide design flexibility for future planning.
BAR	Biodiversity Assessment Report
Code of Practice	<i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> (DECCW 2010)
Consultation requirements	<i>Aboriginal Cultural Heritage Consultation Requirements for Proponents</i> (DECCW 2010)
DECC	NSW Department of Environment and Climate Change (now OEH)
DECCW	NSW Department of Environment, Climate Change and Water (now OEH)
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
Existing rail corridor	The corridor within which existing rail infrastructure, subject to works as part of Inland Rail, is located. The existing rail corridor is defined by ARTC to mean everywhere within 15 metres of the outermost rails; or within the boundary fence where boundary fences are provided and are closer than 15 metres; or if the property boundary is less than 15 metres, the property boundary; or a permanent structure such as a fence, wall or level crossing separating the operating rail corridor from eased or non-operational land.
GIS	Geographical Information System
Greenfield	Previously undeveloped sites for commercial development or exploitation
LGA	Local Government Area
LPI	Land and Property Information
IR	Inland Rail
MGA	Map Grid of Australia
NSW	New South Wales
OEH	NSW Office of Environment and Heritage
PAD	Potential Archaeological Deposit
Proposal	The construction and operation of the Narrabri to North Star project
Proposal site	The area that would be directly affected by construction works. The proposal site is considered to have a width of 30 metres, providing for a 15 metre buffer on each side of the alignment centreline. It includes the location of proposal infrastructure, the area that would be directly disturbed by the movement of construction plant and machinery, and the location of the storage areas/compounds sites that would be used to construct that infrastructure.



SSI	State Significant Infrastructure
Strahler Stream Order	Classification system that gives a waterway an 'order' according to the number of tributaries associated with it.

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# 1.0 Introduction

## 1.1 Overview

The Australian Government has committed to delivering a significant piece of national transport infrastructure by constructing a high performance and direct interstate freight rail corridor between Melbourne and Brisbane. The Inland Rail programme (Inland Rail) involves the design and construction of a new inland rail connection, about 1,700 kilometres long, between Melbourne and Brisbane. Inland Rail is a transformational rail infrastructure initiative that will enhance Australia's existing national rail network and serve the interstate freight market.

Australian Rail Track Corporation Ltd (ARTC) is seeking approval to construct and operate the Narrabri to North Star section of Inland Rail ('the proposal'), which consists of 188 kilometres of upgraded rail track and associated facilities.

The proposal requires approval from the NSW Minister for Planning under Part 5.1 of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act). The proposal is also a controlled action under the Commonwealth *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act), and requires approval from the Australian Minister for the Environment and Energy.

This report has been prepared by Umwelt (Australia) Pty Ltd (Umwelt) as part of the environmental impact statement (EIS) for the proposal. The EIS has been prepared to accompany the application for approval of the proposal, and addresses the environmental assessment requirements of the Secretary of the Department of Planning and Environment (the SEARs), issued on 8 November 2016.

## 1.2 The proposal

The proposal is generally located in the existing rail corridor between the town of Narrabri and the village of North Star, via Moree. The location of the proposal is shown in **Figure 1.1**.

### 1.2.1 Key features

The key features of the proposal involve:

- upgrading the track, track formation, and culverts within the existing rail corridor for a distance of 188 kilometres between Narrabri and North Star
- realigning the track where required within the existing rail corridor
- providing five new crossing loops within the existing rail corridor, at Bobbiwaa, Waterloo Creek, Tycannah Creek, Coolleearllee, and Murgo
- providing a new section of rail line at Camurra, about 1.6 kilometres long, to bypass the existing hairpin curve (the Camurra bypass)
- providing three new rail bridges over the Mehi and Gwydir Rivers and Croppa Creek
- realigning about 1.5 kilometres of the Newell Highway near Bellata, and providing a new road bridge over the existing rail corridor (the Newell Highway overbridge)
- providing a new road bridge over the existing rail corridor at Jones Avenue in Moree (the Jones Avenue overbridge).

The key features of the proposal are shown in **Figure 1.2**.

Ancillary work would include works to level crossings, signalling and communications, signage and fencing, and services and utilities.

For the purpose of this assessment, the potential for Aboriginal archaeological sites to be present was assessed within the proposal site and within additional assessment areas outside the proposal site that included an approximate 60 metre buffer around culverts/underbridges and overbridges, an approximate 120 metre buffer around level crossings and some other areas to provide design flexibility for future planning.

This is a conservative approach intended to allow for design flexibility. The need for works in these additional assessment areas, if any, would be determined during detailed design and any impacts associated with such works are not assessed as part of the current report. The proposal site and the additional assessment areas are shown in Figures A1 to A56 in **Appendix 1**.

### **1.2.2 Timing**

Subject to approval of the proposal, construction is planned to start in early to mid-2018, and is expected to take about 24 months. The proposal is expected to be operational in 2020. Inland Rail as a whole is expected to be operational in 2025.

### **1.2.3 Operation**

Prior to the opening of Inland Rail as a whole, the proposal would be used by existing rail traffic, which includes trains carrying grain and ore at an average rate of about four trains per day. It is estimated that the operation of Inland Rail would involve an annual average of about 8.5 trains per day in 2025, increasing to 15 trains per day in 2040. The trains would be a mix of grain, intermodal (freight), and other general transport trains.

Once operational in 2020, the proposal would enable increased train running speeds in many areas that are currently the subject of restrictions due to local track conditions. Daily average train volumes are not expected to change until Inland Rail through connection in 2025.

### **1.2.4 Description of works associated with the proposal**

The proposal will generally be located along the existing rail corridor between Narrabri and North Star (refer to **Figure 1.1**). The proposal commences on the northern side of Narrabri, passes through Bellata, Gurley and Moree on the existing corridor and ends at the town of North Star in NSW. The Camurra bypass is proposed to extend from the existing line north of the crossing of the Gwydir River to rejoin the existing line near Camurra.

Proposed works to be constructed within the existing rail corridor will include track upgrading, tracking realignment (Bellata, Gurley and Moree stations), culvert and underbridge replacement, establishment of crossing loops (Bobbiwaa, Pennys Road, Moree, Coolleearlee and Croppa Creek), construction of three new bridges (Moree, Gwydir and Croppa Creek) and establishment/replacement of turnouts.

Proposed works outside the existing rail corridor will include construction of a road overbridge over the Newell Highway (three kilometres north of Bellata), the construction of the Camurra Bypass, establishment of a road overbridge and road connections at Jones Avenue (Moree), establishment and use of construction compounds and other ancillary works that may occur within the proposal site (such as the establishment of access tracks or changes to powerlines). Impacts associated with these works are described below.



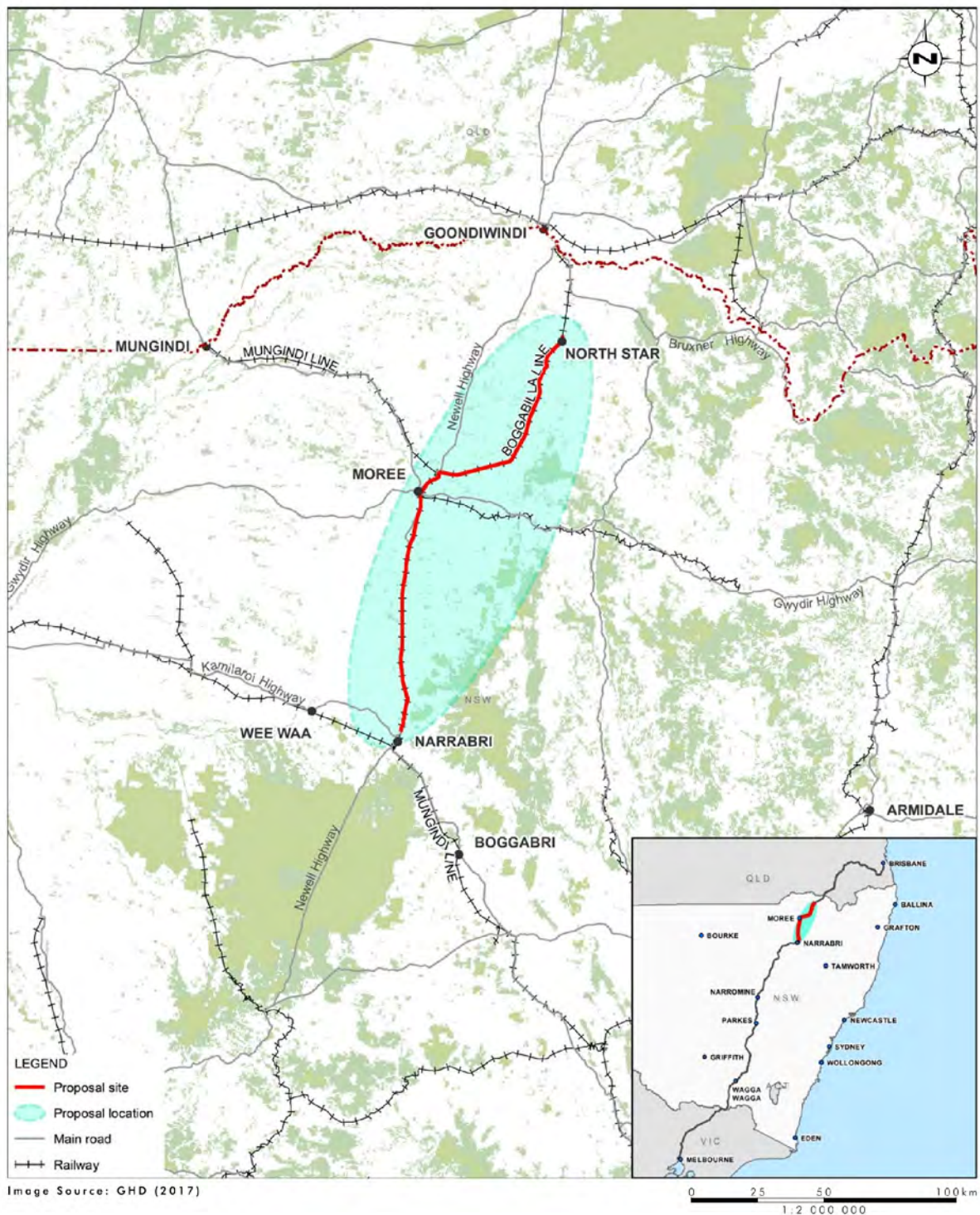


FIGURE 1.1  
Location of the Proposal

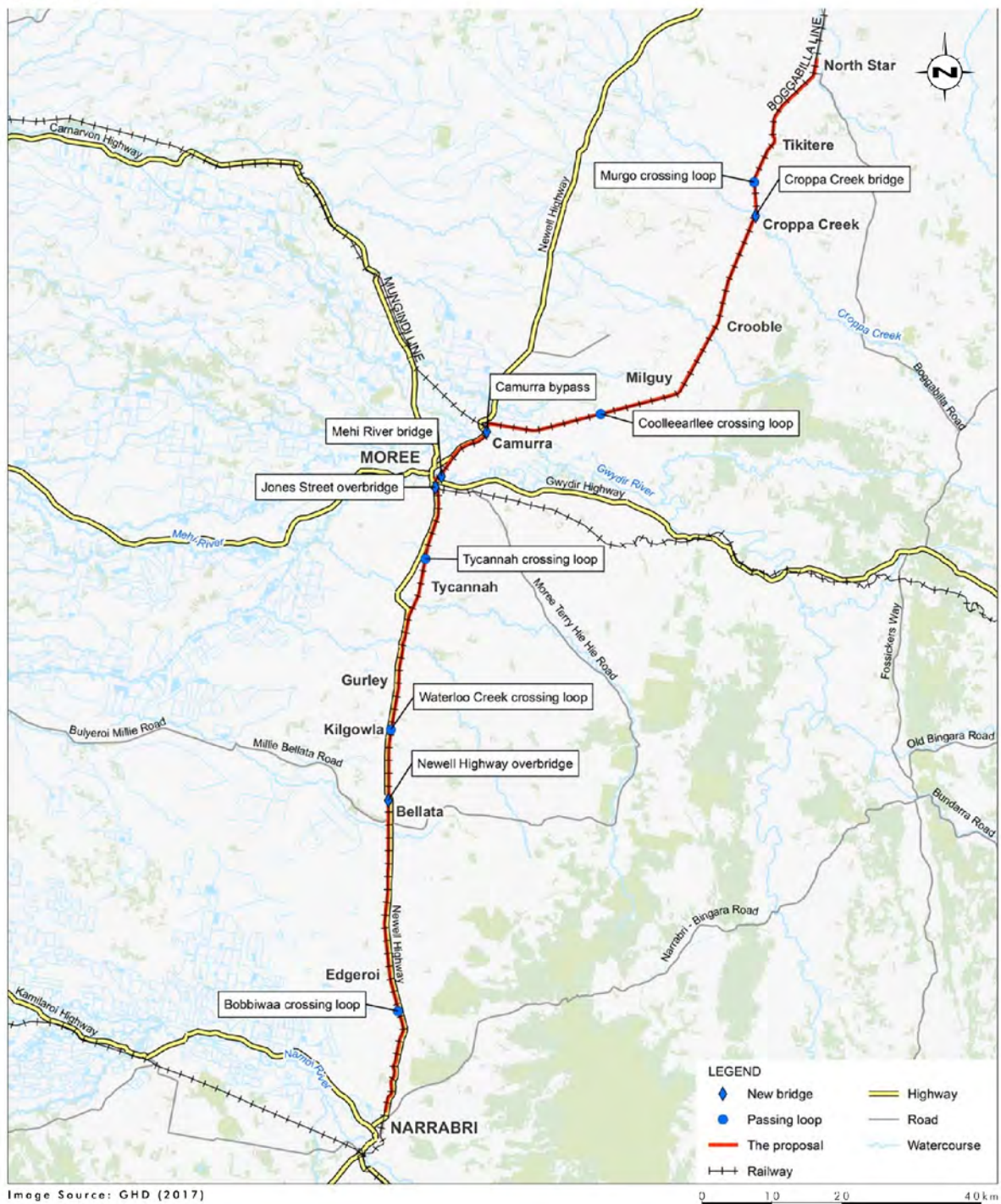


FIGURE 1.2  
Key Features of the Proposal



## **Track upgrading**

Track upgrading will involve a combination of track reconstruction and skim reconditioning. Track upgrading will involve removing the existing fastenings, rail and sleepers, trimming and either compacting the existing ballast bed (skim reconditioning) or establishing a new ballast bed (track reconstruction) over which sleepers and rail can be re-established. In areas where it is necessary to establish a new ballast bed, the existing ballast and earth formation will be excavated to a depth determined by geotechnical investigations and design. New and recycled fill material will then be placed into the excavated area and compacted and shaped prior to the track being installed. Track reconstruction will occur across the entirety within the existing rail corridor of the proposal site, with the exception of the new Camurra by-pass.

## **Drainage works**

Drainage in the form of a cess drain would be installed within the rail corridor adjacent to the track. Cess drains are surface drains located to the side of the tracks and are used to protect the track formation by keeping it dry.

The establishment of cess drains typically involves both surface and sub-surface disturbance.

## **Spoil mounds**

Excess material resulting mainly from the excavation of track formation and cess drains will be stockpiled along the rail corridor. The stockpiles would be located as close as possible to the source of the excavated material and would be formed into permanent spoil mounds, spread out to minimise height. Spoil mounds would be designed to have a maximum height of two metres (about one metre above the height of the rails), and in some cases, may need to be located on both sides of the rail track. The mounds would be stabilised as required.

## **Level crossings**

Works required at level crossings will typically involve removal of existing infrastructure, which will then be replaced with upgraded tracks, signals, booms etc. This will primarily involve surface disturbance, with some minor earthworks associated with removal of existing ballast and establishment of a formation.

## **Culverts**

Culvert replacement will generally be undertaken online (the new structure would be placed in the same location). Alternatively, culverts would be pre-cast off-site, and installed along the proposal site as the track upgrading works progress. Culvert removal will involve removal of the existing culvert structure, excavation to the required depth, placement and compaction of bedding material, installation of new culvert structure and replacement of ballast, sleepers and rail prior to reinstatement of the operational rail line.

## **Bridge replacement**

The proposal involves the replacement of rail underbridges bridges over the Mehi and Gwydir Rivers and Croppa Creek. The existing bridges would be demolished and decommissioned. The bridges would then be replaced with a reinforced concrete bridge along a similar alignment to the existing bridges. A wider structure will be built than the existing to allow for bored piles and headstocks to be located under the existing bridges.

## Crossing loops

Where it is necessary to establish a crossing loop, the nature of the works is similar to works associated with the track reconstruction. The general methodology for constructing crossing loops is as follows:

- excavate beside the existing track for the length of the crossing loop
- place and compact earth formation material
- place ballast, sleepers and rail on top of the new formation, tamp and profile ballast and weld rails
- install signal equipment and associated equipment and test operation.

## Camurra bypass

Works to establish the Camurra bypass will involve clearing of existing vegetation, excavations to establish a suitable surface, establishment of drainage works, a new track formation and culverts in a similar fashion to that described above, establishment of a fence on the track side of the rail corridor, establishment of signals, signage and level crossings (if required) and connecting at either end of the bypass to the existing rail corridor.

## Construction compounds

Two types of construction compound areas are proposed; minor compound/storage areas and larger compound sites. Minor compounds/storage areas are areas that would be used temporarily for the assembly of adjacent infrastructure such as culverts and turnouts. These compounds would be located within the rail corridor. Larger compound sites would be established for general construction activities associated with each stage of work, located within the proposal site.

Establishment of construction compounds will typically involve minor earthworks to clear vegetation and establish a stable and level ground surface and the placement of suitable fill material prior to establishing required compound buildings and infrastructure. However, methods for establishment of construction compounds may vary between locations depending on the topography, soils and compound requirements.

## 1.3 Purpose and scope of this report

This report provides the results of the Aboriginal cultural heritage and archaeological assessment of the proposal. It addresses the Aboriginal cultural heritage and archaeology specific requirements of the SEARs, summarised in **Table 1.1**.

**Table 1.1 Relevant SEARs**

Requirements For Aboriginal Cultural Heritage and Archaeological Assessment	Where addressed in this report
The design, construction and operation of the project facilitates, to the greatest extent possible, the long term protection, conservation and management of the heritage significance of items of environmental heritage and Aboriginal objects and places.	Sections 9 and 10
The design, construction and operation of the project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of environmental heritage and Aboriginal objects and places.	Sections 9 and 10

Requirements For Aboriginal Cultural Heritage and Archaeological Assessment	Where addressed in this report
The Proponent must identify and assess any direct and/or indirect impacts (including cumulative impacts) to the heritage significance of: a) Aboriginal places and objects, as defined under the National Parks and Wildlife Act 1974 and in accordance with the principles and methods of assessment identified in the current guidelines; b) Aboriginal places of heritage significance, as defined in the Standard Instrument – Principal Local Environmental Plan.	Sections 5, 9 and 10
Where archaeological investigations of Aboriginal objects are proposed these must be conducted by a suitably qualified archaeologist, in accordance with Section 1.6 of the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW2010).	Section 1.5
Where impacts to Aboriginal Objects and/or places are proposed, consultation must be undertaken with Aboriginal people in accordance with the current guidelines.	Section 3

Specifically, this assessment:

- describes the identified and potential Aboriginal heritage objects/sites associated with the proposal site
- provides additional information about the potential archaeological resources in the additional assessment areas
- documents statements made by Aboriginal parties in relation to Aboriginal cultural values associated with the proposal site
- assesses the potential that the proposal (based on the proposal site) will result in impacts to Aboriginal cultural heritage
- provides management and mitigation strategies in relation to the proposed impacts within the proposal site, including methodologies for the implementation of these strategies.

## 1.4 Structure of this report

The structure of the report is outlined below.

- **Section 1** – provides an introduction to the report
- **Section 2** – describes the legislative context for the assessment
- **Section 3** – provides information on consultation with Aboriginal parties
- **Section 4** – describes the environmental context of the proposal site
- **Section 5** – describes the cultural context of the proposal site

- **Section 6** – documents the methodology and results of the archaeological survey
- **Section 7** – discusses the Aboriginal cultural heritage and archaeological significance of the proposal site
- **Section 8** – provides an assessment of potential and actual harm to Aboriginal cultural heritage that may occur as a result of the proposal
- **Section 9** – presents the Aboriginal and archaeological management options for the proposal which is guided by the archaeological and Aboriginal cultural heritage significance
- **Section 10** – presents recommendations for the management of Aboriginal cultural heritage within the proposal site
- **Section 11** – provides methodologies for the implementation of recommended management and mitigation strategies.

## 1.5 Project team

This Aboriginal Cultural Heritage and Archaeological Assessment was completed by Alison Lamond (Senior Archaeologist, BA Hons.) and Nicola Roche (Manager Cultural Heritage, BA Hons.). Both Nicola and Alison meet the minimum qualifications to undertake assessments of this kind, as referenced in Section 1.6 of the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010a).

Input from Aboriginal parties is as acknowledged in the relevant sections of this report. Field surveys were undertaken by Nicola Roche and Aboriginal party representatives as discussed in **Section 3**.

## 2.0 Legislative context

Key legislation relating to the management of Aboriginal cultural heritage for the proposal is discussed below.

### 2.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) regulates development activity in NSW. The proposal requires approval from the NSW Minister for Planning under Part 5.1 of the EP&A Act. In accordance with Section 115ZG of the EP&A Act, it is not necessary to obtain an Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the NPW Act (refer to **Section 2.2**) in relation to activities approved under Part 5.1 of the EP&A Act. Projects approved under Part 5.1 of the EP&A Act are subject to conditions of approval issued by the Department of Planning and Environment (DPE) and (where relevant) Aboriginal cultural heritage is addressed by appropriate conditions.

### 2.2 National Parks and Wildlife Act 1974

The Office of Environment and Heritage (OEH) is primarily responsible for regulating the management of Aboriginal cultural heritage in New South Wales under the *National Parks and Wildlife Act 1974* (the NPW Act). The NPW Act is accompanied by the *National Parks and Wildlife Regulation 2009* (the Regulation), the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a) and other industry-specific codes and guides.

The NPW Act defines an Aboriginal object as:

*..any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales.*

Under Section 84 of the NPW Act, an Aboriginal Place must be declared by the Minister as a place that, in the opinion of the Minister, is or was of special significance with respect to Aboriginal culture. Section 86(4) of the NPW Act states that a person must not harm or desecrate an Aboriginal place.

In accordance with Section 86(1) of the NPW Act, it is an offence to harm or desecrate a known Aboriginal object, whilst it is also an offence to harm an Aboriginal object under Section 86(2). Harm to an object or place is defined as any act or omission that:

- destroys, defaces or damages an object or place, or
- in relation to an object – moves the object from the land on which it had been situated, or
- is specified by the regulations, or
- causes or permits the object or place to be harmed in a manner referred to in paragraph (a), (b) or (c),

but does not include any act or omission that:

- desecrates the object or place (noting that desecration constitutes a separate offence to harm), or
- is trivial or negligible, or
- is excluded from this definition by the regulations.



Section 87(1) of the NPW Act specifies that it is a defence to prosecution under Section 86(1) and Section 86(2) if the harm or desecration of an Aboriginal object was authorised by an AHIP and the activities were carried out in accordance with that AHIP. As discussed in **Section 2.1**, the provisions of the EP&A Act provide an exemption from the requirement for an AHIP under the NPW Act for activities approved as State Significant Infrastructure (SSI), as is the case with the proposal. However, the other provisions of the NPW Act are still applicable.

Any Aboriginal cultural heritage and archaeological assessment in NSW is required to be undertaken in accordance with the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW now OEH 2010), the *Code of Practice for Archaeological investigation of Aboriginal objects* (DECCW now OEH 2010) and the *Guide to investigating assessing and reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011).

## **2.3 Environment Protection and Biodiversity Conservation Act 1999**

To determine if there were any federally listed Aboriginal heritage sites or places present within the proposal site, a search was undertaken of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool (refer to **Appendix 2**). The proposal site is adjacent to one property (Moree Baths and Swimming Pool) that is listed on the National Heritage List due to its historical value in association with the Aboriginal civil rights movement. The listed item is located outside the proposal site and will not be subject to impact by the proposal (refer to Umwelt 2017b for further information). There are consequently no requirements under the EPBC Act in relation to this Aboriginal cultural heritage and archaeological assessment.

## 3.0 Aboriginal party consultation

Consultation with Aboriginal parties is an integral part of identifying and assessing the significance of Aboriginal objects and/or places, and determining and carrying out appropriate strategies to mitigate impacts upon Aboriginal heritage. In accordance with current requirements and expectations, consultation with Aboriginal parties regarding the proposal was undertaken in accordance with Part 8A, Clause 80C of the NPW Regulation and the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010). The documentation of the outcomes of Aboriginal party consultation in this report reflects the requirements of the *Guide to investigating assessing and reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011).

It is noted that the NPW Regulation and the *Aboriginal cultural heritage consultation requirements for proponents* identify that, in some cases, 'information required for decision making' in relation to the assessment of Aboriginal cultural heritage will be held by Aboriginal people who are Registered Aboriginal Owners (in accordance with the provisions of the *NSW Aboriginal Land Rights Act 1983*) or Native title holders or registered native title claimants. The Office of the Registrar did not identify any Registered Aboriginal Owners that should be contacted regarding the proposal. The National Native Title Tribunal advised that there is a registered Native Title claim that includes the entirety of the proposal site. The claim (NC2011/006) is in the name of the Gomeroi People and includes 19 listed applicants, many of whom registered an interest in the proposal as individuals or as part of other organisations. Contact was also made in writing, by email and by telephone to Sam Hegney Solicitors (listed on the claim as the relevant address for service) however no direct response was received. Over the course of ongoing consultation, a number of the registered parties identified themselves as registered native title claimants, as referenced in **Table 3.1**.

The consultation process is summarised in **Table 3.1**. All correspondence referenced in the table is included in **Appendix 3** and was prepared with reference to the specifications of Clause 80C of the NPW Regulation and the *Aboriginal cultural heritage consultation requirements for proponents*. As a result of this process, 38 Aboriginal parties registered an interest in ongoing consultation regarding the proposal prior to the specified closing date for the registration of interest. These parties are listed below.

1. Gomeroi Service Provider Pty Ltd (Anthony Munro lodged registration and is a named applicant on Gomeroi People registered Native Title claim)
2. Alfred Priestley (named applicant on Gomeroi People registered Native Title claim)
3. Gamarada Consulting Australia
4. Cutmore Family Clan Group
5. Connor Oslizlok
6. Braiden Tighe
7. Loretta Tighe
8. Jaihuna Groves
9. Jason Groves
10. Geoffrey Tighe

11. Dorothy Tighe
12. Kawul Cultural Services
13. Wurrumay Consultant
14. Huckada Dreamin Heritage Group
15. Madelaine McGrady (named applicant on Gomeroi People registered Native Title claim)
16. Kullila Site Consultants
17. National Koori Site Management
18. Dhinawan-Dhigaraa Culture and Heritage Pty Limited
19. Michael Long
20. Cheryl Barnes
21. David Nichols
22. Brian Draper
23. Kevin Sampson
24. Natasha Talbott
25. T&G Culture Consultants
26. Bigundi Biame Gunnedarr Traditional People
27. Wayne Nean
28. Ronald Long
29. AT Gomilaroi Cultural Consultancy
30. Cacatua General Services
31. AGA Services
32. Hazel Collins
33. DFTV Enterprises
34. Toomelah Local Aboriginal Land Council
35. Steve Talbott
36. Moree Local Aboriginal Land Council
37. Natasha Rodgers
38. Yvonne Rodgers.

Following the closing date for registration of interest (and the closing date for comment on the assessment methodology) an additional registration of interest was received from Gomery. Subsequent to this and to the provision of Expression of Interest documents for participation in site survey (as will be discussed below) additional registrations of interest were received from Gringai Aboriginal Corporation, Deslee Matthews, Lyall Munro, Angus Binge, Cliff Copeland, Mandy Hicks and Carl Blair.

Following completion of the survey, an additional registration of interest was received from Narrabri LALC. These late registrants were each consulted regarding the assessment from the time at which they registered their interest, bringing the total number of registered parties to 47.

**Table 3.1 Summary of Aboriginal Party Consultation**

Date	Type of Consultation	Relevant Party	Outcome
14/12/15 & 01/01/15	Public advertisement providing notification of assessment and opportunity to register interest for consultation	Advertisement placed in The Border News	Registrations of interest received from: <ul style="list-style-type: none"> <li>Gomeroi Service Provider Pty Ltd (Anthony Munro lodged registration and is a named applicant on Gomeroi People registered Native Title claim)</li> <li>Alfred Priestley (named applicant on Gomeroi People registered Native Title claim)</li> <li>Gamarada Consulting Australia</li> <li>Cutmore Family Clan Group</li> <li>Connor Oslizlok</li> <li>Braiden Tighe</li> <li>Loretta Tighe</li> <li>Jaihuna Groves</li> <li>Jason Groves</li> <li>Geoffrey Tighe</li> <li>Dorothy Tighe</li> <li>Kawul Cultural Services</li> <li>Wurrumay Consultant</li> <li>Huckada Dreamin Heritage Group</li> <li>Madelaine McGrady (named applicant on Gomeroi People registered Native Title claim)</li> <li>Kullila Site Consultants</li> <li>National Koori Site Management</li> <li>Dhinawan-Dhigaraa Culture and Heritage Pty Limited.</li> </ul>
12/12/15 & 19/12/15	Public advertisement providing notification of assessment and opportunity to register interest for consultation	Advertisement placed in The Australian	
16/12/15	Public advertisement providing notification of assessment and opportunity to register interest for consultation	Advertisement placed in the Koori Mail	

Date	Type of Consultation	Relevant Party	Outcome
9/12/15	Provision of letter requesting identification of Aboriginal parties with cultural knowledge/interest in the proposal site	OEH (North-West Region)	Response received 23/02/16
		Narrabri Local Aboriginal Land Council	No response
		Moree Local Aboriginal Land Council	Registration of interest received 6/4/16
		Toomelah Local Aboriginal Land Council	Registration of interest received 21/3/16
		Office of the Registrar Aboriginal Land Rights Act 1983	No response
		National Native Title Tribunal	Email response received 18/12/15 including a letter identifying a Registered Native Title claim (NC2011/006 Gomeroi People) over the proposal site
		NTSCorp Limited	No response
		Narrabri Shire Council	Email response received 15/12/15 including a letter identifying a number of Aboriginal parties to be contacted (see below)
		Moree Plains Shire Council	No response
		Gwydir Shire Council	No response
		North West Local Land Services	No response
18/02/16	Letters sent to Aboriginal parties identified by Narrabri Shire Council providing notification of assessment and opportunity to register interest for consultation	Brenda and James Trindall	No response
		Lyn Trindall	No response
		Steven Booby	No response
		Craig Trindall	No response
		Jacqueline Jones	No response

Date	Type of Consultation	Relevant Party	Outcome
		Helen Wenner	No response
		Clifford Toomey	No response
		David Nichols	Registration of interest received 4/3/16
		Reenie Adams	No response
		Debra Hanes	No response
9/12/16	Letters sent to Aboriginal parties identified by OEH providing notification of assessment and opportunity to register interest for consultation	Alison Sampson	No response
		AT Gomilaroi Cultural Consultancy	Registration of interest received 10/3/16
		Bigundi Biame Gunnedarr Traditional People	Registration of interest received 7/3/16
		BJC Cultural Management	No response
		Brent Mathews	No response
		Brian Draper	Registration of interest received 4/03/16
		Bunda Consultants	No response
		Christine Archbold	No response
		Clifford Matthews	No response
		Darrell Mathews	No response
		DFTV Enterprises	Registration of interest received 12/3/16
		Donna Moodie	No response
		Elli Lewis	No response
		Esther Tighe	No response



Date	Type of Consultation	Relevant Party	Outcome
		Cacatua Culture Consultants	Registration of interest received 10/3/16
		Gomeroi Murri Ganuurr Yuuray Wadi Palinka	No response
		Gomeroi Narrabri Aboriginal Corporation	No response
		Gunida Gunyah	No response
		Hazel Collins	Registration of interest received 10/3/16
		Heilamon Cultural Consultants	No response
		Jason Wilson	No response
		Jodie McKinnon	No response
		John Matthews	No response
		Joshua Matthews	No response
		Justin Matthews	No response
		Kevin Sampson	Registration of interest received 4/3/16
		KL KG Saunders Trading Service	No response
		Lorraine Towney	No response
		Luke Cameron Cultural Management	No response
		Mavonia Welsh	No response
		ME Griffiths Cultural Management	No response
		Michael Long	Registration of interest received 3/3/16

Date	Type of Consultation	Relevant Party	Outcome
		Michelle Saunders	No response
		Min Min Aboriginal Corporation	No response
		Moree LALC	Registration of interest received 6/4/16
		Mungindi LALC	No response
		Narrabri LALC	No response
		Natasha Rodgers	Registration of interest received 7/3/16
		Nyakka Aboriginal Corporation	No response
		Paul Moodie	No response
		Ray Tighe	No response
		Robert Miller	No response
		Rodney Mathews	No response
		Ron Smith	No response
		Ronald Long	Registration of interest received 10/3/16
		Roslyn Smith	No response
		Scott Smith	No response
		Sonny Fitzroy	No response
		Steve Saunders	No response
		T&G Culture Consultants	Registration of interest received 7/03/16 (Greg Griffiths is a named applicant on Gomerai People registered Native Title claim)
		Tania Mathews	No response

Date	Type of Consultation	Relevant Party	Outcome
		Terry Hie Hie Aboriginal Co-op	No response
		Tracy Wotley	No response
		Troy Silver	No response
4/03/16	Registration of interest (telephone)	Cheryl Barnes	Registration of interest received 4/3/16
		David Nichols	Registration of interest received 4/3/16
6/3/16	Registration of interest (email)	Natasha Talbott	Registration of interest received 6/3/16
7/3/16	Registration of interest (email)	Yvonne Rodgers	Registration of interest received 7/3/16
9/3/16	Registration of interest (telephone)	Wayne Nean	Registration of interest received 9/3/16
10/3/16	Registration of interest (email)	AGA Services	Registration of interest received 10/3/16
23/3/16	Registration of interest (telephone)	Steve Talbott	Registration of interest received 23/3/16
2/4/16	Provision of draft assessment methodology and meeting invite to registered Aboriginal parties for review and comment (closing date for comment 25/05/16)	Gomeroi Service Provider	No written response to draft assessment methodology provided
		Alfred Priestley	No written response to draft assessment methodology provided
		Gamarada Consulting Australia	No written response to draft assessment methodology provided
		Cutmore Family Clan Group	No written response to draft assessment methodology provided
		Connor Oslizlok	No written response to draft assessment methodology provided
		Braiden Tighe	No written response to draft assessment methodology provided
		Loretta Tighe	No written response to draft assessment methodology provided

Date	Type of Consultation	Relevant Party	Outcome
		Jaihuna Groves	No written response to draft assessment methodology provided
		Jason Groves	No written response to draft assessment methodology provided
		Geoffrey Tighe	No written response to draft assessment methodology provided
		Dorothy Tighe	No written response to draft assessment methodology provided
		Kawul Cultural Services	No written response to draft assessment methodology provided
		Wurrumay Consultant	No written response to draft assessment methodology provided
		Huckada Dreamin Heritage Group	No written response to draft assessment methodology provided
		Madelaine McGrady	No written response to draft assessment methodology provided
		Kullila Site Consultants	No written response to draft assessment methodology provided
		National Koori Site Management	No written response to draft assessment methodology provided
		Dhinawan-Dhigaraa Culture and Heritage Pty Limited	No written response to draft assessment methodology provided
		Michael Long	No written response to draft assessment methodology provided
		Cheryl Barnes	No written response to draft assessment methodology provided
		David Nichols	No written response to draft assessment methodology provided
		Brian Draper	No written response to draft assessment methodology provided
		Kevin Sampson	No written response to draft assessment methodology provided
		Natasha Talbott	No written response to draft assessment methodology provided
		T&G Culture Consultants	No written response to draft assessment methodology provided
		Bigundi Biame Gunnedarr Traditional People	No written response to draft assessment methodology provided

Date	Type of Consultation	Relevant Party	Outcome
		Wayne Nean	No written response to draft assessment methodology provided
		Ronald Long	No written response to draft assessment methodology provided
		AT Gomilaroi Cultural Consultancy	No written response to draft assessment methodology provided
		Cacatua General Services	No written response to draft assessment methodology provided
		AGA Services	No written response to draft assessment methodology provided
		Hazel Collins	No written response to draft assessment methodology provided
		DFTV Enterprises	No written response to draft assessment methodology provided
		Toomelah Local Aboriginal Land Council	No written response to draft assessment methodology provided
		Steve Talbott	No written response to draft assessment methodology provided
		Moree LALC	No written response to draft assessment methodology provided
10/5/16	Aboriginal party consultation meeting (Moree)	Cutmore Family Clan Group	Meeting attended by Edna Craigie, Maria Cutmore, Terry Carter, Jye Carter, Karen Craigie, Gloria French, Betty Carter and Mrs Porter
		Gamarada Consulting	Meeting attended by Charlie Winter, Tony Simmons, Robert Walford and Clive Ahoy Kelly
		Wayne Nean	Meeting attended by Wayne Nean
10/5/16	Aboriginal party consultation meeting (Narrabri)	AGA Services	Meeting attended by Donna Sampson
		Cacatua Cultural Services	Meeting attended by George Sampson
		Brian Draper	Meeting attended by Brian Draper
		Michael Long	Meeting attended by Michael Long

Date	Type of Consultation	Relevant Party	Outcome
18/5/16	Registration of interest (telephone)	Gomery (David Horton)	Late registration of interest accepted.
30/05/16	Registered Aboriginal parties invited to submit an Expression of Interest for engagement to undertake survey	Gomeroi Service Provider Pty Ltd	EOI provided (Gomeroi Country Services)
		Alfred Priestley	EOI provided (Gomeroi Country Services)
		Gamarada Consulting Australia	
		Cutmore Family Clan Group	
		Connor Oslizlok	
		Braiden Tighe	
		Loretta Tighe	
		Jaihuna Groves	
		Jason Groves	
		Geoffrey Tighe	
		Dorothy Tighe	
		Kawul Cultural Services	EOI provided
		Wurrumay Consultant	EOI provided
		Huckada Dreamin Heritage Group	EOI provided
		Madelaine McGrady	EOI provided
		Kullila Site Consultants	EOI provided
		National Koori Site Management	EOI provided
		Dhinawan-Dhigaraa Culture and Heritage Pty Limited	

Date	Type of Consultation	Relevant Party	Outcome
		Michael Long	EOI provided
		Cheryl Barnes	
		David Nichols	
		Brian Draper	EOI provided
		Kevin Sampson	EOI provided
		Natasha Talbott	
		T&G Culture Consultants	EOI provided
		Bigundi Biame Gunnedarr Traditional People	
		Wayne Nean	
		Ronald Long	EOI provided
		AT Gomilaroi Cultural Consultancy	EOI provided
		Cacatua General Services	EOI provided
		AGA Services	EOI provided
		Hazel Collins	
		DFTV Enterprises	EOI provided
		Toomelah Local Aboriginal Land Council	EOI provided
		Steve Talbott	EOI provided (Gomeroi Namoi Traditional Owners)
		Moree LALC	
		Natasha Rodgers	EOI provided



Date	Type of Consultation	Relevant Party	Outcome
		Yvonne Rodgers	EOI provided
		Gomery	EOI provided
8/6/16	Registration of interest (email)	Gringai Aboriginal Corporation	Registration of interest received outside the specified registration period. Gringai Aboriginal Corporation advised that would be included in ongoing consultation but will not be invited to submit Expression of Interest for engagement for archaeological survey
15/06/16	Registration of interest (telephone)	Deslee Matthews	Registration of interest received outside the specified registration period. Deslee was advised that she would be included in ongoing consultation but will not be invited to submit an Expression of Interest for engagement for archaeological survey
20/06/16	Registration of interest (telephone)	Lyall Munro	Registration of interest received outside the specified registration period. Lyall was advised that he would be included in ongoing consultation but will not be invited to submit an Expression of Interest for engagement for archaeological survey
02/07/16	Registration of interest (telephone)	Angus Binge	Angus called to advise he is an Elder of the Moree area and wants to be involved in the N2NS project. I advised the situation regarding late registrations and that further fieldwork may be available depending on the survey outcomes. Clifford Copeland is another Elder who should be involved.
24/07/16	Registration of interest (telephone)	Mandy Hicks	Registration of interest received outside the specified registration period. Mandy was advised that she would be included in ongoing consultation but will not be invited to submit an Expression of Interest for engagement for archaeological survey
16/09/16	Registration of interest	Carl Blair	Carl Blair contacted Jon Bok by telephone to provide registration of interest for the project
10/10/16 & 11/10/16	In-field consultation as component of survey	T&G Consultants	Survey undertaken by Tony Griffiths
		Kullila Site Consultants	Survey undertaken by Maria Maher
		National Koori Site Management	Survey undertaken by Kirstie Butlon

Date	Type of Consultation	Relevant Party	Outcome
		AT Gomilaroi Cultural Consultancy	Survey undertaken by Aaron Talbott
		Ronald Long	Survey undertaken by Ronald Long
		Gomeroi Country Services	Survey undertaken by Clifford Toomey (named applicant on Gomeroi People registered Native Title claim)
12/10/16 & 13/10/16	In-field consultation as component of survey	Kevin Sampson	Survey undertaken by Kevin Sampson
		Natasha Rodgers	Survey undertaken by Natasha Rodgers
		Yvonne Rodgers	Survey undertaken by Loretta Long and Shirley Talbott
14/10/16 & 17/10/16	In-field consultation as component of survey	Gomeroi Country Services (entity provided services to a number of RAPs)	Alfred Priestly (named applicant on Gomeroi People registered Native Title claim) unable to undertake fieldwork on 14/10 but present on 17/10
		DFTV Enterprises	Survey undertaken by Derrick Vale, Steven Milne and Susan Cutmore
18/10/16 & 19/10/16	In-field consultation as component of survey	Gomeroi Country Services	Survey undertaken by Tony Munro (named applicant on Gomeroi People registered Native Title claim)
		Cacatua General Services	Survey undertaken by Donna Sampson
		AGA Services	Survey undertaken by George Sampson, Ashley Sampson and Adam Sampson
20/10/16 & 21/10/16	In-field consultation as component of survey	Gomeroi Country Services	Survey undertaken by Lyall Munro Jnr (named applicant on Gomeroi People registered Native Title claim)
		Gomery	David Horton unable to attend survey at late notice
		Kawul Cultural Services	Survey undertaken by Vicky Slater
		Wurramay Consultants	Survey undertaken by Rod Hickey
24/10/16 & 25/10/16	In-field consultation as component of survey	Gomeroi Country Services	Survey undertaken by Madelaine McGrady (named applicant on Gomeroi People registered Native Title claim), Elaine Duncan, Ronald Blair and Hughie Duncan

Date	Type of Consultation	Relevant Party	Outcome
26/10/16 & 27/10/16	In-field consultation as component of survey	Gomerioi Country Services	Survey undertaken by Elaine Binge (named applicant on Gomerioi People registered Native Title claim)
		Michael Long	Survey undertaken by Michael Long
		Brian Draper	Survey undertaken by Brian Draper
		Gomerioi Namoi Traditional Owners	Allan Talbott and Giran King unable to attend survey at late notice
		Toomelah Local Aboriginal Land Council	Survey undertaken by Lance Dennison
3/11/16	Registration of interest	Narrabri LALC	Lynn Trindall contacted Jon Bok by telephone to provide registration of interest for the project

### 3.1 Consultation regarding assessment methodology

A draft assessment methodology for this assessment and an invitation to attend a meeting in either Moree or Narrabri was provided to all registered Aboriginal parties on 2 April 2016. The draft methodology included the following information:

- a description of Inland Rail and the Narrabri to North Star proposal
- summary of the proposed works, including works within and outside the current rail corridor
- an overview of the assessment process, including all key assessment milestones and steps with prospective dates
- identification of key consultation events linked to specific phases of the Aboriginal cultural heritage and archaeological assessment process
- provision of opportunity to provide specific cultural information relevant to the proposal and to identify how this information should be presented/used
- a draft survey methodology
- an outline of the information to be included in a draft Aboriginal cultural heritage and archaeological assessment report

It was requested that all Aboriginal parties provide comment on the proposed assessment methodology, particularly in relation to the Aboriginal cultural values of the proposal site and the way in which the assessment may or may not contribute to documenting these values and assisting in their management. In order to assist in this process, a meeting was held in Moree and in Narrabri. At these meetings, the information included in the draft assessment methodology was reviewed and discussed and opportunities provided to Aboriginal parties to provide comment. The Aboriginal party representatives that attended the meetings are identified in **Table 3.2** with minutes from these meetings provided in **Appendix 3**.

**Table 3.2** Attendance at assessment methodology meetings

Meeting	Registered Aboriginal party	Representative attending
Moree (10/5/16)	Cutmore Family Clan Group	Edna Craigie, Maria Cutmore, Terry Carter, Jye Carter, Karen Craigie, Gloria French, Betty Carter and Mrs Porter
	Gamarada Consulting	Charlie Winter, Tony Simmons, Robert Walford and Clive Ahoy Kelly
	Wayne Nean	Wayne Nean
Narrabri (10/5/16)	AGA Services	Donna Sampson
	Cacatua Cultural Services	George Sampson
	Brian Draper	Brian Draper
	Michael Long	Michael Long

The key matter raised during the meetings related to the proposed survey methodology, including the extent of proposed survey coverage. It was discussed that the survey methodology involved targeted inspection of areas of likely archaeological potential and locations of previously recorded sites but that the survey would be undertaken to ensure that an adequate sample of the proposal site and additional assessment areas was inspected. It was also noted that Aboriginal parties would have the opportunity during the survey to identify any areas of potential cultural sensitivity that they may wish to inspect.

During the meetings it was identified that the process for engagement of Aboriginal parties would be undertaken following an Expression of Interest process (as discussed in **Section 3.2**) and that it may be undertaken on a roster system. The anticipated duration of the survey roster was also identified.

Aboriginal parties at the meetings also identified that the proposal has the capacity to provide employment to local Aboriginal people during the construction phase.

No further comment was received from the remaining registered Aboriginal parties in relation to the draft methodology.

## 3.2 Aboriginal party participation in survey

Prior to the commencement of survey, ARTC (in consultation with GHD) contacted all registered Aboriginal parties (as registered prior to 30 May 2016) to request expressions of interest in being engaged to undertake the survey work. The requests for expressions of interest included information on key criteria that would inform the selection of parties/individuals to undertake the survey work. These criteria were prepared with the aspects of the *Aboriginal cultural heritage consultation requirements for proponents* that reference the identification of Aboriginal parties with appropriate cultural heritage knowledge to inform decision making. The criteria also included the capability, skills, experience and fitness of the nominated personnel to undertake the required survey tasks as well as other aspects relating to safety and commercial considerations.

All eligible Aboriginal parties who submitted a complete Expression of Interest document (including provision of required insurance information) within the required timeframe were invited to participate in the survey. Survey participants are named in **Table 3.3** below.

**Table 3.3 Aboriginal party participants in survey**

Date	Registered Aboriginal party	Representatives
10/10/16 & 11/10/16	T&G Consultants	Tony Griffiths
	Kullila Site Consultants	Maria Maher
	National Koori Site Management	Kirstie Butlon
	AT Gomilaroi Cultural Consultancy	Aaron Talbott
	Ronald Long	Ronald Long
	Gomeroi Country Services	Clifford Toomey (named applicant on Gomeroi People registered Native Title claim)

Date	Registered Aboriginal party	Representatives
12/10/16 & 13/10/16	Kevin Sampson	Kevin Sampson
	Natasha Rodgers	Natasha Rodgers
	Yvonne Rodgers	Loretta Long and Shirley Talbott
14/10/16 & 17/10/16	Gomeroi Country Services	Alfred Priestly (named applicant on Gomeroi People registered Native Title claim) unable to undertake survey on 14/10 but present on 17/10
	DFTV Enterprises	Derrick Vale, Steven Milne and Susan Cutmore
18/10/16 & 19/10/16	Gomeroi Country Services	Tony Munro (named applicant on Gomeroi People registered Native Title claim)
	Cacatua General Services	Donna Sampson
	AGA Services	George Sampson, Ashley Sampson and Adam Sampson
20/10/16 & 21/10/16	Gomeroi Country Services	Lyall Munro Jnr (named applicant on Gomeroi People registered Native Title claim)
	Gomery	David Horton unable to attend survey at late notice
	Kawul Cultural Services	Vicky Slater
	Wurramay Consultants	Rod Hickey
24/10/16 & 25/10/16	Gomeroi Country Services	Madelaine McGrady (named applicant on Gomeroi People registered Native Title claim), Elaine Duncan, Ronald Blair and Hughie Duncan
26/10/16 & 27/10/16	Gomeroi Country Services	Elaine Binge (named applicant on Gomeroi People registered Native Title claim)
	Michael Long	Michael Long
	Brian Draper	Brian Draper
	Gomeroi Namoi Traditional Owners	Allan Talbott and Giran King unable to attend survey at late notice
	Toomelah Local Aboriginal Land Council	Lance Dennison

During the survey, all participants were briefed on the proposed survey plan for the day and were invited to identify any key areas where they wished to undertake survey. All participants were consulted regarding proposed mitigation and management strategies for identified archaeological sites and/or areas of potential archaeological deposit (PAD). Survey participants were also invited to provide comments on any cultural values associated with the proposal site or within the vicinity of the proposal site more broadly.

### 3.3 Outcomes of in-field consultation

This section documents feedback received from Aboriginal party representatives during the survey.

During the survey, a number of Aboriginal party representatives including Ronnie Long, Brian Draper, Michael Long and Elaine Binge emphasised the Aboriginal cultural values associated with resource plants. These values were expressed not just in terms of the utility value of the relevant resource but also the way in which knowledge of flora resources contributed to Aboriginal people's understanding of Country, as passed on through oral tradition including stories in which key resources feature. These stories were not disclosed in the draft report in order to avoid any cultural impropriety however Aboriginal parties were invited to identify where such information should be included. No comments to this effect were received in response to the draft report. A range of different plant resources were referenced, as briefly discussed in **Section 4.1.2**. The importance of protecting and managing these resources was emphasised by Aboriginal parties.

The lack of visibility due to vegetation coverage was commented on by the majority of Aboriginal party representatives. In particular, Alf Priestly requested the opportunity to undertake additional inspections on key watercourses (namely the Mehi and Gwydir Rivers) and at the location of previously recorded sites where surface artefacts were no longer visible (including AHIMS sites #2-4-0073, #10-3-0032 and #10-3-0035). Alf suggested that the inspection should occur when vegetation coverage is reduced, either after prolonged dry conditions or following vegetation removal during the construction phase (should the proposal proceed). The provision of the opportunity to inspect following vegetation removal was also requested by a number of other Aboriginal parties in relation to the Camurra bypass section of the proposal.

Several of the Aboriginal party representatives also requested that, if any works are required outside the proposal site and additional assessment areas, the opportunity should be provided to undertake additional inspections of any areas not surveyed as part of this assessment.

In terms of locations with specific cultural importance, Alf Priestly, Tony Munro and Lyall Munro all identified that the Gwydir River (often referred to as the Big River) was of particular importance to Aboriginal people as a camping location due to the permanence of its water supply and the associated resources. For this reason, it was emphasised that from a cultural perspective, the potential for archaeological material to be present at depth within terrace and creek bank landforms bordering the Big River should be taken into consideration and that excavations should be undertaken in these landforms where the impacts of the proposal extend below the depth of current disturbance. Factors relating to further investigations in these landforms are discussed in **Section 9.2**.

The former Steel Bridge Camp (details of this location are provided in **Section 5.2.1**) was identified by several of the Aboriginal party representatives as having very high Aboriginal cultural value due to its use as an alternate camp to missions and reserves (including within contemporary memory). The Steel Bridge Camp was identified as a location that was home for many Aboriginal families, including those associated with working on the railway. The conflict between Aboriginal families wanting to remain at the Steel Bridge Camp and authorities attempting to remove them is very important to the Aboriginal history of the Moree area. It was recommended that the current bridge should be retained and that any adaptive reuse of the bridge should include interpretive information referring to its Aboriginal values. At the time of the survey, design plans had not been finalised and the option to remove the Steel Bridge (Mehi River bridge) was not discussed. When the in-field comments were provided by Aboriginal party representatives regarding the Mehi River bridge, it was understood that the bridge would be retained. Following the completion of the survey and the completion of additional design work it was identified that this would not be possible. As part of the provision of the draft of this report to the registered Aboriginal parties for review and comment it was requested that Aboriginal party representatives take this additional information about the proposal design into account when providing comment on this draft report. No further comments were received from the registered Aboriginal parties in response to the draft report.

The outcomes of in-field consultation have been taken into consideration in developing the management and mitigation strategies discussed in this report.

### **3.4 Consultation regarding draft Aboriginal cultural heritage and archaeological assessment report**

A copy of the draft Aboriginal cultural heritage and archaeological assessment report was provided to all registered Aboriginal parties in June 2017 with an invitation to review and comment on all aspects of the document. This included the additional information about the design which dictates that it will not be possible to retain the Mehi River bridge (Steel Bridge).

ARTC provided copies of the draft report to all registered Aboriginal parties with a cover letter inviting feedback. ARTC subsequently attempted to contact all registered Aboriginal parties by telephone to provide a reminder of the closing date for comment on the draft report. No written comments or detailed verbal comments were received from the registered Aboriginal parties.

### **3.5 OEH consultation**

Initial consultation with OEH was undertaken in the form of notification letters provided to the OEH regional office, as described in **Table 3.1**. In addition, ARTC attended a meeting on 16 August 2016 with Phil Purcell (Regional Archaeologist) to discuss the proposal.



## 4.0 Environmental context

The decisions that people make regarding such things as where they live, the range of resources they use and other aspects of daily life may be influenced by the environment in which they live. The preservation and visibility of sites is also affected by environmental factors such as vegetation cover, past land-use and disturbance. A review of the environmental context is therefore integral to considerations of site visibility, preservation and occurrence within the proposal site.

In order to facilitate discussion of the key environmental factors, it is advantageous to divide the proposal site into units with similar environmental characteristics. For the purposes of this assessment (and to ensure comparability with the Biodiversity Assessment Report – Umwelt 2017a), the proposal site is divided into its relevant Mitchell Landscape units, as shown in **Figure 4.1** and **Figure 4.2**. Information on key environmental characteristics of each unit is presented in **Table 4.1**.

As shown in **Figure 4.1** and **Figure 4.2**, the majority of the proposal site is located within the Gwydir Alluvial Plains landscape, with the Gwydir Floodplains and Channels, the Croppa Creek Floodplains and Channels and the Namoi Channels and Floodplains comprising relatively discrete areas bordering specific watercourses (the Gwydir River, Croppa Creek and the Namoi River respectively). The majority of the northern portion of the proposal site is within the Croppa Creek Clay Plains, with only small components of the proposal site located in the Bellata Sands, Kaputar Slopes and Liverpool Alluvial Plains and Yallaro Basalts.

Key watercourses intersected by the proposal site are identified in **Figure 4.1** and **Figure 4.2**. Strahler stream order is provided to give an indication of the extent of catchment (and typically the likely reliability) of the watercourse, however this will be discussed further below with reference to resource availability. Note that detailed maps of the proposal site are provided in **Appendix 1**, with locations of these detailed maps shown in **Figure 4.3**.

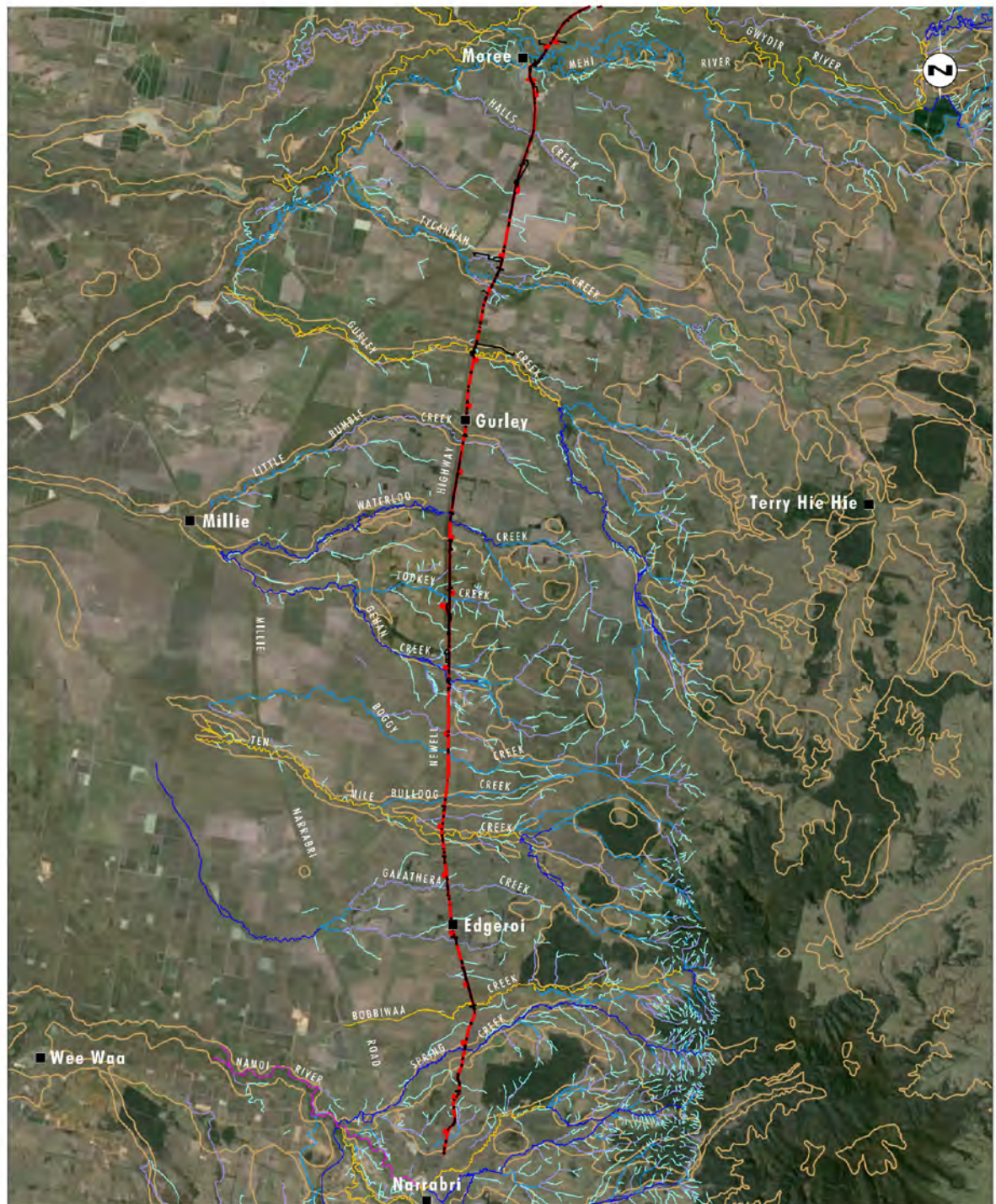


Image Source: Google Earth (2013)  
Data Source: Geoscience Australia (2009), Parsons Brinckerhoff (2014), Umwelt (2016)

0 5 10 20 km  
1:450 000

#### Legend

- |  |               |
|--|---------------|
| <span style="border: 1px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order: |
| <span style="border: 1px solid black; padding: 2px;"> </span> Additional Assessment Area | 1st Order     |
| <span style="border: 1px solid yellow; padding: 2px;"> </span> Mitchell Landscapes       | 2nd Order     |
| ■ Town Location  | 3rd Order     |
|  | 4th Order     |
|  | 5th Order     |
|  | 6th Order     |

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20161215 8:59

FIGURE 4.1  
Narrabri to Moree  
Stream Order and  
Mitchell Landscape Areas









Image Source: Google Earth (2013)  
Data Source: Parsons Brinckerhoff (2014), Umwelt (2016)

0 10 20 40 km  
1:750 000

#### Legend

- Proposal Site
- Additional Assessment Area
- Town Location

FIGURE 4.3

Narrabri to North Star  
Figures Map

**Table 4.1 Environmental characteristics of Mitchell Landscapes within proposal site and assessment areas**

Mitchell Landscape	Soils	Topography	Key watercourses within proposal site/additional assessment areas	Key vegetation communities
Bellata Sands	Red-brown to red-yellow earths, uniform or gradational profiles.	Westward sloping plains and downs with ephemeral creek channels on Tertiary poorly cemented gravels, sand and clay. General elevation 220 to 260 m with a local relief of <10 m.	Gehan Creek (1 <sup>st</sup> order) Tookey Creek South (1 <sup>st</sup> order) Tookey Creek North (3 <sup>rd</sup> order) Tookey Creek tributary (1 <sup>st</sup> order)	Belah ( <i>Casuarina cristata</i> ) woodlands with grasses and patches of bimbale box ( <i>Eucalyptus populnea</i> ).
Croppa Clay Plains	Deep grey to black clay uniform cracking soils of moderate fertility	Extensive alluvial fans and rolling downs on Quaternary sediments and planar surfaces of Cretaceous calcareous sandstones and shales on either side of Croppa and Gil Gil Creeks draining from the Yallaroi Basalts Ecosystem. General elevation 275-230 m with a local relief to 5 m.	Marshall Ponds Creek tributary 1 (1 <sup>st</sup> order) Marshall Ponds Creek tributary 2 (1 <sup>st</sup> order) Unnamed drainage (2 <sup>nd</sup> order) Marshall Ponds Creek (2 <sup>nd</sup> order) Bunna Creek South (5 <sup>th</sup> order) Croppa Creek tributary (1 <sup>st</sup> order) Mungle Creek south (3 <sup>rd</sup> order) Mungle Creek north (1 <sup>st</sup> order)	Bimbale box ( <i>Eucalyptus populnea</i> ), belah ( <i>Casuarina cristata</i> ) woodlands, remnant brigalow ( <i>Acacia harpophylla</i> ) on heavier soils with gilgai. Patches of myall ( <i>Acacia pendula</i> ) and rosewood ( <i>Alectryon oleifolium</i> ) with grasses.
Croppa Creek Channels and Floodplains	Narrow levees with brown sandy clay and heavy grey clay.	Channels, floodplains, terraces and lagoons of Croppa Creek on Quaternary alluvium. General elevation 275-200 m with a local relief to 10 m.	Croppa Creek south (2 <sup>nd</sup> order) Croppa Creek (5 <sup>th</sup> order) Yallaroi Creek (4 <sup>th</sup> order) Tackinbri Creek (3 <sup>rd</sup> order)	Fringing river red gum ( <i>Eucalyptus camaldulensis</i> ) only a few trees wide in the channel and on levees extending to heavier soils on the floodplain with myall ( <i>Acacia pendula</i> ), rosewood ( <i>Alectryon oleifolium</i> ) and belah ( <i>Casuarina cristata</i> ) woodland.

Mitchell Landscape	Soils	Topography	Key watercourses within proposal site/additional assessment areas	Key vegetation communities
Gwydir Alluvial Plains	<p>Grey and brown silty clay deposited from suspended sediments in floodwater, often with gilgai.</p> <p>Elevated margins with red-brown texture-contrast soils.</p>	Holocene fluvial sediments of backplain and channelised backplain facies on the Gwydir River fan with a local relief of 2 to 5 m.	<p>Bobbiwaa Creek (5<sup>th</sup> order)</p> <p>Tahlee Creek South (2<sup>nd</sup> order)</p> <p>Tahlee Creek North (1<sup>st</sup> order)</p> <p>Galathera Creek (2<sup>nd</sup> order)</p> <p>10 Mile Creek North (2<sup>nd</sup> order)</p> <p>Boggy Creek South (3rd order)</p> <p>Boggy Creek North (2<sup>nd</sup> order)</p> <p>Myall Hollow Creek (4<sup>th</sup> order)</p> <p>Waterloo Creek (4<sup>th</sup> order)</p> <p>Tycannah Creek 1 (2<sup>nd</sup> order)</p> <p>Halls Creek (2<sup>nd</sup> order)</p> <p>Gwydir River tributary (2<sup>nd</sup> order)</p> <p>Gil Gil Creek (5<sup>th</sup> order)</p>	<p>Extensively cleared, cropped and grazed.</p> <p>Open to scattered myall (<i>Acacia pendula</i>), rosewood (<i>Alectryon oleifolius</i>), coolibah (<i>Eucalyptus microtheca</i>), belah (<i>Casuarina cristata</i>), wilga (<i>Geijera parviflora</i>), bimble box (<i>Eucalyptus populnea</i>), whitewood (<i>Atalaya hemiglaucula</i>), leopardwood (<i>Flindersia maculosa</i>), gidgee (<i>Acacia cambagei</i>), thorny saltbush (<i>Rhagodia spinescens</i>), Mueller's saltbush (<i>Atriplex muelleri</i>), wild orange (<i>Capparis mitchellii</i>), buck bush (<i>Salsola kali</i>), warrior bush (<i>Apophyllum anomalum</i>), budda (<i>Eremophila mitchellii</i>), nepine (<i>Capparis lasiantha</i>), Mitchell grasses (<i>Astrebla</i> sp.), neverfail (<i>Eragrostis setifolia</i>), goathead burr (<i>Sclerolaena bicornis</i>), copperburr (<i>Sclerolaena</i> sp.), and Warrego summer-grass (<i>Paspalidium jubiflorum</i>), on lower clay plains and drainage lines.</p> <p>Coolibah, black box (<i>Eucalyptus largiflorens</i>), river cooba (<i>Acacia stenophylla</i>), eurah (<i>Eremophila bignoniiflora</i>), and flowering lignum (<i>Eremophila polyclada</i>) in depressions and channels. Dense to moderate white cypress pine (<i>Callitris glaucophylla</i>), bimble box, leopardwood, belah (<i>Casuarina cristata</i>), wilga, sandplain wattle (<i>Acacia murrayana</i>), prickly wattle (<i>Acacia victoriae</i>), budda, quinine bush (<i>Alstonia constricta</i>), sandhill riceflower (<i>Pimelea penicillaris</i>) and grasses on sandy rises.</p>

Mitchell Landscape	Soils	Topography	Key watercourses within proposal site/additional assessment areas	Key vegetation communities
Gwydir Channels and Floodplains	Banks and plains with brown to grey silt and cracking grey or brown clay minor areas of red-brown texture-contrast soils on low levees.	Holocene fluvial sediments of channel and meander plain facies of the Gwydir River alluvial fan and distributary stream system, relief in the channels is 5 to 10 m. Stream flow is nearly permanent. Sinuous channels entrenched in the meander plain with a silt and clay suspended load and some fine sand bed load.	10 Mile Creek South (4 <sup>th</sup> order) Bulldog Creek (3rd order) Bumble Creek (2 <sup>nd</sup> order) Gurley Creek (5 <sup>th</sup> order) Tycannah Creek 2 (3 <sup>rd</sup> order) Tycannah Creek 3 (2 <sup>nd</sup> order) Tycannah Creek 4 (1 <sup>st</sup> order) Mehi River (major) Duffys Creek (4 <sup>th</sup> order) Skinners Creek (4 <sup>th</sup> order) Gwydir River (major)	Narrow fringing river red gum ( <i>Eucalyptus camaldulensis</i> ) and coolibah ( <i>Eucalyptus microtheca</i> ) with river paper-bark ( <i>Melaleuca trichostachya</i> ) along deeper main channels. Floodplains with scattered to moderate coolibah, black box ( <i>Eucalyptus largiflorens</i> ), whitewood ( <i>Atalaya hemiglauc</i> ), isolated rosewood ( <i>Alectryon oleifolius</i> ), belah ( <i>Casuarina cristata</i> ), river cooba ( <i>Acacia stenophylla</i> ), eurah ( <i>Eremophila bignoniiflora</i> ), lignum ( <i>Muehlenbeckia cunninghamii</i> ), nitre goosefoot ( <i>Chenopodium nitatriaceum</i> ), neverfail ( <i>Eragrostis setifolia</i> ), Warrego summer-grass ( <i>Paspalidium jubiflorum</i> ), windmill grasses ( <i>Chloris sp.</i> ), copperburr ( <i>Sclerolaena sp.</i> ) and forbs. Bimble box ( <i>Eucalyptus populnea</i> ) on western plains, yellow box ( <i>Eucalyptus melliodora</i> ) and rough-barked apple ( <i>Angophora floribunda</i> ) on the distal fan and higher red brown soil on terraces. Sparse gidgee ( <i>Acacia cambagei</i> ) on elevated areas.

Mitchell Landscape	Soils	Topography	Key watercourses within proposal site/additional assessment areas	Key vegetation communities
Kaputar Slopes	Shallow stony red-brown loam and clay loam in uniform profiles on basalt, yellow and yellow-brown texture-contrast profile on sandstone, deep black earths in lowest valleys.	Lower slopes of the Kaputar volcanic complex with radiating finger-like ridges capped by basalt over lower Permian and Triassic quartz. Sandstone, lithic sandstone, silty sandstone, conglomerate and thin coal measures. General elevation 300 to 500 m with a local relief of 80 m.		Kurrajong ( <i>Brachychiton populneus</i> ), yellow box ( <i>Eucalyptus melliodora</i> ), white box ( <i>Eucalyptus albens</i> ), rough-barked apple ( <i>Angophora floribunda</i> ) and Blakely's red gum ( <i>Eucalyptus blakelyi</i> ) on lower slopes and valleys.
Liverpool Alluvial Plains	Extensive black earths on low angle slopes. Deep black and brown cracking clays, alluvial soils and red or brown texture-contrast soils on slopes below sandstone.	Quaternary alluvial plains and outwash fans derived from Tertiary basalts. Permian and Triassic quartz sandstones with minor basalt caps. Undulating hills and sloping plains with alluvial channels and floodplains. General elevation 300 to 350 m with a local relief of <10 m.		Open grasslands of plains grass ( <i>Austrostipa aristiglumis</i> ), <i>Panicum sp.</i> , windmill grass ( <i>Chloris truncata</i> ) and blue grass ( <i>Dichanthium sericeum</i> ) on black earths with occasional myall ( <i>Acacia pendula</i> ), white box ( <i>Eucalyptus albens</i> ), yellow box ( <i>Eucalyptus melliodora</i> ), bimbale box ( <i>Eucalyptus populnea</i> ) and wilga ( <i>Geijera parviflora</i> ). River red gum ( <i>Eucalyptus camaldulensis</i> ) along streams.



Mitchell Landscape	Soils	Topography	Key watercourses within proposal site/additional assessment areas	Key vegetation communities
Namoi Channels and Floodplains	Banks and plains with brown to grey silt, cracking clay layers of red-brown sand.	Holocene fluvial sediments of channel and meander plain facies of the Namoi River alluvial fan and distributary stream system, relief in the channels 10 to 15 m. Stream flow is nearly permanent. Sinuous channels entrenched in the meander plain with a fine sand bed load.	Spring Creek (4 <sup>th</sup> order)	Fringing river red gum ( <i>Eucalyptus camaldulensis</i> ), black box ( <i>Eucalyptus largiflorens</i> ), river cooba ( <i>Acacia stenophylla</i> ) and coolibah ( <i>Eucalyptus microtheca</i> ) with understorey of grasses, and saltbushes ( <i>Atriplex</i> sp.).
Yallaroi Basalts	Shallow stony, red or brown, well-structured clays with high nutrient values. Similar but thicker soils on the slopes and the valley floors.	Rolling hills and flat top ridges on Tertiary basalt flows over Jurassic quartz and lithic sandstone. General elevation 300 to 530 m with a local relief of 100 m.		Woodland and open forest of; white box ( <i>Eucalyptus albens</i> ), with silver-leaved ironbark ( <i>Eucalyptus melanophloia</i> ), white wood ( <i>Atalaya hemiglauca</i> ), bull oak ( <i>Allocasuarina luehmannii</i> ), ironbarks ( <i>Eucalyptus</i> sp.), brown bloodwood ( <i>Corymbia trachyphloia</i> ) and brigalow ( <i>Acacia harpophylla</i> ) on alluvial clays. River red gum ( <i>Eucalyptus camaldulensis</i> ) on all streams.

## 4.1 Resource availability

The presence or absence of resources such as freshwater, food (both plant and animal) and materials suitable for artefact manufacture significantly contributed to the way in which Aboriginal people lived within the landscape and the resulting range of archaeological evidence. Key resources relevant to the current assessment are discussed below.

### 4.1.1 Water resources

Within western NSW (and indeed across much of NSW more generally), the availability of reliable sources of freshwater is viewed as one of the most important factors in the selection of areas for occupation by Aboriginal people. This relates not only to requirements for drinking water but also due to the range of plant and animal resources associated with creeks, swamps and drainage lines.

Gauging the reliability of watercourses as a source of freshwater is somewhat problematic given the impacts of historical land use, including construction of the existing rail line, with its associated culverts and drains. The consideration of stream order does provide a basis on which to compare watercourses, with creeks of a stream order of 4 or higher generally amongst the larger watercourses within the area. However, many of these higher order streams will still only have flow in a limited capacity except following rain and/or where they have been subject to modification (such as the introduction of dams or channelling of watercourses through confined culverts or other flow points). In general terms, some of these creeks would formerly have a 'chain of ponds' morphology, where water was retained for longer periods within ponds, evidence of which may have been subsequently destroyed by creek entrenchment in the historical period. Conversely, some areas may have formerly comprised broad low-lying areas in which water was retained in gilgai without a former creek channel. Again, the impacts of historical land use will frequently act to remove gilgai and encourage creek entrenchment.

In order to obtain a better understanding of the pre-modification nature of hydrology in the region, the 1860s map *Reuss and Browne's Map of New South Wales and part of Queensland showing the relative positions of the pastoral runs, squattages, districts, counties, towns, reserves etc.* and 1886 *Index map of New South Wales shewing [sic] pastoral holdings* prepared by the Surveyor General's Office was undertaken. The scale and accuracy of these maps is obviously variable and typically only main watercourses are identified. These maps show some level of alteration in the courses of Galathera Creek and Gurley Creek.

Further information was also gleaned from early historical sources who described the region with a particular focus on agricultural viability. During his expedition to the region in 1832, Mitchell (in O'Rourke 1995:21) described the Namoi (near Boggabri) as being 100 feet wide, with banks 37 feet high. He identified a watercourse near Edgeroi that he named Meadow Ponds (possibly Tahlee Creek) described as being limited to small ponds while Gurley Creek was described as a small river (O'Rourke 1995:26). Mitchell described 'Wheel Ponds' (likely to be the junction of Gurley Creek and Bomuckledi Creek east of current Gurley siding) as having 'plenty of water in them, here and there, where I imagine, there is always water but often a connecting chain of dry holes for nearly a mile, without any (refer to O'Rourke 1995:27). These descriptions are very different to the current morphology of these creeklines, which are substantially incised, potentially reflecting the impacts of landscape modification following the commencement of pastoralism and agriculture in the region. According to O'Rourke (1995:32) Mitchell crossed Tycannah Creek, which was dry at the time of the expedition.

In his account of the early pastoral period, William Telfer Junior described the country along the Gurley Plains as being very dry, with water available in Bumble Creek and Boggy Creek. He further described the country around Moree as 'flooded country' (presumably floodplains), with the area along Gil Gil Creek described as 'fattening country' (Milliss 1980:66-68).

However, it is apparent from the historical records that the Mehi and Gwydir Rivers were the key water resources in the region. Mitchell (in O'Rourke 1995:29) described the section of the Mehi River about halfway between Moree and Pallamallawaa as being a very broad river of such magnitude that he initially thought he had found the fabled inland river known as the Kindur, writing that 'The breadth of its deposits ploughed up in numerous old channels and deep holes full of reeds and the astonishing height and extent of its flood convinced me at length that this was the river I was in search of'.

Based on Mitchell's account O'Rourke (1995:33) concludes that in 1832 much of the country between the Mehi and the lower Namoi was open and that 'non-perennial creeks were reduced to large pools or billabongs'.

#### **4.1.1.1 Alluvial landforms**

Aside from providing an important resource that would have supported occupation within the area, the presence of alluvial landforms has implications for the presence and nature of archaeological deposits. In this area, the Namoi and Mehi rivers are part of a delta like, branching river system with multiple anabranches that flow towards the flood plains of the Barwon River. The distributary channels are set within a deep sequence of older alluvial deposits.

River flows in this region are characterised by pulse flows and 'boom and bust' ecological responses. This means that periods of widespread and persistent shallow flooding, with high ecological productivity (and therefore abundant food supply for traditional Aboriginal people living in the area) are separated by dryland periods, when rivers retreat to isolated waterholes along the distributary channels. In the flood situation, areas away from the main channel and/or slightly elevated (including low terraces) would have the highest occupation value. In the dry situation, water and food supplies and related occupation evidence would be constrained to the remnant waterholes. As the distributary channels and anabranches change over time, the highest value locations for occupation will also change. Detailed understanding of the alluvial morphology of the landscape is necessary to pinpoint locations with high differentially archaeological potential.

#### **4.1.2 Flora and fauna resources**

In terms of flora and fauna references, Mitchell frequently referenced the dry nature of the country but described the area around Gurley-Tycannah as being 'park-like' and an open grassy woodland (O'Rourke 1995:28). Prior to large scale modification, the assessment area is likely to have contained a range of vegetation communities (as discussed in **Table 4.1** above). These communities would have provided a range of resources suitable for food, medicinal use and for the manufacture of artefacts and would have hosted a range of mammals, reptiles and birds. Typically, it would be expected that resources were most concentrated in proximity to the water sources discussed above, hence the focus on this aspect of the landscape.

It is noted that Aboriginal parties identified a number of key resource plants within the proposal site and surrounds. These are listed below however the associated information on their use is limited to avoid accidental incorrect use of the plant resources and to protect the cultural knowledge of Aboriginal parties. The opportunity to provide additional information was identified as part of the review of the draft report by Aboriginal parties however no additional information was provided. The identified plants are:

- Black wattle (*Acacia mearnsii*) – gum extracted and chewed as well as used for other purposes
- Kurrajong (*Brachychiton populneus*) – source of water as well as food
- Kangaroo grass (*Themeda australis*) – seeds ground and baked into flour

- Nardoo (*Marsilea drummondii*) – spores processed and cooked in cakes (noting that spores are toxic if not correctly processed)
- Quandong (*Santalum acuminatum*) – edible fruit used an excellent source of vitamin C
- Budda or false sandalwood (*Eremophila mitchelli*) – food and medicinal purposes
- Wilga (*Geijera parviflora*) – medicinal and ceremonial purposes, with timber used for manufacture of range of items
- Bush tomato (*Einadia nutans*) – edible sweet tomato like fruit
- Wild banana (*Leichhardtia australis*) – food
- Quinine bush (*Alstonia constricta*) – medicinal
- Gumby gumby (*Pittosporum sp.*) – medicinal
- Eurah (*Eremophila bignoniiflora*) – medicinal.

#### 4.1.3 Stone resources

Another key consideration in relation to resources is the availability of stone suitable for the manufacture of stone artefacts, which is typically the most enduring type of archaeological evidence. Thompson (1993:17) refers to the presence of outcropping silcrete in the area between North Star and Milguy (mapped slightly to the east of the proposal site and additional assessment areas) and identified that silcrete cobbles were present in Croppa Creek and Tackinbri Creek (both intersected by the proposal site) where outcropping silcrete has eroded into the creek and been subject to ongoing water transport. This is supported by geological mapping for the region (Inverell 1:250 000 geological map), which documents the presence of Tertiary geological units in elevated areas to the east and potentially intersecting the proposal site in the vicinity of Tikitere. The key unit is described as comprising deposits of gravel, sand, clays, greybilly (a term used for quartzite/silcrete) and porcellanite underlying basalt and dolerite extrusions.

Silcrete, porcellanite (depending on quality), basalt and dolerite are all raw materials suitable for the manufacture of stone artefacts. Outcrops or exposures of these materials may have constituted a very important resource given that the primary geological units to the west are predominantly alluvial in nature and would not have contained materials suitable for the manufacture of artefacts, except where transported within creek lines.

## 4.2 Post contact landscape modification

The Non-Aboriginal Heritage Impact Statement for the proposal (Umwelt 2017b) documents the history of non-Aboriginal occupation of the proposal site and its surrounds. This information is summarised with reference to the implications for landscape modification.

Following exploration by Mitchell in 1832, the suitability of the region for pastoral use became known and early pastoral settlement of the area began, with pastoral runs extending out to Wee Waa and Moree by 1836. The rapid growth of the pastoral industry in the region is evidenced by records demonstrating that by 1848 the Gwydir Pastoral district had 26 runs with sheep and 70 with cattle (refer to Umwelt 2017b). It is noted that the limitations on reliable water availability delayed settlement on the Edgeroi Plain however the ongoing demand for viable pastoral land meant that even the more marginal areas were settled relatively quickly (Milliss 1992:92).

The commencement of wheat farming in the region had major implications for land management due to commencement of broad scale cultivation and ploughing. The focus on wheat cultivation increased following ongoing experimentation to produce more suitable wheat varieties for conditions in western NSW and with new technological developments that allowed for clearance, preparation and harvesting of larger tracts of land. Concurrently, the development of the rail infrastructure allowed for ease of transport for crops and stock, further encouraging pastoral and agricultural expansion in the region.

In addition, cotton farming in the Gwydir Valley began in the late 1950s and became a growth industry during the 1960s and 1970s based on the ongoing development of irrigation systems and changes to automation. Impacts associated with cotton farming including the establishment of broad scale irrigation and the levelling of large tracts of land to manage irrigation requirements have had a significant impact on the landscape associated with the proposal site to the north of Moree.

Aside from agricultural land use, the construction and ongoing maintenance of the existing rail line is the primary disturbance factor within the proposal site. The rail line from Narrabri to Moree was opened in 1882 and the section from Moree to Camurra in 1913. The Camurra-North Star line was established somewhat later, following the expansion of wheat farming in the region and was not operational until 1932 (refer to Umwelt 2017b).

These activities have all had significant impacts to the landscape within the assessment area and in turn, are likely to have had significant impacts to any archaeological evidence that may have been present. Removal of significant amounts of mature trees reduces the likelihood that scarred trees will remain present whilst also exacerbating erosion of artefact-bearing soils. Similarly, ploughing of soils following the establishment of agriculture in the region, the establishment of irrigation systems and laser levelling of paddocks will have impacted on the integrity of any archaeological deposits that may have been present to the depth of disturbance. Similarly, the earthworks required to construct and maintain the existing rail line has resulted in massive disturbance to the soil profile within the current rail corridor.

## 4.3 Summary

A review of key environmental factors associated with the proposal site demonstrates that the portions of the proposal site associated with water resources would have provided an environmental context attractive to Aboriginal people, some of which may have the potential to contain buried archaeological deposits within alluvial landforms. The north-eastern portion of the proposal site may also have provided access to lithic resources. However, historical land use and other environmental impacts (such as flooding, creek line migrations and prevailing weather conditions) within the proposal site and surrounds have the potential to have significantly impacted any archaeological deposits that may be present. This will be discussed further in **Section 5.4**.

## 5.0 Cultural and archaeological context

In order to adequately understand the nature of archaeological resources within an area, it is necessary to also understand the cultural context of the area. The term cultural context encompasses both ethnohistoric information regarding how Aboriginal people lived in the region during the period of early non-Aboriginal settlement, and the results of previous archaeological investigations conducted within the region.

### 5.1 Ethno-historic and historic context

Historic records, such as official records, personal observations recorded in diaries or publications and paintings, can provide rare information on Aboriginal lifestyles of a region at the time of European contact. Although a valuable source of information, the limitations of these documents must be recognised as colonial observers generally tended to record unusual rather than everyday events, religious and social life rather than economic activity, and men's behaviour rather than that of women and children. As such, ethno-historic records are neither unbiased nor complete, and they cannot provide a complete understanding of Aboriginal lifestyles at the time of contact. The records are also clouded by the late 19th Century/early 20th Century Anglophile perceptions of the recorders who often did not understand the meaning/background of the events they witnessed and thus may have drawn conclusions/made assessments that were not accurate.

The issue of identifying the boundaries of Aboriginal nations and tribes is complex. In general terms, the majority of sources indicate that the proposal site is located within the country of the Gomeroi<sup>1</sup> People. In relation to the proposal site, sources indicate that the Gomeroi Nation was a nation composed of numerous tribes, with distinct portions per tribe (Howitt in Millis 1992). Millis (1992) notes the variability in defining the boundaries of Gomeroi Country, presenting a range of evidence from various sources. Based on the registered Native Title claim (and comparable with the extent of Gomeroi Country discussed by anthropologist RH Matthews), Gomeroi Country extended from the northern portion of the Upper Hunter Valley, west towards Coonabarabran and Walgett and north towards what is now the Queensland border (refer to map provided with native title claim information in **Appendix 3**). Regardless of the identified variability in boundaries, it is generally accepted that the proposal site is located within Gomeroi Country (for a more detailed review of this matter, refer to Millis 1992). However, given the disturbance to traditional Aboriginal ways of life and the dispersal of Aboriginal populations during the period following non-Aboriginal settlement, in reviewing early historical records, this assessment refers to Aboriginal people more generally.

The primary sources did identify the presence of internal boundaries within Gomeroi Country, with Mitchell's account in 1832 attesting to the fact that his guide (who Mitchell identified as being Kamilaroi) was increasingly concerned as they entered new portions of Gomeroi Country, eventually deserting when 'he was already beyond his own beat', with Mitchell concluding that he had returned to his 'own tribe' on the Peel River (in O'Rourke 23).

This assessment focusses on aspects of ethno-historic and historical records that relate to Aboriginal cultural values associated with specific locations within the proposal site or immediate surrounds and/or that have implications for the archaeological record. As previously discussed, one of the first historical accounts of the region comes from the diaries of Thomas Mitchell and records observations made during his 1832 expedition to record and map a reported large inland river (the Kindur). Mitchell made a range of observations of Aboriginal people living in the region and was, to some extent, reliant on Aboriginal people to guide the expedition.

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<sup>1</sup> Note that there are various spellings including Kamilaroi, Gomilaroi and others. For the purposes of this report, the spelling used in the current native title claim is adopted.

In the vicinity of the Gwydir, Mitchell came across what he described as a 'native village' and provided a fairly prosaic description, as quoted in O'Rourke (1995:31).

*In crossing one hollow we passed among the huts of a native village. They were tastefully distributed amongst drooping acacias and casuarinas; some resembled bowers under yellow fragrant mimosa; some were isolated under deeper shades of casuarinae, while others were placed more socially, three or four together, fronting to one and the same hearth. Each hut was circular or semi-circular, the roof conical and from one side a flat roof stood forward like a portico, supported by two sticks.....*

This description implies that, in this instance, the camp was relatively large and contained a number of family groups. Mitchell also described an encounter with a small family group near Tycannah while the man of the family was extracting sugar bag or bush honey from a native bee hive (O'Rourke 1995:28). He also provides another example of a larger family grouping, consisting of a group of 30 Aboriginal people (including men, women and children) camping on a chain of ponds between the Mehi and Namoi (Poison Gate – west of Moree). These descriptions indicate the changing nature of how Aboriginal people used the landscape based on the available resources and seasons, with larger groups gathering at key resource locations/times of year but potentially reverting to smaller family units when moving through marginal country or at times of reduced resource availability.

In terms of resources, based on the accounts of a station manager on the Barwon (well outside the proposal site but potentially with a similar resource base), Milliss (1992) references Aboriginal people in the region consuming a range of plant and animal foods, with a seasonal reliance on the usage of grass seeds (including kangaroo grass) that were processed by grinding seeds into flour for baking. It was noted that a great variety of terrestrial and aquatic animals were used and that, during times of drought, the larger streams and lagoons were targeted for occupation, both for water and the animal resources attracted to the available water. This is at least partially supported by Mitchell's description of a camp on a lagoon in the region in which he states that the camp was easily identifiable based on the presence of mussel middens, kangaroo and pelican bones and numerous fires (O'Rourke 1995:33).

### **5.1.1 Conflict**

One of the key themes in the Aboriginal history of the region has been the occurrence of conflict between Aboriginal people and non-Aboriginal settlers. However, during initial expeditions to the area, relations were relatively benign. Mitchell records what appears to be some displays of resistance/warning, including an encounter with an Aboriginal man in the vicinity of the current Camurra-Boggabilla rail line in which the man approached the exploration party and adopted a 'position of defiance', gesticulating with his spears before leaving them and returning to the bush (O'Rourke 1995:30). This may have been a gesture of warning or a non-verbal statement that the expedition party were entering this man's country.

Subsequently, a member of Mitchell's expedition (Souter) reported encountering a group of 200 Aboriginal people who showed him the way to water but then 'detained' him (gently and with no violence), providing him with food and shelter until he absconded (O'Rourke 1995:36). However, relations soured to some extent, with two members of Mitchell's party killed while camped on the upper reaches of Gurley Creek (east of the proposal site) with the cattle and supplies that they were protecting stolen (O'Rourke 1995:40). Despite this event and Mitchell's general concerns regarding potential attacks by Aboriginal people, there are no further records of attacks by Aboriginal people (retaliatory or otherwise) on Mitchell's expedition. In fact, Mitchell's party subsequently encountered a relatively large number of Aboriginal people (potentially as many as 100 men and boys) on the Mehi near Moree without any specific conflict although Mitchell did order guns and a rocket to be fired, presumably in an attempt to demonstrate the expedition's firepower. In addition, Mitchell's expedition was followed by 100 or more Aboriginal people as they moved across the floodplain towards a camp on Snodgrass Lagoon (located on Waterloo Creek to the west of the assessment area), seemingly without major incident.

As discussed in **Section 4.2**, non-Aboriginal settlement of the area followed Mitchell's expedition. The increasing use of the area for pastoral purposes not only increased the number of non-Aboriginal people in the region but also presumably placed pressure on the resource base upon which Aboriginal people relied. This in turn resulted in increased interactions between Aboriginal people and the early pastoralists, which in many cases involved conflict. This is perhaps best expressed in the Report from the Select Committee on Aborigines printed in 1836 (in Milliss 1992:227), which included the following statement

*From very large tracts, we have, it appears, succeeded in eradicating them; and though from some parts their ejection has not been so apparently violent as from others, it has been wholly complete through our taking possession of their hunting grounds, whereby we have despoiled them of the means of subsistence.*

Within the vicinity of the proposal site, the evidence suggests both ongoing and seemingly semi-systematic efforts to remove Aboriginal people from their land and more subtle displacement of people by ongoing pastoral settlement. The first documented conflict reportedly occurred between Aboriginal people and white settlers at Narrabri in 1834 (O'Rourke 1995:48). In 1837 two stockmen were killed by Aboriginal people at Terry Hie Hie (to the east of the proposal site), with reports conflicting on the reason for the incident but one report (from Henry Bingham at Cassilis) indicating that the attack occurred following an armed attempt by the white stockman to take women from an Aboriginal camp (Milliss 1992:153). A subsequent report indicated that the killing of the two stockmen at Terry Hie Hie was in retaliation for a massacre of Aboriginal people however no further details were provided. The same account references a massacre of up to 200 Aboriginal people at Gravesend Mountain (on the Gwydir substantially east of the assessment area towards Warialda) prior to the Terry Hie Hie event (Milliss 1992:159).

Alexander Paterson (Commissioner of Crown Land) visited the Namoi and Gwydir regions in 1837 and noted increasing tensions within the region, with reported incidents involving the spearing of stock and the murder of at least five white people along the Namoi and 'even greater' occurrences of cattle theft/spearing in the vicinity of Moree (Milliss 1992:156). Landholders within the region appealed to the New South Wales government for assistance, resulting in the dispatch in December 1837 of the Native Mounted Police 'for the purpose of enquiring into, and repressing as far as possible the aggressions complained of' (letter to Commander of Mounted Police, Major Nunn in Milliss 1992:164). The Native Mounted Police, as commanded by Major Nunn, undertook a campaign to capture Aboriginal people who were considered to have undertaken hostile actions against landholders. However, there appeared to be little effort expended to identify individual responsibility but rather all Aboriginal people within the region were considered potentially guilty.

Based on the account of William Telfer (stockman in the region) and a reference from the *Town and Country Journal*, Milliss (1992) it is recorded that, on January 26<sup>th</sup> 1838, Nunn and his men came across a large group of Aboriginal people camped at what was then known as Snodgrass Lagoon (now Lower Water) on Waterloo Creek approximately 50 kilometres south-west of Moree (and west of the intersection between the proposal site and Waterloo Creek). Accounts of the outcomes of the interaction presented at a subsequent inquiry vary, however it is clear that the attempt by Nunn's men to capture the Aboriginal people met with understandable resistance, with Nunn's men subsequently opening fire. Milliss (1992:185-190) maintains that after the first encounter, a number of Aboriginal people were killed and Nunn's men chased after those who had escaped, citing Trooper Lee's testimony at the inquiry that 40-50 Aboriginal people were killed. According to subsequent word of mouth within the colony, the number of Aboriginal people killed was substantially higher, with Threlkeld reporting that upwards of 120 people were killed (as referenced in Milliss 1992). Regardless of the precise number of people murdered, this was a definitive event in the relationship between Aboriginal people and pastoralists within the region and was subsequently followed by the infamous Myall Creek massacre.

In 1839 Edward Mayne (Commissioner of Crown Land subsequent to Paterson) came to the region with the brief to establish a new force known as the Border Police and to further enquire into the nature of previous



actions in the region resulting in the death of Aboriginal people. Mayne travelled from Terry Hie Hie across to what is now Gurley and identified that one of the key landholdings in the area (belonging to Robert Pringle) had been abandoned by his staff, reportedly due to fear of attack by Aboriginal people (Milliss 1992:576). Mayne made attempts to gather as many of the Aboriginal population together as possible, noting that their numbers appeared to have been ill effected by the effects of influenza and conflict (Milliss 1992:580). He reportedly provided the Aboriginal people who gathered at his instigation with rations and identified that if they ceased to take cattle, he would provide them with a bullock and ensure their protection from the white station hands and squatters. To effect this, he issued a notice cautioning anyone who threatened Aboriginal people 'when they may be met with quietly walking or going on the Runs, looking for their food, or where they may be found at the Rivers fishing, or in any other way needlessly molesting them, such leading to a Recrimination and feeling of Revenge on their part' that the firearms held on the station would be confiscated and that the relevant station may be deprived of its licence to operate (in Millis 1992:581).

As a result of Mayne's reputation, he reportedly gathered an additional group of 100-150 Aboriginal people (reportedly from three tribes) at Marshall's property on the Mehi River (to the east of the proposal site) and subsequently gathered a group of up to 500 people before heading back towards Moree. On arrival on Inches property on the Mehi north-west of Moree, he assembled a group of up to 700 Aboriginal people (although in subsequent accounts Mayne referenced the group as numbering 300 only), including a new group of approximately 200 people who were subsequently accused of murdering two servants on a property west of Waterloo Creek near what is now the town of Rowena (Milliss 1992:589). Mayne (through an Aboriginal interpreter of sorts) held an enquiry and identified seven men that were deemed responsible, of whom Mayne captured five and sent them to Sydney for trial. The numbers of people gathered by Mayne (although by no means certain) implies that the Aboriginal population of the area, although reduced, was still substantial when compared to the non-Aboriginal population.

Despite some significant variation in historical accounts, it is evident that the period of non-Aboriginal settlement from the late 1830s was characterised by ongoing conflict between Aboriginal and non-Aboriginal people, resulting in the deaths of 100s of Aboriginal people, both directly (where Aboriginal people were murdered) and indirectly (through the spread of disease and the removal of access to resources). This in turn, resulted in massive impacts on all aspects of Aboriginal life, the implications of which continue to the present day.

### **5.1.2 Mission period**

In recognition of the impacts of non-Aboriginal settlement (as discussed above), in 1838 a group of concerned individuals (including missionary Lancelot Threlkeld and George Augustus Robinson, who was formerly responsible for the Flinders Island Aboriginal mission) established the Australian Aborigines Protection Society. This organisation became very important in driving the ongoing establishment of missions and reserves in New South Wales and ultimately, in influencing the lives of Aboriginal people.

By 1855, Christian missionary William Ridley reported that Aboriginal people living on the Namoi were living in proximity to stations where they obtained work and rations, resulting in major changes to traditional diets and practices. Disease (particularly smallpox) and massacres had taken their toll on the remaining population, as did the difficulty in accessing traditional resources as a result of the changes in the landscape brought about by grazing (O'Rourke 1997:74). Based on returns from the appointed Protector of Aborigines, by 1889, the population of Aboriginal people in the Namoi and Gwydir regions had declined to approximately 1500 and further dropped to 800 by 1910 (Milliss 1992:730). This decline in population was mirrored elsewhere in New South Wales, leading to ongoing pressure on the government to do something about the plight of Aboriginal people, particularly from the Australian Aborigines Protection Society.

This pressure to some extent resulted in the passing of the *Aborigines Protection Act* in 1909. This act provided the Aborigines Protection Board (APB) with legal powers to 'provide for the protection and care of

Aborigines'. The Act gave the APB the right to control Aboriginal reserves and included specific provisions under which children could be removed from their parents and placed in service. Following the passing of this act, Aboriginal people were encouraged (and in many cases, forced) to live in formal missions and reserves where the APB could, to some extent, control how they lived, worked and cared for their children. Key reserves/missions in the region surrounding the proposal site included those at Terry Hie Hie and Euraba (subsequently relocated to Toomelah in 1937), Narrabri and Wee Waa.

The reserve of 102 acres at Terry Hie Hie was originally set aside in 1895 by the APB (Briggs-Smith et al, 1999:4). The reserve at Euraba was originally established on 90 acres gazetted in 1898, subsequently relocated to Old Toomelah in 1927 before again being moved to the current location of Toomelah in 1932 (AHMS 2008:100). Interestingly, both of these locations are referenced as hosting some of the last bora ceremonies in the region, with these occurring in approximately 1883 at Terry Hie Hie and 1891 at Kunopia/Euraba (O'Rourke 1997). This indicates that these areas were of significance to Aboriginal people prior to the establishment of reserves, with the reserves selected to include areas of importance to Aboriginal people. Evidence also exists for the establishment of three reserves at Narrabri, the first gazetted in 1898 with an area of 800 acres, the second gazetted in 1916 with an area of two acres and the third consisting of 5200 acres on Bohena Creek (AHMS 2008:103).

Missions and reserves were highly regimented and allowed for control of Aboriginal people, including all aspects of life. The systematic practice of the removal of children from their parents has been well documented in current accounts of the Stolen Generation. The relationship between the Aboriginal people living at Terry Hie Hie and the local landowner (John Edward Cory) appears to be contrary to the trend of the time, with Mr Cory's journals indicating payment of equal wages to Aboriginal and non-Aboriginal labourers and Cory reportedly allowing Aboriginal people to live on his property in the hope that this would provide some protection for families from the removal of children (Briggs-Smith et al 1999:10). During this period, the occupants of Terry Hie Hie and Toomelah provided a key source of labour for pastoralists in the district.

However, despite the reported attempts by Mr Cory, it was apparently the removal of children from their parents at Terry Hie Hie that triggered Aboriginal people to leave the mission and establish informal settlements on the outskirts of Moree, including what was referred to as the 'Steel Bridge Camp', located within the proposal site at the crossing of the Mehi River (Briggs-Smith et al, 1999:4). There was a history of significant conflict between Aboriginal people living in these fringe camps on the edges of Moree and town authorities, with Council minutes in the 1920s indicating that removal orders were periodically issued with the intent of moving people back to Terry Hie Hie. These attempts were unsuccessful. In 1928, Council issued removal orders and proceeded to demolish the dwellings established at non-sanctioned fringe camps, with fines issued to people who failed to move on, leading to jail for some who were unable to pay the fines. This conflict was ongoing during the late 1920s and early 1930s, even after the establishment of a new reserve at East Moree (Goodall 1992:206). It is noted that the accounts of demolition of the fringe camps (including the Steel Bridge fringe camp) imply that it is unlikely that any archaeological evidence of structures associated with the Steel Bridge fringe camp will remain present. However, it is possible that dispersed artefacts associated with Aboriginal life at the Steel Bridge fringe camp may remain present within the area.

### **5.1.3 Contemporary history**

While this document is not intended to be an account of contemporary history, it is important to note that many Aboriginal families in the region retained close links to the railway industry, with many Aboriginal men employed in constructing, maintaining and operating rail lines from the 1930s onwards (based on accounts from several Aboriginal community members. Many Aboriginal people currently living in the area have recollections of parents, grandparents or other family members who travelled extensively through western New South Wales undertaking rail work. Following increased mechanisation of the rail network, this source of employment rapidly dried up.

In terms of contemporary history, it must also be recognised that Moree holds a very important place in Australia's modern history, being a key location in the 1965 'Freedom Rides' which drew attention to ongoing racism and social discrimination in rural New South Wales in particular. This event had implications for ongoing race relations within Australia and occurred within the living memory of members of the present Aboriginal community in the region.

## 5.2 Archaeological context

The review of the archaeological context of the proposal site and additional assessment areas involves the completion of a review of both registered Aboriginal archaeological sites and the outcomes of previous archaeological investigations undertaken in the region.

### 5.2.1 AHIMS searches

The Office of Environment and Heritage (OEH) Aboriginal Heritage Information Management System (AHIMS) is a database of Aboriginal sites recorded as a result of previous investigations and for which site cards have been submitted. Submission of site cards for registration on AHIMS is undertaken to satisfy the requirements of Section 89A of the NPW Act.

Searches of the AHIMS database were conducted in July and October 2016 (including updates to the results of previous searches to ensure currency) and encompassed a buffer of 500 metres either side of the proposal site centreline. The AHIMS data is included in full in **Appendix 4**. No Aboriginal Places were identified within the AHIMS search area.

The AHIMS searches identified a total of 4 previously recorded sites located within 50 metres of the proposal site, as described below. The location of relevant archaeological sites is shown in the mapping of survey results in **Section 6** and **Figures A1 to A56**.

AHIMS site #10-6-0048 is a scarred tree located approximately 20 metres north-west of the proposal site, as shown in **Figure A23**. It is a bumble box with an ovoid scar on the south-east face of the tree. The tree is located to the west of the existing rail corridor adjacent to an existing equipment lay-down area. This site was identified during preliminary inspections for the proposal.

Site #10-3-0032 is referred to as the Steel Bridge fringe camp site (site card dated October 2003). It is a registered site both in relation to the potential for pre-contact archaeological deposits and its association with the former fringe camp that was located in this area from the 1920s. The registered coordinate for the site places it approximately 20 metres outside the proposal site (refer to **Figure A30**) however the site card describes the site as extending across both banks of the Mehi River, although it is understood that the fringe camp was situated on the western bank, in proximity to Moree and at the base of the existing rail overbridge. The site card identifies the site as having low archaeological potential within the lower terrace immediately bordering the Mehi River due to the ongoing impact of flooding in this location but identifies an area of moderate archaeological potential on the eastern bank of the river in association with an older terrace formation. Based on the site card description, the site is located within the proposal site at the base of the existing Mehi River rail overbridge on the eastern and western sides.

Site #10-3-0035 is an artefact scatter and area of potential archaeological deposit located to the south-east of the existing rail corridor (refer to **Figure A30**) approximately 15 metres east of the proposal site. The site contained over 100 artefacts and burnt clay nodules on a floodplain and terrace associated with Duffys Creek. Further detail on this site is provided based on a review of the relevant archaeological assessment in **Section 5.2.4**.

Site #2-4-0073 is located within the additional assessment area surrounding a culvert, approximately 15 metres north-north-west of the proposal site (refer to **Figure A54**). The site consists of a single silcrete broken flake located in a heavily disturbed drainage line to the west of the existing rail corridor.

Further information regarding these sites and others within the region is discussed with reference to the outcomes of archaeological investigations undertaken in the local area.

### 5.2.2 LEP listings

The Narrabri Local Environmental Plan (LEP) 2012, the Moree Plains LEP 2011 and the Gwydir LEP 2013 were searched for items of Aboriginal heritage that may be subject to impact by the proposal. These planning instruments did not contain listings for any Aboriginal heritage items within the proposal site and additional assessment areas.

### 5.2.3 Other Listings

To determine if there were any federally listed Aboriginal heritage sites or places present within the proposal site, a search was undertaken of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool (refer to **Appendix 2**). The proposal site is adjacent to one property (Moree Baths and Swimming Pool) that is listed on the National Heritage List due to its historical value in association with the Aboriginal civil rights movement. The listed item is located outside the proposal site and will not be subject to impact by the proposal (refer to Umwelt 2017b for further information).

### 5.2.4 Previous archaeological investigations

The majority of previous archaeological investigations in the region have been undertaken as part of the environmental assessment process and therefore the location of the assessed areas is reflective of areas subject to development (that is, assessment has primarily occurred as part of the planning process for proposed developments). However, a review of the outcomes of these investigations is critical in gaining an understanding of the distribution and nature of sites within the area.

#### Kelton 1998a

This assessment related to the replacement of a former steel 'Pioneer' bridge over the Gwydir River near Yarraman, approximately five kilometres north of the proposal site. Four scarred trees were identified during the survey (comprising four Aboriginal scarred trees and one tree with a surveyor's blaze) but were recorded as two sites. All scarred trees were coolabah trees.

Kelton (1998a) identified that the level of disturbance within the study area, primarily from the erosive impacts of flooding of the Gwydir on the immediate creek banks, dictated that there was low potential that the proposed works would result in impacts to subsurface deposits. Consequently, no subsurface testing was undertaken however it was recommended that monitoring of earthworks be undertaken for the bridge abutments and road approaches.

#### Kelton 1998b

This assessment related to a small gravel quarry located approximately 1 kilometre east of the proposal site and north of Tookey Creek (near Bellata). The assessment resulted in the identification of five scarred trees (none of which are registered on AHIMS). The trees consisted of unspecified box trees and bumble box of which three were assessed as possible scarred trees and two were assessed as probable scarred trees.

In more general terms, the survey area was assessed as having low archaeological sensitivity as it consisted of a gravelly ridge with no access to reliable water. It was recommended that no further archaeological investigation would be required provided that impacts to the recorded trees could be avoided.

#### **Kelton 1998c**

Kelton (1998c) undertook an assessment in relation to an optic fibre cable extending from Gurley to Bellata, immediately to the west of the current proposal site. No sites or areas of archaeological potential, largely due to the high levels of disturbance and the easily inundated nature of any landforms bordering watercourses.

#### **Appleton 1998**

This assessment related to the replacement of a bridge over Gurley Creek at Wonga, approximately 7.5 kilometres east of the proposal site. No archaeological or Aboriginal cultural material was recorded during the survey however it was assessed that there may be sites present within the area but not visible at the time of survey. No further archaeological investigation was recommended.

#### **Kelton 1999a**

Kelton (1999a) undertook a broad assessment of the Moree bypass portion of the Newell Highway (now constructed). This preliminary assessment related to a large area including the portion of the proposal site north of the Mehi River to the Gwydir River. Three new sites were recorded during this assessment, of which one (AHIMS #10-3-0035) maps as being located within 15 metres of the proposal site. The site is described in the report as being within five metres of the existing rail corridor but Kelton (1999a:40) specifies that it is 'considered likely' that the site extends into the existing rail corridor. On this basis, it is assumed that the site continues into the proposal site. The site is an open campsite located along the southern bank of Skinners Creek near a complex of ephemeral overflow channels and within a cultivated paddock. It was recorded as containing over 100 artefacts manufactured predominantly from brown indurated mudstone, with smaller quantities of chert, jasper, sandstone and volcanic material.

Kelton (1999a) identified the terraces bordering the Mehi River, Duffys Creek and Skinners Creek as being archaeologically sensitive. In addition, the landforms immediately bordering Halls Creek (which is also intersected by the proposal site) were assessed as being archaeologically sensitive, despite only one isolated artefact (AHIMS #36-3-0036) being identified.

Kelton (1999a) also noted that the identified fringe camps bordering Moree (including the Steel Bridge Camp) are of high significance to the Moree Aboriginal community and that impacts to these locations should be avoided.

#### **Kelton 1999b**

Kelton (1999b) completed an assessment for the replacement of two bridges on the Newell Highway spanning Boggy Creek and Bulldog Creek, both immediately to the east of the proposal site. The areas assessed did not contain any archaeological sites and were assessed as having low archaeological potential based on the general unsuitability of the creek banks for occupation (being flat and flood prone) and the level of disturbance within the area.

#### **OzArk 2004**

OzArk (2004) completed archaeological testing at sites #10-3-0032 (Steel Bridge Camp site, which extends into the proposal site), #10-3-0040 and #10-3-0041 (both located on the Skinners Creek/Duffys Creek channel but outside the proposal site). These test excavations were conducted under an AHIP prior to the construction of Moree Bypass.

The excavations associated within the Mehi River Potential Archaeological Deposit (PAD)/Steel Bridge Camp site consisted of three test pits, each with a surface area of four metres by two metres. The excavation works were confined entirely to the footings required for the Moree Bypass bridge over the Mehi River. Excavations extended to approximately 1.75 metres in depth, with soils primarily consisting of heavy clays with inclusions typical of an alluvial context, as expected given proximity to the Mehi River. Approximately 30% of the excavated material was sieved however no artefacts were recovered. In addition, no evidence of the existence of the historical Steel Bridge Camp was identified. On this basis, OzArk (2004) suggested that the area remains a site due to its association with the Steel Bridge Camp but has 'no prehistoric archaeological manifestation'.

The excavations within the Skinners Creek PAD consisted of four test pits, each with a surface area of one metre by one metre. The excavations continued to depths of up to 60 centimetres, with soils again indicating alluvial deposition. As with the Mehi River excavations, approximately 30 per cent of the material was sieved, with only one artefact recovered and an additional surface artefact collected. Based on the context and evidence of water wearing on the artefact, it was assessed as not being in-situ. OzArk (2004) recommended that the site be removed from the AHIMS database based on the lack of in-situ archaeological evidence.

### **OzArk 2011**

OzArk undertook an Aboriginal archaeological assessment in relation to a proposed solar farm near Tycannah, immediately to the east of the proposal site. The assessment resulted in the identification of two scarred trees and one artefact scatter with PAD. The artefact scatter and PAD was located adjacent to a former ephemeral billabong. The report identified that the sites could be avoided by proposed works.

## **5.3 Preliminary archaeological inspection of the proposal site**

A targeted inspection of the existing rail corridor was undertaken as part of the Umwelt (2014) high level Aboriginal cultural heritage evaluation for the proposal. The inspection was conducted between 10 and 14 September 2014. During the inspections, two sites were identified that are located within 20 metres of the in the proposal site. These are sites #10-6-0048 and #2-4-0073, as described in **Section 5.2.1** and shown in **Figures A23** and **A54**.

## **5.4 Archaeological predictions for the proposal site**

Based on the outcomes of the review of the environmental and cultural context of the proposal site, the following statements/predictions can be made:

- There are four previously recorded archaeological sites located within 20 metres of the proposal site, of which two (10-3-0035 and 10-3-0032) are located within the proposal site (refer to **Figures A23, A30, and A54** in **Appendix 1**). The two sites within the proposal site are associated with the Mehi River and its overflow channels and were identified based on the potential for subsurface deposits, with the Steel Bridge Camp site also identified based on the former presence of an Aboriginal fringe camp and its associated significance to the local Aboriginal people. Excavations conducted within site 10-3-0032 did not result in the recovery of any Aboriginal objects however it is noted that these excavations were relatively limited in extent and depth when considered with reference to the extent of the floodplain and terrace formation associated with the Mehi River.
- The regional archaeological pattern indicates that stone artefact scatters and scarred trees are the most likely site types to be identified within the proposal site.

- Stone artefact scatters will be most frequent in number and will be larger in size in proximity to reliable sources of water. With reference to the proposal site, there are a number of key water resources. However, as discussed in **Section 4.1.1**, the reliability of these resources is variable and the morphology of these watercourses has, to some extent, been impacted by flooding and by post-contact land use, including alterations to flooding regimes following land clearance. The proposal does intersect with the two major watercourses in the region being the Mehi River and Gwydir River.
- Scarred trees may occur anywhere within the proposal site where mature native trees are found and are most likely to occur on box or river red gums.
- The distribution of other site types is more difficult to predict, with the conventional understanding being that burials will typically occur in areas of softer soils, often bordering major watercourses. However, it is noted that sites of this type are particularly susceptible to impacts from erosion and changes in soil conditions.
- Quarry sites may occur where suitable rock outcrops are present. Within the proposal site, the potential for quarry sites is greatest in the section between Croppa Creek and North Star where geological mapping indicates rock types suitable for artefact manufacture (silcrete, basalt, dolerite and porcellanite) may be present. However, no quarry sites have been recorded within the relatively extensive area subject to an AHIMS search.
- In relation to all of the above, it is noted that the proposal site has been subject to significant disturbance. Within the existing rail corridor, the construction and maintenance of the existing rail line is likely to have resulted in the removal/relocation of archaeological evidence that may have been present (if any). Similarly, in adjoining farmland within the proposal site and additional assessment areas outside the existing rail corridor, clearance, grazing and cultivation of the landscape will have impacted on archaeological potential, compromising the integrity of any archaeological sites that may have been present.
- The potential exception to this is the possibility that archaeological deposits may be present at depths less subject to disturbance in terrace landforms bordering the Mehi and Gwydir Rivers and Croppa Creek. As identified within **Section 4.1.1.1**, these alluvial landforms have a sequence of formation that may act to preserve archaeological deposits. This in turn indicates that within the floodplain landform, slightly elevated areas and adjacent terraces have the potential contain archaeological deposits, taking into account the distribution of cumulative occupation evidence. These deposits may not be visible on the surface due to burial from subsequent flooding, as discussed further below. The depth of occupation materials will depend broadly on proximity to the current channel, the timing and patterns of migration and incision history of channels, flood history, and the patterns of persistent waterholes. Terraces and alluvial landforms are often regularly impacted by flooding, which can act to both eradicate (high intensity floods that wash away artefacts) or preserve archaeological deposits (gentle floods that can deposit a layer of sediment over surface artefacts, building a protective layer above the archaeological deposit that reduces the likelihood of it being subject to impact), with the latter being the more frequent flood mechanism in this region. If there are multiple periods of deposition of capped archaeological deposits, then different periods of time are stratified. Stratified sites have much higher archaeological value as they allow for interpretation of change through time. The archaeological potential of these landforms does not relate to artefacts that may be deposited/moved during large flood events but to the potential for former soil surfaces with intact archaeological deposits to remain present at depth and capped by more recent flood deposits.
- It is recognised that no archaeological evidence was recovered from an archaeological excavation conducted in the Mehi River terrace. However, as discussed above, these excavations were limited in extent (located within the footprint of the Moree bypass on the east side of the Mehi River and

comprising a sample of 0.05 per cent of the terrace landform within the proposal site) and depth. These results therefore do not rule out the potential for buried deposits at depth in other parts of terrace system within the proposal site.



## 6.0 Archaeological survey

The archaeological survey of the proposal site and additional assessment areas was conducted between 10 October and 27 October 2016 by Nicola Roche (Umwelt, Manager Cultural Heritage) accompanied by the Aboriginal party representatives identified in **Table 3.3.** The survey participants were accompanied by David Coelli (GHD) and protection officers in order to ensure compliance with all ARTC safety requirements and relevant work health and safety legislation.

### 6.1 Survey methodology

The survey methodology was designed to satisfy requirements for archaeological survey as established in *Code of Practice for Archaeological investigation of Aboriginal objects* (DECCW now OEH 2010) and the *Guide to investigating assessing and reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011) and was provided to all Aboriginal parties for review and comment prior to the commencement of the survey.

The archaeological component of the survey addressed the following requirements:

- The survey was designed and implemented to ensure that an adequate sample of all the landforms present within the proposal site and additional assessment areas was obtained.
- Previously identified archaeological sites present within the proposal site and additional assessment areas and potentially subject to impact by the proposal were inspected and re-recorded where the sites were accessible.
- The survey effort involved a combination of vehicle inspection (using a high rail vehicle travelling within the existing rail corridor) and pedestrian survey. Pedestrian survey effort was focussed on areas of greatest archaeological potential, areas containing previously recorded archaeological sites and portions of the proposal site and additional assessment areas that include provision for impacts outside the existing rail corridor.
- Areas selected for pedestrian survey were walked by the survey participants at intervals determined with reference to ground surface visibility and levels of exposure.
- Throughout the survey, Aboriginal party representatives were provided with the opportunity to undertake pedestrian survey at any areas that they identified as having potential and/or requiring further inspection.
- Information recorded during the survey included (but was not limited to)
  - landform
  - gradient and aspect
  - vegetation
  - geology and soils
  - occurrence of Aboriginal resources (food and medicine plants, prey animals, stone and water)
  - average ground surface visibility
  - extent of any exposures

- any information provided by the registered Aboriginal parties in relation to cultural values
- the nature of any site, PAD or landscape feature of Aboriginal cultural value
- the nature of any artefacts observed
- all mature trees, rock outcrops suitable for shelter, art, engraving or grinding observed were inspected.

Visibility was recorded in terms of the percentage of the ground surface upon which artefacts may be sighted. Exposure was recorded as areas within which disturbance (natural or anthropogenic) has removed or exposed the upper soil layer to permit the detection of artefacts (if any) that were formerly located in a subsurface context. This information was used to calculate effective coverage in accordance with the *Code of Practice for Archaeological investigation of Aboriginal objects* (DECCW now OEH 2010).

All sites and artefacts located were recorded in accordance with the requirements of the *Code of Practice for Archaeological investigation of Aboriginal objects* (DECCW 2010). The archaeological, Aboriginal and cultural significance of the sites/artefacts was discussed with the registered Aboriginal parties participating in the survey as was any requirements for subsurface testing of sites and PADs as part of the assessment process or post approval.

In relation to the evaluation of landscape units in terms of their Aboriginal archaeological potential, based on the Aboriginal archaeological pattern for the region, particular focus was placed on landforms associated with water resources. In this manner, all watercourses (and the associated banks and terrace landforms) were evaluated with reference to:

- reliability of the watercourse (that is, prior to the impacts on historical landuse, was the creek line likely to have been a source of permanent, semi-permanent or occasional water and associated resources). This was evaluated based on consideration of historical information, morphology of the stream channel, nature of vegetation associated with the watercourse (e.g. is there mature vegetation of the type associated with water resources), current watercourse condition and stream order
- disturbance factors that may have impacted/removed archaeological evidence such as excavation/channelling for agricultural purposes
- association with other landforms likely to be of high archaeological potential such as source-bordering dunes or extensive terraces.

With reference to these factors, the archaeological potential of the landforms bordering each watercourse were rated as:

- low archaeological potential - likely to contain only limited archaeological evidence and/or highly disturbed
- moderate archaeological potential – may contain archaeological evidence but not likely to be extensive and may have been subject to partial disturbance
- high archaeological potential – areas predicted as likely to contain archaeological evidence in comparatively high quantities and that have not been subject to a sufficient level of disturbance to result in significant impacts/harm to archaeological deposits, particularly where there was a potential for archaeological deposits to be present at considerable depth.

## 6.2 Survey coverage

The description of survey coverage is divided between vehicle coverage and pedestrian survey effort.

### 6.2.1 Vehicle survey

It is acknowledged that vehicle survey is not a sufficient strategy to allow for the identification of sites within the landscape. However, given the highly disturbed nature of the majority of the proposal site, it was considered appropriate to use vehicle survey to opportunistically identify any additional areas that may warrant pedestrian survey and also to obtain a broader understanding of the general environment of the proposal site and additional assessment areas, including the nature of disturbance. Given the very low levels of visibility within the proposal site and additional assessment areas (as will be discussed further below), vehicle survey also provided the opportunity to identify areas of enhanced visibility suitable for pedestrian inspection.

Vehicle survey was undertaken along the entirety of the existing rail corridor within the proposal site (with the exception of the operational line through the developed part of Moree, which could not be driven on due to rail safety issues) and on selected access roads that were not subject to pedestrian survey. Following the completion of the survey, it was identified that the proposal site would include an area of land along Jones Avenue, Moree and a portion of the existing rail corridor to the north of North Star station. Consistent with the approach applied to the operational line through Moree the area of land along Jones Avenue, Moree was not subject to vehicle survey. The portion of the existing rail corridor to the north of North Star within the proposal site was subject to vehicle survey.

During the vehicle survey, the vehicle was halted at all identifiable watercourses (particularly mapped watercourses) to evaluate the levels of modification and disturbance at each watercourse and to identify if pedestrian survey was warranted. Similarly, the vehicle was halted in the vicinity of any proposed works to be located outside the existing rail corridor and consideration was given to the levels of visibility, nature of the landforms and accessibility of any works outside the existing rail corridor.

During the vehicle survey, drainage lines that were identified as having low archaeological potential and not warranting further pedestrian survey primarily consisted of low order drainage lines that had been significantly modified, including those that appear to have been created through the establishment of road and rail culverts and/or implementation of drainage measures in adjoining agricultural land.

During the vehicle survey, it was identified that the proposal site outside the existing rail corridor proposed for ancillary works (such as construction compounds) that were not assessed during pedestrian survey (as will be discussed below) typically comprised highly disturbed agricultural land. The majority of these areas in agricultural land were subject to cultivation at the time of survey and visibility was poor to nil. Given the potential for the location of construction compounds to be altered during the detailed design process, it was agreed that these areas should not be the focus of survey effort.

The additional assessment areas include proposed access roads that will utilise existing formed access roads. For these additional assessment areas, it was discussed that the primary concern was potential impacts from road widening, particularly with reference to scarred trees. Recommendations regarding the need for any further survey and consideration of the location of ancillary works are provided in **Section 10.2.**

### 6.2.2 Pedestrian survey

Survey areas are described in **Table 6.1**. The location of survey areas are shown in figures in **Appendix 1** and plates showing typical views within the survey areas are included in **Appendix 5**. **Table 6.1** also identifies where any of the four previously recorded sites were located within or in proximity to specified survey areas and where any new sites were identified within the survey area. Except where noted, pedestrian survey was only undertaken within the proposal site. However, as part of the survey, the levels of disturbance were noted in the adjoining additional assessment areas and an archaeological potential rating is provided in **Table 6.1**, where relevant.

**Table 6.1 Survey Areas**

Area Number	Landform	Area (m2)	Area inspected (m <sup>2</sup> )	Visibility %	Exposure %	Effective Cover-age (m <sup>2</sup> )	Effective Cover-age (%)	Sites	Archaeological potential rating	Comments
1	Gehan Creek	5267	600	5%	5%	1.5	0.02	None	Low within proposal site, low within additional assessment area	
2	Myall Hollow Creek	5761	520	5%	5%	1.3	0.02	None	Low within proposal site, low within additional assessment area	
3	Boggy Creek North	4859	400	5%	5%	1	0.02	None	Low within proposal site, low within additional assessment area	
4	Boggy Creek South	5681	300	5%	5%	0.75	0.01	None	Low within proposal site, low within additional assessment area	
5	Bulldog Creek	5001	75	5%	5%	0.1875	0.00	None	Low within proposal site, moderate within additional assessment area	
6	10 Mile Creek North	5097	110	5%	5%	0.275	0.01	None	Low within proposal site, low within additional assessment area	
7	10 Mile Creek South	6591	110	5%	5%	0.275	0.00	None	Low within proposal site, moderate within additional assessment area to west of proposal site	
8	Galathera Creek	5115	105	5%	5%	0.2625	0.01	None	Low within proposal site, moderate within additional assessment area	
9	Tarlee Creek North	4881	45	5%	5%	0.1125	0.00	None	Low within proposal site, low within additional assessment area	
10	Tahlee Creek South	15418	1500	70%	10%	105	0.68	None	Low within proposal site, low within additional assessment area	

Area Number	Landform	Area (m2)	Area inspected (m <sup>2</sup> )	Visibility %	Exposure %	Effective Cover-age (m <sup>2</sup> )	Effective Cover-age (%)	Sites	Archaeological potential rating	Comments
11	Bobbiwaa Creek	5010	110	5%	5%	0.275	0.01	None	Low within proposal site, moderate within additional assessment area outside proposal site on west of existing rail corridor	
12	Spring Creek	5128	240	10%	10%	2.4	0.05	None	Low within proposal site, low-moderate within additional assessment area	
13	Lower slopes (gently inclined)	9280	900	70%	10%	63	0.68	None	Low within proposal site, low within additional assessment area	
14	Tookey Creek and adjoining lower slopes (gently inclined). Survey included additional assessment area to east of proposal site	60070	2400	60%	10%	144	0.24	NNS IA2 NNS IA3	Low within proposal site, low within additional assessment area	Contains sites NNS IA2 and IA3 but both artefacts potentially imported with gravels
15	Lower slopes (gently inclined). Survey included additional assessment area to east of proposal site	147929	5000	50%	30%	750	0.51	NNS AS1	Low within portion of proposal site within existing rail corridor, moderate within portion of proposal site outside existing rail corridor and additional assessment area (proposed Newell Highway overpass)	
16	Tookey Creek North and adjoining gently inclined slopes	15071	1500	40%	10%	60	0.40	None	Low within proposal site within existing rail corridor, low-moderate within proposal site outside existing rail corridor and additional assessment area	

Area Number	Landform	Area (m2)	Area inspected (m <sup>2</sup> )	Visibility %	Exposure %	Effective Cover-age (m <sup>2</sup> )	Effective Cover-age (%)	Sites	Archaeological potential rating	Comments
17	Tookey Creek Tributary and adjoining gently inclined slopes	13175	780	60%	20%	93.6	0.71	NNS IA4	Low within proposal site, low within additional assessment area	
18	Gently inclined slopes. Survey included additional assessment area to east of proposal site	16136	660	90%	20%	118.8	0.74	NNS IA5	Low within proposal site, low within additional assessment area	
19	Waterloo Creek	14853	75	5%	5%	0.1875	0.00	None	Low within proposal site, moderate within additional assessment area	
20	Gently inclined slopes	15233	1500	60%	20%	180	1.18	None	Low within proposal site, low within additional assessment area	
21	Bumble Creek	5495	30	5%	5%	0.075	0.00	None	Low within proposal site, moderate within additional assessment area on eastern side of rail line (low to west)	
22	Gurley Creek	8257	30	5%	5%	0.075	0.00	None	Low within proposal site, moderate within additional assessment	
23	Tycannah Creek 1	5488	30	5%	5%	0.075	0.00	None	Low within proposal site, moderate within additional assessment area	
24	Tycannah Creek 2	4584	30	5%	5%	0.075	0.00	None	Low within proposal site, moderate within additional assessment area	

Area Number	Landform	Area (m2)	Area inspected (m <sup>2</sup> )	Visibility %	Exposure %	Effective Cover-age (m <sup>2</sup> )	Effective Cover-age (%)	Sites	Archaeological potential rating	Comments
25	Tycannah Creek 3	9552	30	5%	5%	0.075	0.00	None	Low within proposal site, low-moderate within additional assessment area	
26	Tycannah Creek 4	5132	30	5%	5%	0.075	0.00	None	Low within proposal site, low within additional assessment area	
27	Very gently inclined slopes to flats	13664	1350	10%	10%	13.5	0.10	None	Low within proposal site, low within additional assessment area	
28	Very gently inclined slopes	17953	2280	40%	20%	182.4	1.02	None	Low within proposal site, low within additional assessment area	
29	Upper slopes (gently inclined) and crest	23838	4800	30%	10%	144	0.60	None	Low within proposal site, low within additional assessment area	
30	Very gently inclined slopes	5450	570	80%	20%	91.2	1.67	None	Low within proposal site, low within additional assessment area	
31	Very gently inclined slopes and artificial drain	32570	3400	60%	10%	204	0.63	None	Low within proposal site, low within additional assessment area	
32	Gentle to moderately inclined slopes	11592	1140	50%	20%	114	0.98	None	Low within proposal site	
33	Gently inclined slopes north of Spring Creek	25122	750	10%	10%	7.5	0.03	None	Low within proposal site, low within additional assessment area	
34	Gently inclined slopes	3876	550	30%	30%	49.5	1.28	NNS AS2	Low within proposal site	



Area Number	Landform	Area (m2)	Area inspected (m <sup>2</sup> )	Visibility %	Exposure %	Effective Cover-age (m <sup>2</sup> )	Effective Cover-age (%)	Sites	Archaeological potential rating	Comments
35	Gently inclined slopes	38008	6500	60%	30%	1170	3.08	None	Low within proposal site, low within additional assessment area	
36	Gently inclined slopes	26571	2400	70%	20%	336	1.26	None	Low within proposal site, low within additional assessment area	
37	Gently inclined slopes	7784	690	60%	10%	41.4	0.53	None	Low within proposal site, low within additional assessment area	
38	Gently inclined slopes	16260	2160	60%	30%	388.8	2.39	None	Low within proposal site, low within additional assessment area	
39	Duffys Creek/Mehi River overflow	10716	1050	20%	10%	21	0.20	None	Low within proposal site, moderate within additional assessment area	
40	Skidders Creek	7080	110	20%	10%	2.2	0.03	10-3-0035 adjacent	Low within proposal site within existing rail corridor, low to moderate in proposal site outside existing rail corridor and eastern additional assessment area and moderate in western portion of additional assessment area	
41	Gwydir River tributary	6157	30	5%	5%	0.075	0.00	None	Low within proposal site, low within additional assessment area	

Area Number	Landform	Area (m2)	Area inspected (m <sup>2</sup> )	Visibility %	Exposure %	Effective Cover-age (m <sup>2</sup> )	Effective Cover-age (%)	Sites	Archaeological potential rating	Comments
42	Gwydir River terraces	111806	2670	50%	10%	133.5	0.12	None	Low within proposal site to depth of current disturbance, moderate to high within proposal site and additional assessment area below depth of current disturbance. This assessment is based on the potential for deep archaeological deposits within terrace landforms, such that archaeological deposits may be present below depth of current disturbance	
43	Gwydir River floodplain	12443	3200	70%	10%	224	1.80	NNS IA6	Low within proposal site, low within additional assessment area	
44	Gently inclined slopes	32473	3000	40%	10%	120	0.37	None	Low within proposal site, low within additional assessment area	
45	Gently inclined slopes	56562	7600	90%	10%	684	1.21	NNS IA7 NNS IA12 NNS IA13	Low within proposal site, low within additional assessment area	Low despite presence of existing sites due to substantial impacts of agricultural land use
46	Gently inclined slopes bordering formed road. Entire survey area outside proposal site	32429	6800	10%	10%	68	0.21	NNS AS3	Low within additional assessment area (does not include proposal site). NNS AS3 identified outside additional assessment area	Road surface gravelled therefore visibility and exposure only provided for road shoulders

Area Number	Landform	Area (m2)	Area inspected (m <sup>2</sup> )	Visibility %	Exposure %	Effective Cover-age (m <sup>2</sup> )	Effective Cover-age (%)	Sites	Archaeological potential rating	Comments
47	Gently inclined slopes bordering formed road. Survey included additional assessment area to north of proposal site	5460	800	80%	20%	128	2.34	None	Low within proposal site, low within additional assessment area	
48	Drainage line (first order)	3776	500	100%	20%	100	2.65	NNS IA8	Low within proposal site, low within additional assessment area	
49	Gently inclined slopes	16499	750	60%	20%	90	0.55	None	Low within proposal site	
50	Gently inclined slopes	27640	2775	80%	20%	444	1.61	NNS IA9	Low within proposal site, low within additional assessment area	
51	Bunna Creek South	12015	30	5%	5%	0.075	0.00	None	Low within proposal site, low within additional assessment area	
52	Gil Gil Creek and adjoining lower slopes	12072	2160	20%	10%	43.2	0.36	NNS AS4	Low within proposal site, low to moderate in additional assessment area	Agricultural land use has had significant impacts on additional assessment areas , reducing potential
53	Gently inclined slopes	28134	2940	90%	40%	1058.4	3.76	None	Low within proposal site, low within additional assessment area	

Area Number	Landform	Area (m2)	Area inspected (m <sup>2</sup> )	Visibility %	Exposure %	Effective Cover-age (m <sup>2</sup> )	Effective Cover-age (%)	Sites	Archaeological potential rating	Comments
54	Croppa Creek South and adjoining gently inclined slopes. Survey included additional assessment area to east of proposal site	23101	1950	50%	10%	97.5	0.42	None	Low within proposal site, low to moderate within additional assessment area	Contrast in assessment with main channel and north side reflects impacts on south side from ongoing agricultural use, which is less pronounced on northern side
55	Croppa Creek and adjoining slopes and terraces. Survey included additional assessment area to east of proposal site	15691	810	20%	5%	8.1	0.05	None	Low within proposal site to depth of current disturbance, moderate within proposal site and additional assessment area below depth of current disturbance. This assessment is based on the potential for deep archaeological deposits within terrace landforms, such that archaeological deposits may be present below depth of current disturbance	

Area Number	Landform	Area (m2)	Area inspected (m <sup>2</sup> )	Visibility %	Exposure %	Effective Cover-age (m <sup>2</sup> )	Effective Cover-age (%)	Sites	Archaeological potential rating	Comments
56	Mehi River and terraces	43907	1500	30%	10%	45	0.10	10-3-0032	Low within proposal site to depth of current disturbance, moderate to high within proposal site and additional assessment area below depth of current disturbance. This assessment is based on the potential for deep archaeological deposits within terrace landforms, such that archaeological deposits may be present below depth of current disturbance	
57	Floodplain (Camurra bypass)	41050	3000	5%	5%	7.5	0.02	None	Low within proposal site to depths of approximately 50cm (based on likely depth of modern flood deposit that is unlikely to contain archaeological deposit and the extent of agricultural and disturbance), moderate within proposal site below this depth. This assessment is based on the potential for deep archaeological deposits within terrace landforms, such that archaeological deposits may be present below depth of current disturbance	
58	Halls Creek and adjoining very gently inclined slopes	24240	2400	40%	10%	96	0.40	None	Low within proposal site, low within additional assessment area	

Area Number	Landform	Area (m2)	Area inspected (m <sup>2</sup> )	Visibility %	Exposure %	Effective Cover-age (m <sup>2</sup> )	Effective Cover-age (%)	Sites	Archaeological potential rating	Comments
59	Very gently inclined lower slopes	32040	3000	60%	10%	180	0.56	None	Low within proposal site, low within additional assessment area	
60	Yallaroi Creek	5908	30	5%	5%	0.075	0.00	None	Low within proposal site, moderate within additional assessment area	
61	Tackinbri Creek tributary	5031	30	5%	5%	0.075	0.00	None	Low within proposal site, moderate within additional assessment area	
62	Gently inclined slopes	4787	495	80%	10%	39.6	0.83	None	Low within proposal site	
63	Gently inclined slopes	3749	1000	90%	50%	450	12.00	NNS IA10	Low within proposal site, low within additional assessment area	
64	Gently inclined slopes	5520	740	80%	10%	59.2	1.07	None	Low within proposal site, low within additional assessment area	
65	Gently inclined slopes	11248	990	40%	10%	39.6	0.35	None	Low within proposal site, low within additional assessment area	
66	Mungle Creek South	5223	90	5%	5%	0.225	0.00	02-4-0073	Low within proposal site, low within additional assessment area	
67	Gently inclined slopes	627	125	90%	20%	22.5	3.59	NNS AS7	Low within proposal site, low within additional assessment area	
68	Gently inclined slopes	12670	4300	20%	10%	86	0.68	NNS AS5 NNS AS6	Low within proposal site, low to moderate within additional assessment area	

Area Number	Landform	Area (m2)	Area inspected (m <sup>2</sup> )	Visibility %	Exposure %	Effective Cover-age (m <sup>2</sup> )	Effective Cover-age (%)	Sites	Archaeological potential rating	Comments
69	Gently inclined slopes	672	90	40%	10%	3.6	0.54	None	Low within proposal site, low within additional assessment area	
70	Gently inclined slopes	1515	75	60%	10%	4.5	0.30	NNS IA11	Low within proposal site, low within additional assessment area	
71	Very gently inclined slopes	70000	17500	60%	20%	2100	3.00	None	Low within proposal site	
72	Gently inclined slopes north of 10 Mile Creek	27475	4500	60%	20%	540	1.97	None	Low within proposal site, low within additional assessment area	
73	Very gently inclined slopes bordering Bobbiwaa Creek	11023	2960	80%	30%	710.4	6.44	None	Low within proposal site, low within additional assessment area	

### 6.3 Assessment of Archaeological Potential

As shown in **Table 6.1**, the level of effective coverage within the majority of pedestrian transects was very low. This is more a reflection of the range of factors that result in low levels of visibility and exposure within the proposal site and additional assessment areas, rather than a lack of survey effort. This makes the evaluation of archaeological potential a key factor in adequate assessment. This evaluation was undertaken with reference to the criteria listed in **Section 6.1**, with key additional information that affects the evaluation of archaeological potential provided in the comments section.

Forty nine survey areas were identified as having low archaeological potential within both the proposal site and additional assessment area. This assessment was based on a range of factors including the relatively high levels of disturbance within these areas, the nature of the landforms they contained and (in some instances) the lack of proximity to reliable water sources. Where these areas were currently associated with a watercourse, in many instances there was sufficient evidence to suggest that the watercourse represents a relatively recent formation and is unlikely to have been present in its current format prior to agricultural modification of the landscape. As identified in **Table 6.1**, there are archaeological sites identified within a number of the areas assessed as having low archaeological potential. However, these sites consist primarily of isolated artefacts, with the artefact scatters all consisting of relatively low numbers of artefacts in a highly disturbed context, as will be discussed in **Section 6.4**.

An additional seven survey areas were identified as having low-moderate archaeological potential within all or part of the survey unit. Of these, only two survey areas (16 and 40) were assessed as having low-moderate archaeological potential within the portion of the proposal site outside the current rail corridor.

The 17 areas of moderate or high archaeological potential (with the exception of survey unit 15) are associated with watercourses that appear to have provided a relatively reliable source of water (based on the factors discussed in **Section 4.1.1**) and would have provided suitable resources to support Aboriginal people camping in the area. Based on the archaeological pattern for the region, these areas are likely to have contained higher numbers and densities of stone artefacts than other, less well-resourced portions of the proposal site and additional assessment areas. However, the preservation of archaeological material is closely linked to disturbance factors. Consequently, due to the extent of disturbance within the existing rail corridor, the level of archaeological potential within the existing rail corridor (even immediately bordering reliable watercourses) for all survey areas except 42, 55, 56 and 57, is low. This reflects the extremely significant nature of the impacts associated with the construction of the existing rail corridor and its ongoing maintenance, which in turn dictates that it is highly unlikely that intact archaeological deposits will be present within the existing rail corridor.

Survey area 15 is the only area of moderate or higher archaeological potential that is not directly associated with a watercourse. This survey unit consists of an area of very gently inclined slopes with exposed gravelly soils leading to Tookey Creek north. Whilst not containing a mapped drainage line, these slopes contain areas that appear to convey water during heavy rain and consist of a slightly elevated landform bordering the readily inundated flats and lower elevations slopes along Tookey Creek. These factors may have made the area more attractive to Aboriginal people than the surrounding landforms, as evidenced by the presence of site NNS AS1, which contained a comparatively high number of artefacts. The portion of the proposal site outside the existing rail corridor and the additional assessment area adjoining survey area 15 have been subject to disturbance from agricultural activities and road construction. However, the extent of disturbance is not sufficient to totally negate its archaeological potential as there is insufficient evidence to demonstrate that all artefact bearing deposits have been impacted, particularly in areas where impacts have been limited to agricultural activities. The portion of the proposal site outside the existing rail corridor and the additional assessment area adjoining survey area 15 were consequently assessed as having moderate potential.



Survey units 42, 55, 56 and 57 are an exception in relation to the assessment of potential within the existing rail corridor. These survey units contain terrace landforms associated with major watercourses. As discussed in **Section 5.4**, terraces and alluvial landforms are attractive camping locations for Aboriginal people due to the availability of ample resources. These landforms are regularly impacted by flooding, which can act to both eradicate (high intensity floods that wash away artefacts) or preserve archaeological deposits (gentle floods that can deposit a layer of sediment over surface artefacts, building a protective layer above the archaeological deposit that reduces the likelihood of it being subject to impact), with the latter being the more frequent flood mechanism in this region.

This establishes the potential for multiple periods of deposition of capped archaeological deposits, within which different periods of time are separated (or stratified) by layers of flood deposit. Stratified sites have much higher archaeological value as they allow for interpretation of change through time. The archaeological potential of these landforms does not relate to artefacts that may be deposited/moved during large flood events but to the potential for former soil surfaces with intact archaeological deposits to remain present at depth and capped by more recent flood deposits.

Within these landforms, it is therefore possible that archaeological deposits may exist below the depth of current disturbance within the rail corridor. Consequently, the level of archaeological potential in survey units 42, 55 and 56 is moderate or moderate to high within the existing rail corridor at depths below current disturbance. It is recognised that the outcomes of previous archaeological investigation within the terraces of the Mehi River (refer to **Section 5.2.4**) did not identify any subsurface deposits. However, as discussed above, these excavations were limited in extent and depth, comprise a sample of less than 0.05% of the terrace formation within the proposal site and therefore these results cannot be extrapolated to the entirety of the associated terrace system within the proposal site.

Survey unit 57 (Camurra bypass) is located outside the existing rail corridor but within the proposal site on a terrace of the Gwydir River. It has been subject to disturbance associated with vegetation clearance and pastoral use and appears to be subject to regular flooding when the Gwydir overtops its banks. Given the nature of flooding in this region, an arbitrary figure of 50 centimetres is taken as a likely depth of post-1800s flood deposit (although this may vary somewhat) and the depth of potential disturbance from historical land use. Below this depth, the survey unit is assessed as having moderate potential.

The areas of moderate or higher archaeological potential within the proposal site are shown in **Figure 6.1-6.4**.



Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

#### Legend

- ▬ Proposal Site
- ▬ Additional Assessment Area
- ▨ Area of Moderate Archaeological Potential
  - Rail Line Chainage
- ◆ New Sites Recorded During Survey

File Name (A4): R06/3607\_237.dgn  
20170609 14.46

FIGURE 6.1  
Area of Moderate  
Archaeological Potential  
(Survey Area 15)





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 0.25 0.5 1.0 km  
1:20 000

#### Legend

- Proposal Site
- Additional Assessment Area
- Area of Moderate Archaeological Potential (50cm deep)
- Area of Moderate Archaeological Potential (below depth of current disturbance)
- Rail Line Chainage

File Name (A4): R06/3607\_238.dgn  
20170609 15:39

FIGURE 6.2

Area of Moderate to High  
Archaeological Potential  
(Survey Area 42 and 57)





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |  |
|--|--|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site  | <span style="color: red;">●</span> Artefact and Potential Archaeological Deposit |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area   | <span style="color: green;">●</span> Potential Archaeological Deposit            |
| <span style="background-color: yellow; border: 1px solid black; padding: 2px;"> </span> Area of Moderate to High Archaeological Potential (below depth of current disturbance) | <span style="color: green;">🌳</span> Scarred Tree or Carved Tree                 |
| <span style="color: black;">—</span> Rail Line Chainage  | <span style="color: red;">✕</span> Bora/Ceremonial                               |
| <span style="color: red;">●</span> Artefact Scatter  | <span style="color: orange;">●</span> Isolated Find                              |
|  | <span style="color: blue;">✕</span> Habitation Structure                         |

File Name (A4): R06/3607\_239.dgn  
20170609 15.09

FIGURE 6.3

Area of Moderate to High  
Archaeological Potential  
(Survey Area 56)



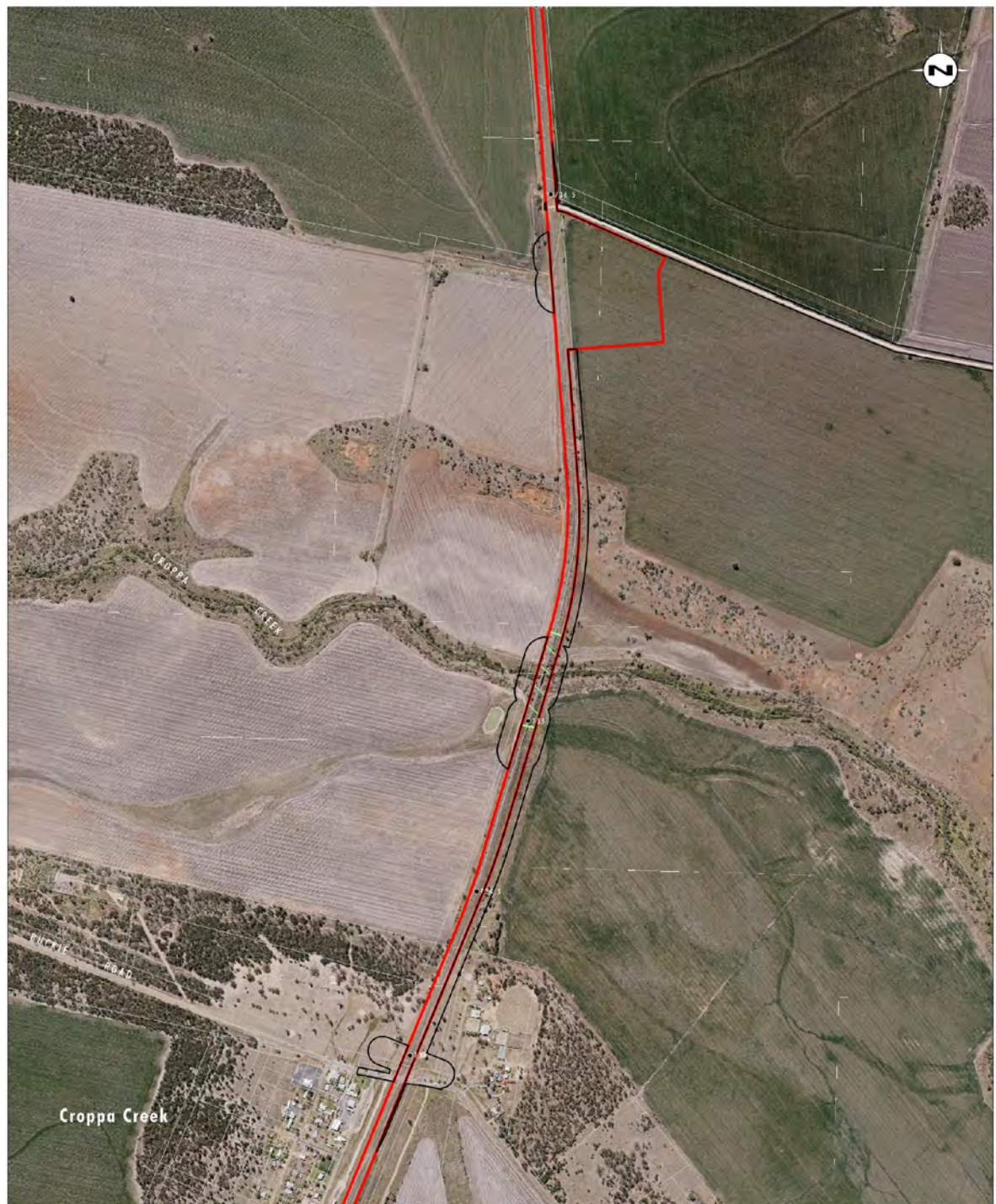


Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

#### Legend

- Proposal Site
- Additional Assessment Area
- Area of Moderate Archaeological Potential
  - Rail Line Chainage

FIGURE 6.4

Area of Moderate  
Archaeological Potential  
(Survey Area 55)

## 6.4 Archaeological sites

During the survey, a total of 19 new sites were recorded, comprising 12 isolated artefacts and 7 artefact scatters, as described in **Table 6.2** and shown on figures in **Appendix 1**.

**Table 6.2 New sites identified during survey**

Site name	Site type	Artefacts	Description	Location
NNS IA2	Isolated artefact	Silcrete broken flake	Artefact present within gravel lag on an access track exposure on a gently inclined slope. Despite excellent visibility along the track, no further artefacts were present in the adjoining section of track. The track contained introduced gravel and it is possible artefact was transported to site with gravels.	20m west of proposal site, within additional assessment area, refer to <b>Figure A14</b>
NNS IA3	Isolated artefact	Quartz flake	Artefact present within gravel lag on an access track exposure on a gently inclined slope. Despite excellent visibility along the track, no further artefacts were present were present in the adjoining section of track. The track contained introduced gravel and it is possible artefact was transported to site with gravels.	45m west of proposal site, within additional assessment area, refer to <b>Figure A15</b>
NNS IA4	Isolated artefact	Quartzite flake	Artefact present within an area of exposure resulting from earthworks within the rail corridor. Despite good visibility in the adjoining area, no further artefacts were present were present.	10m west of proposal site, within additional assessment area, refer to <b>Figure A16</b>
NNS IA5	Isolated artefact	Chert flake	Artefact present within an area of exposure resulting from earthworks within the rail corridor and subsequent erosion. Despite good visibility in the adjoining area, no further artefacts were present were present.	15m west of proposal site, within additional assessment area, refer to <b>Figure A17</b>

Site name	Site type	Artefacts	Description	Location
NNS IA6	Isolated artefact	Mudstone flake	Artefact present within area of earthworks bordering rail line. Earthworks relate to both rail maintenance and the adjacent agricultural land use. Despite excellent visibility in the adjoining area, not further artefacts were present.	Within proposal site, refer to <b>Figure A34</b>
NNS IA7	Isolated artefact	Silcrete broken flake	Artefact present within area of earthworks within existing rail corridor. Earthworks relate to both rail maintenance and the adjacent agricultural land use. Despite excellent visibility in the adjoining area, not further artefacts were present.	Within proposal site, refer to <b>Figure A36</b>
NNS IA8	Isolated artefact	Silcrete flake	Artefact present within area of earthworks within existing rail corridor. Earthworks relate to both rail maintenance and the adjacent agricultural land use. Despite excellent visibility in the adjoining area, not further artefacts were present.	Within proposal site, refer to <b>Figure A39</b>
NNS IA9	Isolated artefact	Silcrete broken flake	Artefact present within area of earthworks within existing rail corridor. Earthworks relate to both rail maintenance and the adjacent agricultural land use. Despite excellent visibility in the adjoining area, not further artefacts were present.	Within proposal site, refer to <b>Figure A41</b>
NNS IA10	Isolated artefact	Silcrete retouched flake	Artefact present within large area of erosion exposure on access track within existing rail corridor and adjoining agricultural paddock. The area has been subject to significant gully erosion, resulting in the exposure of extensive deposits of fractured silcrete. Only one artefact with definitive flake characteristics was identified.	Within proposal site, refer to <b>Figure A52</b>
NNS IA11	Isolated artefact	Silcrete broken flake	This artefact was present in an exposure surrounding an ant's nest in an area of earthworks within existing rail corridor. Despite good visibility in the surrounding area, no additional artefacts were identified.	Within proposal site, refer to <b>Figure A53</b>

Site name	Site type	Artefacts	Description	Location
NNS IA12	Isolated artefact	Silcrete flake	Artefact present within area of earthworks within existing rail corridor. Earthworks relate to both rail maintenance and the adjacent agricultural land use. Despite excellent visibility in the adjoining area, not further artefacts were present.	Within proposal site, refer to <b>Figure A37</b>
NNS IA13	Isolated artefact	Silcrete retouched flake	Artefact present within area of earthworks within existing rail corridor. Earthworks relate to both rail maintenance and the adjacent agricultural land use. Despite excellent visibility in the adjoining area, not further artefacts were present.	Within proposal site, refer to <b>Figure A37</b>
NNS AS1	Artefact scatter	Quartzite core Fine grained volcanic flake Silcrete core Quartzite flake Flake of unknown material Jasper flake	Artefacts are dispersed across a slightly elevated lower slope above Tookey Creek, with the site area potentially extending for 400m north-south by 200 m east-west (extent of accessible area). Soils have very high gravel content, with artefacts present in the gravel lag. Levels of exposure and visibility within the area are high due to the presence of a number of vehicle tracks, some excavation (potentially for road construction material) and ongoing sheetwash erosion. The site area is bisected by minor flow lines, none of which are established drainage line. There is the potential for additional surface artefacts to be present but not identified due to being obscured by leaf litter/gravel. The area is assessed as having moderate archaeological potential (as discussed above).	One artefact within proposal site, remainder within additional assessment area, refer to <b>Figure A15</b>
NNS AS2	Artefact scatter	Mudstone core Silcrete core	Artefacts within an area of exposure within an area of 5 m by 3 m. The exposure was the result of earthworks and subsequent erosion within the existing rail corridor. Despite relatively good visibility in the adjoining area, no further artefacts were present were present.	10m east of proposal site, refer to <b>Figure A22</b>



Site name	Site type	Artefacts	Description	Location
NNS AS3	Artefact scatter	Quartz flake Quartzite flake	Artefacts present within large erosion exposures within a road reserve that also borders a large agricultural drain subject to significant erosion on private property. The area containing the artefacts has been subject to substantial erosion and despite good visibility, no artefacts were identified in the surrounding area.	40m west of additional assessment area
NNS AS4	Artefact scatter	Silcrete broken flake Silcrete retouched flake	Artefacts present within access track within existing rail corridor within an area of 35 m in length. The area containing the artefacts has had recent vehicle traffic on it. Despite good visibility, no further artefacts were present in the adjoining area.	Within 5m east of proposal site, refer to <b>Figure A43</b>
NNS AS5	Artefact scatter	Silcrete broken flake Silcrete retouched flake Quartzite broken flake	These artefacts were present within a minor exposure on an access track within existing rail corridor. The artefacts were present within an area of approximately 3 m in width by 100 m in length to the north-west of an unnamed tributary. Site NNS AS6 is located on the south-east side of the same tributary.	Within proposal site, refer to <b>Figure A55</b>
NNS AS6	Artefact scatter	Silcrete flake Mudstone retouched flake Chalcedony flake Mudstone flake x 2	These artefacts were present within a minor exposure on an access track within existing rail corridor. The artefacts were present within an area of approximately 3 m in width by 30 m in length. No other artefacts were identified within the site area.	Three artefacts within proposal site, one artefact within 5m of proposal site, refer to <b>Figure A55</b>
NNS AS7	Artefact scatter	Silcrete flake x 2 Silcrete broken flake Chert core	These artefacts were located within a level crossing and were within the existing rail corridor. Gravel has been imported to form the level crossing and it is considered likely that the artefacts may have been imported with the gravels. The artefacts are contained within an area measuring approximately 25m x 3m. Despite excellent visibility on the access track, no additional artefacts were present.	Within proposal site, refer to <b>Figure A53</b>

Of the four AHIMS registered (previously recorded) sites associated with the proposal site, one previously identified site, an isolated artefact (#2-4-0073), was no longer visible. Sites #10-3-0035 (Duffys Creek) and #10-3-0032 (Steel Bridge Camp) did not have any visible manifestation within the proposal site but are both associated with areas identified as having moderate or higher archaeological potential. The previously recorded scarred tree (#10-6-0048) was in the same condition as the original recording.

The previously recorded scarred tree site #10-6-0048 was observed from the existing rail corridor but was not subject to specific survey as it is located outside the proposal site. Given that the condition of the site had not changed, the surrounding trees did not exhibit scars and the ground surface visibility was poor, the Aboriginal party representatives identified that it was not necessary to reinspect the site on foot. The recorded location of site #2-4-0073 was surveyed on foot however the artefact was no longer present. This is not surprising given that the artefact was located within a modified creek channel that had been clearly affected by recent heavy rains and that visibility within the area was significantly reduced.

Of the archaeological sites identified above, 14 are within the proposal site (10-3-0032, 10-3-0035, NNS IA6-IA13, NNSAS1, 5-7). Three are located within 10m of the proposal site (NNS IA4, NNS AS2 and 4), within the additional assessment area. Five are located within 15 to 45m of the proposal site (10-6-0048, 2-4-0073, NNS IA2, 3 and 5 within the additional assessment areas) and one (NNS AS3) is located adjacent to a public road that is not part of the proposal site but may be used for access. The artefacts within site NNS AS3 are located over 20 metres from the current road edge.

## 6.5 Summary

The survey of the proposal site and additional assessment areas comprised both vehicle and pedestrian survey in order to ensure maximum coverage of the area, with a focus on areas the predictive model indicated may have higher archaeological potential, including previously recorded sites. During the survey, it was noted that the existing rail corridor has been subject to extensive disturbance, with the sections of the proposal site within the existing rail corridor assessed as having low archaeological potential, with the exception of the terrace landforms bordering the Mehi and Gwydir Rivers and Croppa Creek. In these three survey areas, it was recognised that deposits may be present below the depth of current disturbance and depth of modern flood deposit. Within the terraces immediately bordering the Mehi and Gwydir Rivers, this level of potential is assessed as moderate to high based on the permanent nature of these watercourses. The Croppa Creek terraces and the section of Gwydir River terraces upon which the Camurra bypass is located were assessed as having moderate potential due to the slightly lesser nature of Croppa Creek (when compared to the Mehi and Gwydir Rivers) and the distance between the Camurra bypass terraces and the main river channel.

An additional 13 areas were identified as having moderate or higher archaeological potential. Of these, the assessment of moderate or higher archaeological potential applies only to the additional assessment area (and not the proposal site) within 12 areas, with only area 15 having moderate archaeological potential within the proposal site outside the existing rail corridor. Survey area 40 also has moderate archaeological potential but only within the western additional assessment area, with the eastern additional assessment area and portion of the proposal site outside the existing rail corridor having low to moderate archaeological potential. Survey area 16 also had low to moderate archaeological potential within the portion of the proposal site outside the existing rail corridor. All other areas of low to moderate archaeological potential were limited to the additional assessment areas associated with survey areas 12, 25, 52, 54 and 68.

A total of 19 new sites were identified during the survey, of which 14 are located within the proposal site and 3 are within 10 metres of the proposal site. With the exception of sites NNS AS1 and NNS AS7, these sites all consisted of isolated artefacts or artefact scatters containing less than 5 artefacts. It is important to

note that the artefacts within NNS AS7 are considered unlikely to be in-situ and are likely to have been imported to the site with gravel materials.

One previously identified site, an isolated artefact (#2-4-0073), was no longer visible. Sites #10-3-0035 (Duffys Creek) and #10-3-0032 (Steel Bridge Camp) did not have any visible manifestation within the proposal site but are both associated with areas identified as having moderate or higher archaeological potential. The previously recorded scarred tree (#10-6-0048) was in the same condition as the original recording.

The sites located in areas of low archaeological potential all comprised sites containing low numbers of artefacts in highly disturbed contexts. The area surrounding site NNS AS1 was assessed as having moderate potential based on the nature of the landform, the presence of artefacts across a relatively large area, the low levels of visibility (potentially meaning that additional artefacts were present but not visible) and the lower level of disturbance in this area when compared to other areas subject to cultivation.

## 7.0 Significance assessment

The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 1999 (The Burra Charter) (Australia ICOMOS. 2013) was written to explain the basic principles and procedures to be followed in looking after important places. As such it comprises a set of best practice principles and procedures for heritage conservation. The Burra Charter defines cultural significance as meaning 'aesthetic, historic, scientific or social value for past, present or future generations' (Article 1.2). Cultural significance is defined as being present in the 'fabric, setting, use, associations, meanings, records, related places and related objects'. The fabric of a place refers to its physical material and can include built elements, sub surface remains and natural material (Australia ICOMOS 2013). Aboriginal cultural heritage is typically assessed according to its social and scientific significance; however other values may also be of importance. The assessment of cultural significance is critical in establishing mitigation and management strategies for cultural heritage (refer to Pearson and Sullivan, 1995:21).

The assessment of significance provides a guideline for determining appropriate mitigation and management strategies. The relationship between levels of significance and management strategies can be summarised as follows:

- high significance – the site should be conserved and protected from the impacts of the proposal, where possible.
- moderate significance – the site should be protected if possible, however, if impacts to the site are unavoidable, appropriate mitigation strategies should be implemented prior to impact.
- low significance – the site should be protected if possible, however, if impacts to the site are unavoidable, the presence of the site should not impede the proposal.

### 7.1 Aboriginal cultural significance

As Aboriginal cultural significance relates to the values of a site, place or landscape to Aboriginal people, it must be determined by Aboriginal people. The registered Aboriginal parties participating in the proposal are therefore the appropriate stakeholders to assess the significance of their cultural heritage. In assessing this significance, a range of factors may be considered and this can extend beyond the physical presence of a site and its contents to intangible aspects of the cultural landscapes. Archaeological material, cultural knowledge, natural resources and landscape attributes may all be considered.

During the survey, representatives of the registered Aboriginal parties identified that the Steel Bridge Camp site and the landforms bordering the Mehi River have high Aboriginal cultural significance, largely due to the associations with the area as a former fringe camp and the part that this location played in the Aboriginal history of Moree. However, it was also identified that the landforms bordering the Mehi River and Gwydir River were key camping locations for Aboriginal people prior to non-Aboriginal settlement of the area and that these areas had high Aboriginal cultural significance.

In addition, the cultural significance of Aboriginal resource plants identified within and surrounding the proposal site was emphasised, including the value that such plants can have in the ongoing health of Aboriginal people. It was acknowledged that the landscape within the existing rail corridor and in areas of heavy agricultural use had been substantially modified but that it is important for Aboriginal people to have the opportunity to access their Country to note this for themselves.

No additional comments were received from Aboriginal parties as part of the review of the draft report.

## 7.2 Archaeological (scientific) significance

The criteria applied to the assessment of archaeological significance are listed in **Table 7.1**. The significance of the sites identified within the proposal site is provided with reference to the criteria described below.

**Table 7.1 Criteria for Assessment of Archaeological Significance of the Sites**

Criterion	Low	Moderate	High
<b>Rarity</b>	The site within the surrounding landscape, its integrity, contents and/or potential for subsurface artefacts, are common within the local and regional context.	The site within the surrounding landscape, its integrity, contents and/or potential for subsurface artefacts, are common within the local context but not the regional context.	The site within the surrounding landscape, its integrity, contents and/or potential for subsurface artefacts, are rare within the local and regional context.
<b>Representativeness</b>	This site, when viewed in relation to its integrity, contents and/or potential for subsurface artefacts, is common within a local and regional context and sites of similar nature (or in better condition) are already set aside for conservation within the region.	This site, when viewed in relation to its integrity, contents and/or potential for subsurface artefacts, is uncommon within a local context but common in a regional context and sites of similar nature (or in better condition) are already set aside for conservation within the region.	This site, when viewed in relation to its integrity, contents and/or potential for subsurface artefacts, is uncommon within a local and regional context and sites of similar nature (or in better condition) are not already set aside for conservation within the locality or region.
<b>Research potential</b>	The site, when viewed in relation to its integrity, contents and/or potential for subsurface artefacts has limited potential to contribute to a greater understanding of how Aboriginal people lived within this area or region.	The site, when viewed in relation to its integrity, contents and/or potential for subsurface artefacts has moderate potential to contribute to a greater understanding of how Aboriginal people lived within this area or region.	The site, when viewed in relation to its integrity, contents and/or potential for subsurface artefacts has high potential to contribute to a greater understanding of how Aboriginal people lived within this area or region.

Criterion	Low	Moderate	High
<b>Education potential</b>	The site is not readily accessible and/or when viewed in relation to its contents, integrity and location in the landscape has limited suitability to be used for educational purposes. Other sites with higher education potential are known to be present in the local area and region.	The site is not readily accessible and/or when viewed in relation to its contents, integrity and location in the landscape provides a tangible example that is suitable to assist in educating people regarding how Aboriginal people lived in this area or region. However, other sites with higher education potential are known or expected to be present in the local area or region.	The site is readily accessible and/or when viewed in relation to its contents, integrity and location in the landscape, provides a very good tangible example that is suitable to assist in educating people regarding how Aboriginal people lived in this area or region. Other sites of higher education potential are generally not known to exist in the local area or region.
<b>Integrity</b>	Stratigraphic integrity of the site has clearly been destroyed due to major disturbance/loss of topsoil. The level of disturbance is likely to have removed all spatial and chronological information.	The site appears to have been subject to moderate levels of disturbance, however, there is a moderate possibility that useful spatial information can still be obtained from subsurface investigation of the site, even if it is unlikely that any useful chronological evidence survives.	The site appears relatively undisturbed and there is a high possibility that useful spatial information can still be obtained from subsurface investigation of the site, even if it is still unlikely that any useful chronological evidence survives.

There are 18 sites (2-4-0073, NNS AS2, NNS AS4-7 and NNS IA2-13) located within or immediately bordering the proposal site that are not associated with areas of moderate or higher archaeological potential. These sites consist of isolated artefacts/artefact scatters containing relatively low numbers of artefacts in a heavily disturbed context. When considered with reference to the criteria listed above, they rate as low for all criteria, resulting in an overall assessment of low archaeological significance. This assessment is also applicable to site NNS AS3 (located outside the proposal site).

**Table 7.2 Summary of archaeological significance for all sites**

Location	Site name	Site type	Archaeological Significance
Within proposal site	NNS IA6	Isolated artefact	Low
	NNS IA7	Isolated artefact	Low
	NNS IA8	Isolated artefact	Low
	NNS IA9	Isolated artefact	Low
	NNS IA10	Isolated artefact	Low
	NNS IA11	Isolated artefact	Low
	NNS IA12	Isolated artefact	Low
	NNS IA13	Isolated artefact	Low
	NNS AS1	Artefact scatter	Moderate
	NNS AS5	Artefact scatter	Low
	NNS AS6	Artefact scatter	Low
	NNS AS7	Artefact scatter	Low
	10-3-0032	PAD, Contact site	Site not visible. See assessment of potential below
	10-3-0035	Artefact scatter, PAD	Site not visible. See assessment of potential below
Within 10m of proposal site	NNS IA4	Isolated artefact	Low
	NNS AS2	Artefact scatter	Low
	NNS AS4	Artefact scatter	Low
Within 15-45m of proposal site	NNS IA2	Isolated artefact	Low
	NNS IA3	Isolated artefact	Low
	NNS IA5	Isolated artefact	Low
	10-6-0048	Scarred tree	Low to moderate
	2-4-0073	Isolated artefact	Low



Location	Site name	Site type	Archaeological Significance
Over one kilometre outside proposal site	NNS AS3	Artefact scatter	Low

Site #10-6-0048 is located outside the proposal site. This site is a scarred tree. Scarred trees are relatively common within the region where mature vegetation remains extant. The site has been recorded and the measurements of the scar are well documented on the relevant site card. It therefore has low value for rarity and research potential. However, scar is a good example of a common scar type seen in the region and the scar is on a living tree that appears to be relatively healthy. On this basis the site is assessed as having moderate representative and integrity value, resulting in an overall assessment of low to moderate archaeological significance.

Site NNS AS1 is an artefact scatter containing six artefacts but with the identified potential to contain higher numbers of artefacts and is within an area assessed as having moderate archaeological potential. Whilst this site has been subject to disturbance from historical land use, the extent of disturbance is substantially lower than that identified for all other artefact scatters. However, the archaeological value of this site and sites #10-3-0032 and #10-3-0035 is largely linked to their archaeological potential and therefore these sites are assessed as part of the broader area in which they are located.

The assessment of the significance of areas of moderate or higher archaeological potential is primarily based on the research potential and potential integrity of additional archaeological deposits that may be contained within these areas. Given that the nature of archaeological deposits in these areas (should any exist) can only be confirmed following further investigation, this assessment is based on potential values only and is closely linked to the level of potential predicted for the area. For example, if artefacts are identified within these landforms but consist of limited numbers of artefacts that are not in their original depositional context (having been moved by flood activity or similar), the re-evaluation of this landform would involve a reduction in significance. However, if stratified deposits are present, the significance would be confirmed as high. Information based on potential values only is presented in **Table 7.3**.

In relation to site #10-3-0032, the assessment of significance also takes into account that archaeological evidence within this area may also include evidence associated with the former Steel Bridge fringe camp at this location. Should this be the case, the evidence would be of high research value in terms of providing insight into fringe camp life in a critical period in the Aboriginal history of Moree.

In summary, the archaeological sites within the proposal site that are not associated with areas of archaeological potential are assessed as having low archaeological potential. Site 10-6-0048 is assessed as having low to moderate archaeological significance. The areas of moderate or higher archaeological potential (including sites 10-3-0032, 10-3-0035 and NNS AS1) are assessed as having moderate or moderate to high archaeological significance based on potential values noting that this may be subject to revision should further investigation be undertaken within these areas.

**Table 7.3 Assessment of archaeological significance of areas of moderate or higher archaeological potential within proposal site**

Survey Area	Landform	Sites	Archaeological potential rating	Archaeological significance (based on potential only)
15	Lower slopes (gently inclined)	NNS AS1	Low within existing rail corridor, moderate within portion outside rail corridor (proposed Newell Highway overpass)	Low within existing rail corridor Moderate within portion outside rail corridor (proposed Newell Highway overpass)
42	Gwydir River terraces		Low to depth of current disturbance, moderate to high below depth of current disturbance	Low to depth of current disturbance Moderate to high below depth of current disturbance
55	Croppa Creek and adjoining slopes and terraces		Low to depth of current disturbance, moderate below depth of current disturbance	Low to depth of current disturbance Moderate below depth of current disturbance
56	Mehi River and terraces	10-3-0032	Low to depth of current disturbance, moderate to high below depth of current disturbance	Low to depth of current disturbance Moderate to high below depth of current disturbance
57	Floodplain (Camurra bypass)		Low to depths of approximately 50cm (based on modern flooding and disturbance), moderate within below this depth	Low to depths of approximately 50cm (based on regular recent flooding and disturbance) Moderate below this depth

## 8.0 Assessment of harm associated with the proposal

Based on the description of works that form part of the proposal provided in **Section 1.2.4**, it is assumed that ground disturbance activities may occur anywhere within the proposal site. This, in turn, means that all sites and areas of archaeological potential located within the proposal site may be subject to both surface and subsurface impacts (noting that sites within 10 metres of the current proposal site boundary are included in the assessment of harm for precautionary purposes).

The portions of the proposal site assessed as having moderate or higher archaeological potential comprise parts of survey areas 15 (containing the proposed Newell Highway overpass that is located outside the existing rail corridor), 42 (Gwydir River terraces), 55 (Croppa Creek terraces), 56 (Mehi River terraces) and 57 (Camurra bypass on Gwydir River terraces). The portion of survey area 15 where it is proposed to undertake works outside the existing rail corridor has moderate archaeological potential and contains site NNS AS1. The areas of terraces within survey areas 42, 55, 56 and 57 are all assessed as having moderate or higher potential within the existing rail corridor beneath the depth of current impacts (based on the potential for deep deposits in these landforms). Recommendations are made in **Section 10** below, based on impacts occurring within these areas.

Based on currently available information, the proposal is likely to result in harm to archaeological sites NNS IA6-13, NNS AS1, 5, 6, 7, 10-3-0032 and 10-3-0035, with sites NNS IA4 and NNS AS2 and 4 also considered likely to be impacted (located within 10 metres of the proposal site). In addition, the proposal will result in harm to areas of moderate or higher archaeological potential within survey areas 15 (containing the proposed Newell Highway overpass that is located outside the existing rail corridor), 42 (Gwydir River terraces), 55 (Croppa Creek terraces), 56 (Mehi River terraces) and 57 (Camurra bypass on Gwydir River terraces).

It is noted that detailed design for the proposal has not yet been finalised. Changes during detailed design may result in changes in the potential to harm Aboriginal objects. Any such changes will be considered in finalising management and mitigation works within these areas such that, if impacts are avoided within the identified sites or areas of moderate to high archaeological potential, it will not be necessary to undertake the specific mitigations works recommended in **Section 10.2**.

## 9.0 Management options

There are a range of management options that are available in relation to the proposal site. The selection of management options is guided by the archaeological and Aboriginal cultural heritage significance of the proposal site and associated Aboriginal archaeological sites. *These management options have been developed from an archaeological perspective following in-field consultation with Aboriginal stakeholder representatives and are subject to review and comment by the registered Aboriginal parties.*

### 9.1 Option 1 site conservation

This management option would involve the conservation of all or some of the sites and areas of moderate or higher archaeological potential within the proposal site. With the exception of NNS AS1, 10-3-0032 and 10-3-0035, the sites identified as potentially subject to harm as a result of the proposal are all of low archaeological significance and were not identified during survey as being of notable Aboriginal cultural heritage significance. The areas of moderate or higher archaeological potential within the proposal site (including both previously recorded sites and sites identified during survey within these areas) have been assessed as being of moderate or moderate to high archaeological significance based on their potential values, with this significance assessment subject to revision based on the outcomes of further investigation of these areas (see **Section 9.2** below). Proposing a conservation outcome based on potential values alone is not an appropriate management option. It is also recognised that site #10-3-0032 (the Steel Bridge Camp) is located within an area assessed as having moderate to high archaeological potential and that has been identified in the past and during the current survey as having very high significance to the Aboriginal community due to the former presence of a fringe camp at this location. However, due to engineering constraints associated with the construction and operation of a rail line (including requirements to adhere to a relatively straight course), it is not possible to significantly alter the course of the proposal without necessitating works outside the existing rail corridor. Thus, if major changes are undertaken to avoid specific sites (including site #10-3-0032 and the associated area of moderate to high archaeological potential), it would result in impacts outside the existing rail corridor, potentially in areas with the same or higher potential that have not been subject to substantial disturbance. In accordance with the principles of ecologically sustainable development, this is not a justifiable outcome.

The areas of moderate or higher archaeological potential other than those specified above are all located outside the proposal site and therefore are not currently subject to impact. ARTC have also identified that construction compounds will not be located in areas of moderate or higher archaeological potential. In addition, it will not be necessary to impact sites 10-6-0048 (scarred tree) or NNS AS3 (artefact scatter).

### 9.2 Option 2 further investigation

Option 2 involves undertaking further investigation to clarify the nature, extent and significance of the areas of moderate or higher archaeological potential within the proposal site. As discussed in **Section 7.2**, these areas are assessed as having moderate or moderate to high archaeological significance based on their potential values but without undertaking further investigation it is not possible to determine whether this significance assessment should be revised and therefore whether another management option (as discussed below) is suitable. Option 2 is the most suitable option for the areas of moderate or higher archaeological potential that are subject to harm as a result of the proposal, namely the areas associated with survey areas 15 (containing the proposed Newell Highway overpass that is located outside the existing rail corridor), 42 (Gwydir River terraces), 55 (Croppa Creek terraces), 56 (Mehi River terraces) and 57 (Camurra bypass on Gwydir River terraces), as shown in **Figures 6.1-6.4**. At this stage, there is no requirement for further investigation in any of the other identified areas of moderate or higher archaeological potential as they are not currently proposed to be subject to harm as a result of the

proposal. Should this change, further investigation would be an appropriate management option in these areas as well.

### **9.3 Option 3 site destruction without salvage**

Option 3 would involve proceeding with the proposal and the subsequent destruction of both sites and areas of moderate or higher archaeological potential within the proposal site without any further investigation/salvage. The identified sites with moderate or higher significance and the areas of moderate or higher archaeological potential have the capacity to contribute to our understanding of how Aboriginal people used the area and how this changed through time, particularly if deep archaeological deposits remain present in terrace landforms. The sites and any archaeological material that may be present within the areas of moderate or higher archaeological potential are items of tangible heritage that is valued by Aboriginal people. It is therefore not considered appropriate to destroy the sites and areas of moderate or higher archaeological potential within the proposal site without undertaking further investigation. However, completion of works without further archaeological investigation or salvage is considered an appropriate management option for all other portions of the proposal site from an archaeological perspective.

### **9.4 Option 4 site destruction with salvage (surface collection only)**

Option 4 would involve the collection of the visible artefacts within the proposal site prior to any disturbance associated with the proposal. This management option is considered valid at sites where surface artefacts remain extant and would be undertaken concurrently with further investigation works (described as Option 2).

# 10.0 Recommendations

It is noted that recommendations provided from an Aboriginal cultural perspective may differ to those based on an archaeological perspective. Scope is therefore provided for the inclusion of both sets of recommendations.

## 10.1 Aboriginal party recommendations

The recommendations provided in **Section 10.2** were discussed with Aboriginal party representatives during the survey.

In addition, during the survey, Aboriginal party representatives made a number of recommendations that differ from recommendations made from an archaeological perspective. Provision was therefore made in this report for the inclusion of Aboriginal party recommendations. The recommendations below were provided to the registered Aboriginal parties for review and comment as part of the review of the draft report. No additional recommendations were received.

Key recommendations are as follows.

- Some Aboriginal parties requested an opportunity to revisit three previously recorded site locations (10-3-0032, 10-3-0035 and 2-4-0073) where vegetation cover potentially obscured artefacts and areas of identified sensitivity (namely associated with the Mehi and Gwydir Rivers) following the removal of vegetation either as a result of a change in climatic conditions or during initial vegetation clearance for construction purposes.
- ARTC should make sure that the Mehi River bridge (Steel Bridge) is not removed. The Aboriginal parties requested that ARTC consult with Aboriginal parties to develop appropriate interpretation material to accompany any subsequent re-purposing of the bridge. This recommendation was made prior to the identification that retaining the Mehi River bridge will not be possible. This was identified to the registered Aboriginal parties as part of the provision of the draft report. No further comments/recommendations regarding management of the Mehi River bridge were provided by the registered Aboriginal parties.
- Where ARTC is required to undertake rehabilitation of areas subject to temporary disturbance or to provide compensatory habitat, ARTC should provide the opportunity for the registered Aboriginal parties to have input into the selection of plant species to ensure that there is an adequate representation of local Aboriginal resource plants (noting that any plant selections must conform to the required vegetation community that is being planted).

## 10.2 Archaeological recommendations

The following recommendations have been developed in light of the archaeological context of the region; the findings of the survey; the archaeological assessment of the assessment areas; the potential impacts of the proposal; current cultural heritage legislation; and the preferred management options outlined in **Section 9.0**.

- ARTC should advise relevant employees and contractors that it is an offence under Section 86 of the NPW Act to harm or desecrate an Aboriginal object and provide appropriate Aboriginal cultural heritage awareness to all employees and contractors so that they are aware of their obligations.

- Prior to the commencement of construction, surface collection works should be conducted at sites NNS IA6-13, NNS AS1, 5, 6, 7, 10-3-0032, 10-3-0035, NNS IA4 and NNS AS2 and 4 where it is identified that the proposal would result in surface impacts within the identified site area. The surface collection should be undertaken in accordance with the approach outlined in **Section 11.1**.
- The assessment has identified three locations within the proposal site (consisting of the Gwydir River and associated terraces – Survey Units 42 and 57, the Mehi River and associated terraces – Survey Unit 56 and Croppa Creek and associated terraces – Survey Unit 55) that have moderate to high archaeological potential at depths below those previously impacted by rail construction and agricultural practices. In these areas, where final design will require impacts at depths greater than 50 centimetres below the natural ground surface (that is, the surface below existing ballast/fill), a geomorphic testing program will be undertaken to confirm if any buried soil profiles are present that may contain relatively intact archaeological deposits. The geomorphic testing is an interim measure intended to refine the understanding of the archaeological potential of these landforms to determine whether or not there is the need for further archaeological testing or salvage in accordance with current guidelines and requirements. The geomorphic testing program will be developed for inclusion with an Aboriginal Cultural Heritage Management Plan. Where the geomorphic testing identifies areas subject to impact by the proposal that contain relatively intact buried soil profiles that have high potential to be associated with archaeological deposits, a subsequent program of archaeological investigation may be undertaken. If no buried relatively intact soil profiles are present no further investigations are required. If they do occur and will be impacted, a methodology for any subsequent archaeological excavation that may be required will be developed in consultation with Aboriginal parties for inclusion within an Aboriginal Cultural Heritage Management Plan.
- Should it be necessary to undertake ground disturbance works outside the existing rail corridor in survey area 15 (Newell Highway overbridge), archaeological excavation works should be conducted prior to any ground disturbing construction works in this area. The final location of excavations should be determined with reference to detailed design within survey area 15 however allowance should be made for excavation of up to 5% of the portion of survey area 15 that is outside the existing rail corridor and subject to impact. Finalisation of the excavation methodology will occur as part of the development of an Aboriginal Cultural Heritage Management Plan.
- With reference to site 10-6-0048, ARTC should attempt to avoid impacts within the dripline of the scarred tree and put appropriate protective measures in place during construction works so that incidental impact to the tree is avoided. Should this not be possible, an alternate management strategy for this site should be developed as a component of an Aboriginal Cultural Heritage Management Plan.
- The detailed design process, including any designs for compound areas should be undertaken with reference to the outcomes of this assessment and with the intent of avoiding disturbance in areas of archaeological potential. Where possible, efforts should be made to locate construction compounds in areas of low archaeological potential. If this is not possible, the need for further investigation within these areas should be determined in the Aboriginal Cultural Heritage Management Plan.
- Should the detailed design process identify that impacts are required outside the proposal site, any such additional area will be subject to further assessment to clarify their Aboriginal cultural and archaeological values.
- Where the proposal will involve clearance of mature native trees in areas that were not subject to archaeological survey (i.e. in areas where access was not available at the time of the survey), any such trees subject to clearance should be inspected for any evidence of cultural scarring. Where any scarred trees are identified, efforts should be made to avoid impact. Should this not be possible, a management strategy should be developed as a component of an Aboriginal Cultural Heritage Management Plan.

- Should suspected human skeletal material be identified at any time during proposal, these should be managed in accordance with the strategy provided below:
  - works within the immediate vicinity of the skeletal material would cease and the area would be cordoned off for 10 metres from all edges of the skeletal material
  - the skeletal material would be inspected to determine whether it is human or animal. If necessary, advice would be sought from a forensic specialist
  - if the skeletal material is human, the NSW Police and OEH would be contacted. No excavation will proceed until an appropriate course of action has been determined in consultation with NSW Police, OEH and the Aboriginal parties
  - if the skeletal material is not human, works may proceed.
- Should potential Aboriginal objects (other than those discussed in this assessment) be identified, works would cease within 10 metres of the potential object and the area would be cordoned off for 10 metres from the object/s. The object/s should be assessed by an appropriately qualified person to determine whether it is an Aboriginal object. If it is not an Aboriginal object, works may proceed. If it is an Aboriginal object, it would be managed in accordance with strategies that would be identified as a component of an Aboriginal Cultural Heritage Management Plan, noting that any such strategies would be consistent with the approaches outlined in **Section 11.0**.
- Should the proposal be approved, ARTC, in consultation with the registered Aboriginal parties, should develop an Aboriginal Cultural Heritage Management Plan for the proposal that is prepared with reference to all of the above recommendations.



## 11.0 Methodologies for mitigation works

The following methodologies have been included to guide the recommended archaeological mitigation and management works within the proposal site. These methodologies will form part of an Aboriginal Cultural Heritage Management Plan that will be developed for the proposal and may be subject to modification following the provision of detailed design.

### 11.1 Surface collection

Surface collection will be undertaken within the proposal site for the sites listed in **Section 10.2**, and at any other locations within the proposal site where additional surface materials may be identified over the course of salvage and construction works. The proposed surface collection methodology is as follows.

- The distribution of surface archaeological material will be assessed and where appropriate, archaeological material will be grouped into loci for the purposes of recording and analysis.
- All surface archaeological material and/or clusters of surface archaeological material will be flagged and photographed.
- The location of each loci or isolated area of surface archaeological material will be recorded and mapped using a hand-held 12 channel GPS.
- Artefacts will be collected and placed in labelled bags with reference to site and locus (where appropriate).
- Artefacts will be retained for recording and analysis, as specified in **Section 11.3**.

### 11.2 Excavation works

The methodology for any geomorphic or archaeological excavation works that may be required with reference to the recommendations provided in **Section 10.2** will be determined in consultation with Aboriginal parties as part of the development of an Aboriginal Cultural Heritage Management Plan for the proposal and following the completion of detailed design.

### 11.3 Management of potential human skeletal remains

Should potential human skeletal remains be identified at any stage within the proposal site, all ground disturbance works will cease within 50 metres of remains until it can be determined whether the remains are human or animal. If the remains are considered likely to be human, the NSW Police and OEH will be contacted to determine an appropriate course of action. Ground disturbance works will not recommence in the vicinity of the human remains until approval has been received from NSW Police and OEH.

### 11.4 Post-salvage analysis and reporting

Should the recovered archaeological assemblage contain enough archaeological material to allow for a statistically viable analysis, the salvaged artefact assemblage will be subject to detailed analysis. This will involve the recording of artefact class and raw material for all artefacts. Additional attributes to be recorded are listed in **Table 11.1** with reference to different artefact classes.

**Table 11.1 Artefact Analysis Attributes with reference to Artefact Class**

Artefact Class	Attributes to be recorded
Complete flakes	Length Width Thickness % Cortex Cortex Type Heat Treated (yes/no) Visible Use-Wear (yes/no) Visible Residue (yes/no) Comments – description, does it conjoin with another artefact, if used which margin was used, if it has residues on the flake etc.
Retouched Flakes	Retouched/broken retouched flake class Retouch type Visible Use-Wear (yes/no) Visible Residue (yes/no) Comments
Cores	Length Width Thickness % Cortex Cortex Type Heat Treated (yes/no) Rotation (count) Level of exhaustion Visible Use-Wear (yes/no) Visible Residue (yes/no) Comments
Other tool types (e.g. grindstones, axes, hammerstones etc.)	Length Width Thickness % Cortex Cortex Type Heat Treated (yes/no) Visible Use-Wear (yes/no) Visible Residue (yes/no) Comments

Following the completion of all salvage activities and subsequent artefact analysis, a report will be compiled that presents the findings of the activities. The report will document the outcome of all salvage activities undertaken in relation to the proposal and will be prepared with reference to OEH guidelines and requirements. It will include:

- a description of the results of the activities including general environmental information, landscape information, soil descriptions and excavation profiles (where applicable)
- the results of detailed recording and analysis of salvaged archaeological material
- where feasible based on assemblage size, use the recovered data to undertake a comparative analysis with the outcomes of other salvage activities within the local area to identify whether the current assemblage exhibits any significant differences from other salvaged assemblages and whether it can provide any further information on how Aboriginal people used/occupied the area.

In accordance with the requirements of the NPW Act, Aboriginal Site Impact Recording forms will be submitted to OEH for all sites subject to impact.

## 11.5 Management of salvaged artefacts

During the analysis of any Aboriginal artefacts described in **Section 11.4**, it is proposed that the salvaged materials will be temporarily stored at the offices of the archaeological consultant undertaking the works. *This is subject to review by Aboriginal parties.*

The long-term management of any salvaged artefacts will be subject to consultation with the registered Aboriginal parties. It is recommended that this consultation is undertaken during the development of an Aboriginal Cultural Heritage Management Plan for the proposal. *However, any comments received from the registered Aboriginal parties regarding long term management of salvaged artefacts will be summarised here and included in full in **Appendix 3**.*

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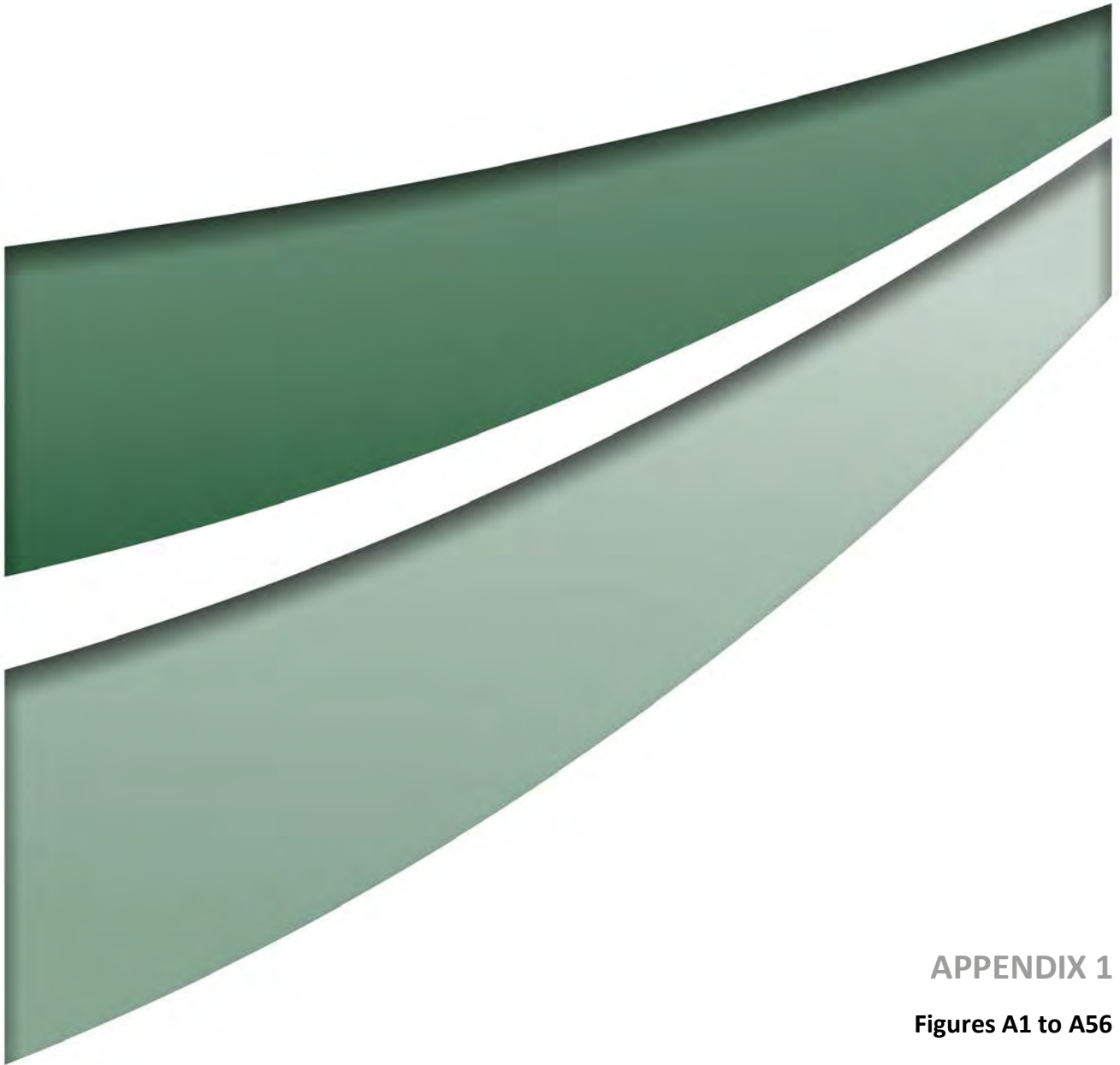
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**APPENDIX 1**  
**Figures A1 to A56**







Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

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| • Rail Line Chainage   | 4th Order     |
|  | 5th Order     |

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FIGURE A1  
Archaeological  
Survey Areas



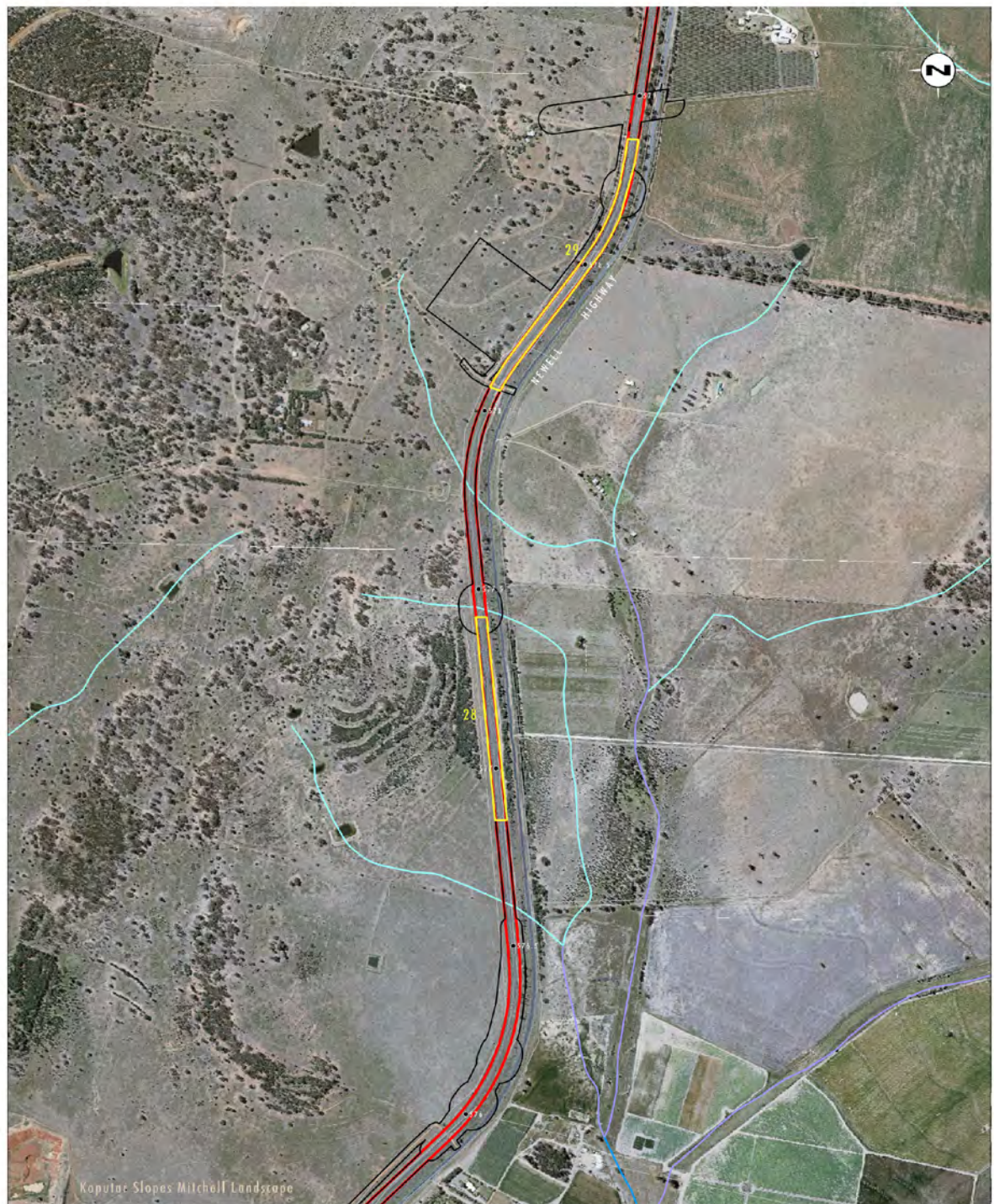


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- Additional Assessment Area
- Survey Area
- Rail Line Chainage

- Stream Order:
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  - 2nd Order
  - 3rd Order
  - 4th Order
  - 5th Order

FIGURE A2

Archaeological  
Survey Areas



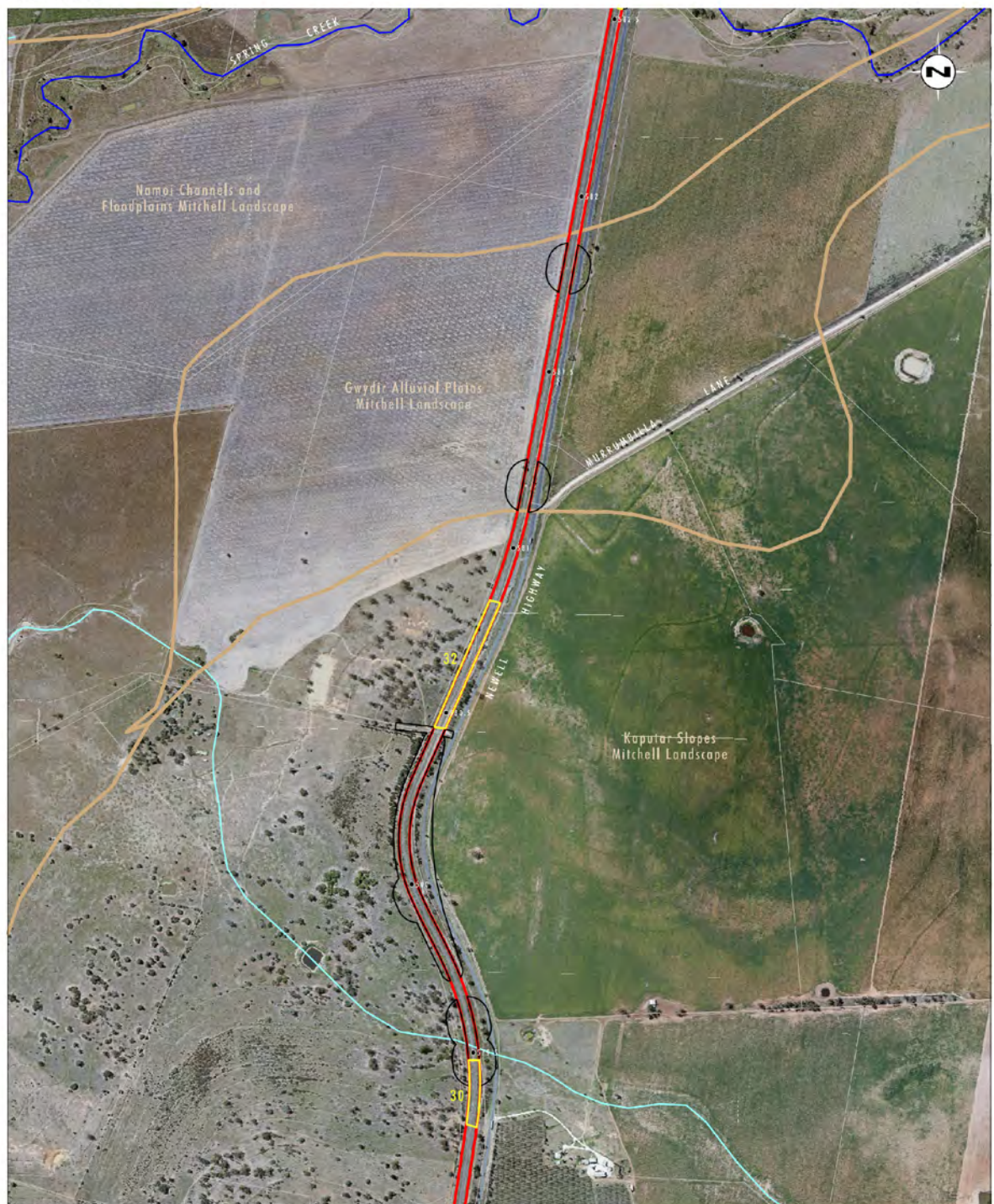


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FIGURE A3  
Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

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| • Rail Line Chainage   | 4th Order     |
|  | 5th Order     |

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FIGURE A4  
Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

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- ▬ Additional Assessment Area
- ▬ Survey Area
- Rail Line Chainage

- Stream Order:
- ▬ 1st Order
  - ▬ 2nd Order
  - ▬ 3rd Order
  - ▬ 4th Order
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FIGURE A5

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

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- ▬ Proposal Site
- Additional Assessment Area
- Survey Area
- Rail Line Chainage

- Stream Order:
- ▬ 1st Order
  - ▬ 2nd Order
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  - ▬ 5th Order

FIGURE A6  
Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

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- Proposal Site
- Additional Assessment Area
- Survey Area
- Rail Line Chainage

Stream Order:  
— 1st Order  
— 2nd Order  
— 3rd Order  
— 4th Order  
— 5th Order

FIGURE A7  
Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

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| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: cyan;">—</span> 1st Order      |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               | <span style="color: blue;">—</span> 2nd Order      |
| • Rail Line Chainage   | <span style="color: lightblue;">—</span> 3rd Order |
| <span style="color: green;">●</span> Scarred Tree or Carved Tree                         | <span style="color: purple;">—</span> 4th Order    |
|  | <span style="color: yellow;">—</span> 5th Order    |

File Name (A4): R06/3607\_163.dgn  
20170315 14:34

FIGURE A8  
Archaeological  
Survey Areas



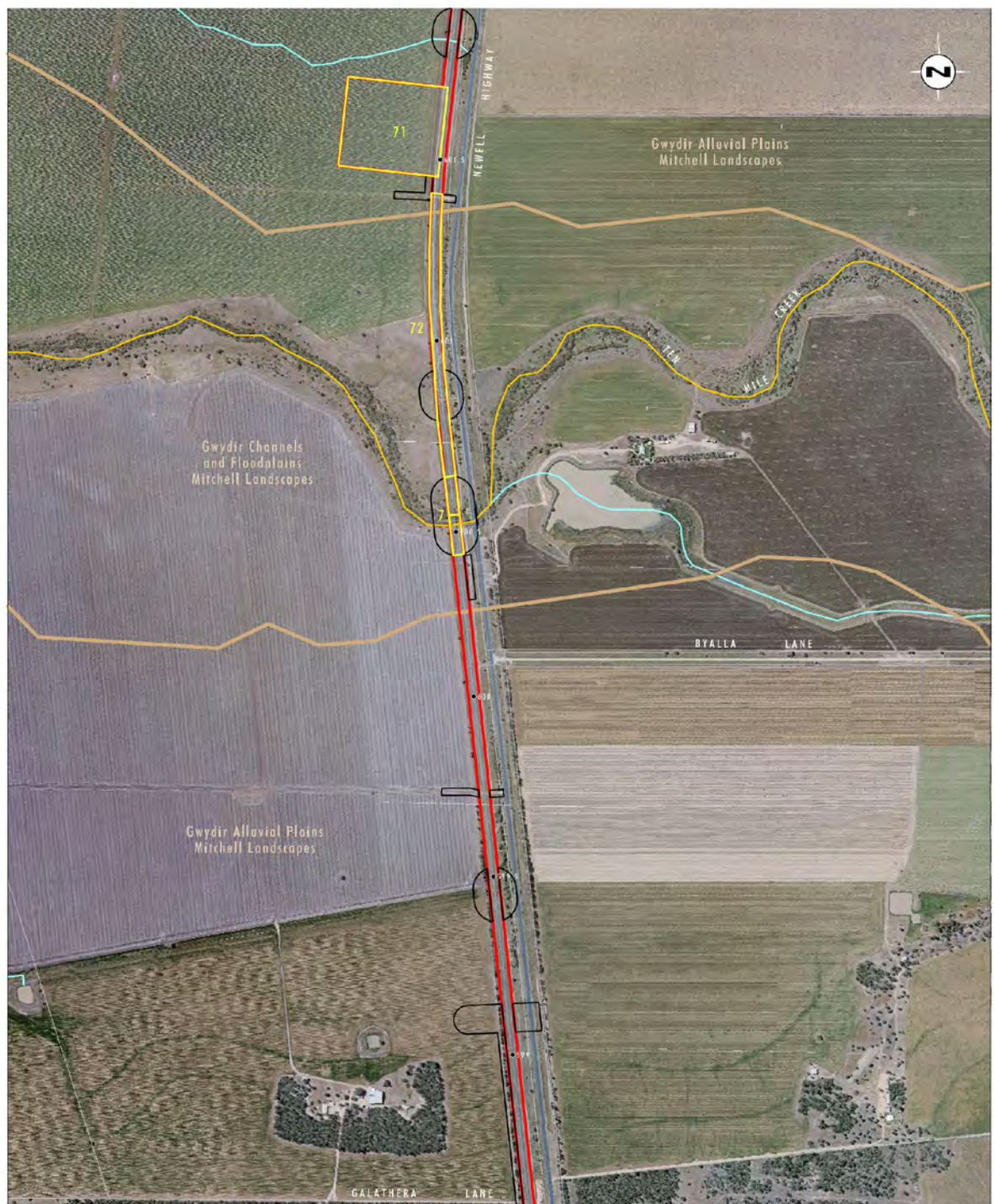


Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

#### Legend

- |   |   |
|---|---|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                 | Stream Order:                                   |
| <span style="border: 2px solid orange; padding: 2px;"> </span> Additional Assessment Area | <span style="color: cyan;">—</span> 1st Order   |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Mitchell Landscapes        | <span style="color: blue;">—</span> 2nd Order   |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area                | <span style="color: blue;">—</span> 3rd Order   |
| • Rail Line Chainage  | <span style="color: blue;">—</span> 4th Order   |
|   | <span style="color: yellow;">—</span> 5th Order |

File Name (A4): R06/3607\_164.dgn  
20170315 15:18

FIGURE A9  
Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |   |
|--|---|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                                    | Stream Order:                                 |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area                     | <span style="color: cyan;">—</span> 1st Order |
| <span style="background-color: #f0f0f0; border: 1px solid black; padding: 2px;"> </span> Mitchell Landscapes | <span style="color: blue;">—</span> 2nd Order |
| <span style="background-color: yellow; border: 1px solid black; padding: 2px;"> </span> Survey Area          | <span style="color: blue;">—</span> 3rd Order |
| • Rail Line Chainage   | <span style="color: blue;">—</span> 4th Order |
|  | <span style="color: blue;">—</span> 5th Order |

File Name (A4): R06/3607\_165.dgn  
20170315 15:19

FIGURE A10  
Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- Proposal Site
- Additional Assessment Area
- Survey Area
- Rail Line Chainage

Stream Order:  
— 1st Order  
— 2nd Order  
— 3rd Order  
— 4th Order  
— 5th Order

FIGURE A11

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- Proposal Site
- Additional Assessment Area
- Mitchell Landscapes
- Survey Area
- Rail Line Chainage

- Stream Order:
- 1st Order
  - 2nd Order
  - 3rd Order
  - 4th Order
  - 5th Order

FIGURE A12

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |               |
|--|---------------|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order: |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | 1st Order     |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Mitchell Landscapes       | 2nd Order     |
| • Rail Line Chainage   | 3rd Order     |
| ★ Burial and Scarred Tree  | 4th Order     |
|  | 5th Order     |

File Name (A4): R06/3607\_168.dgn  
20170315 15.32

FIGURE A13

Archaeological  
Survey Areas



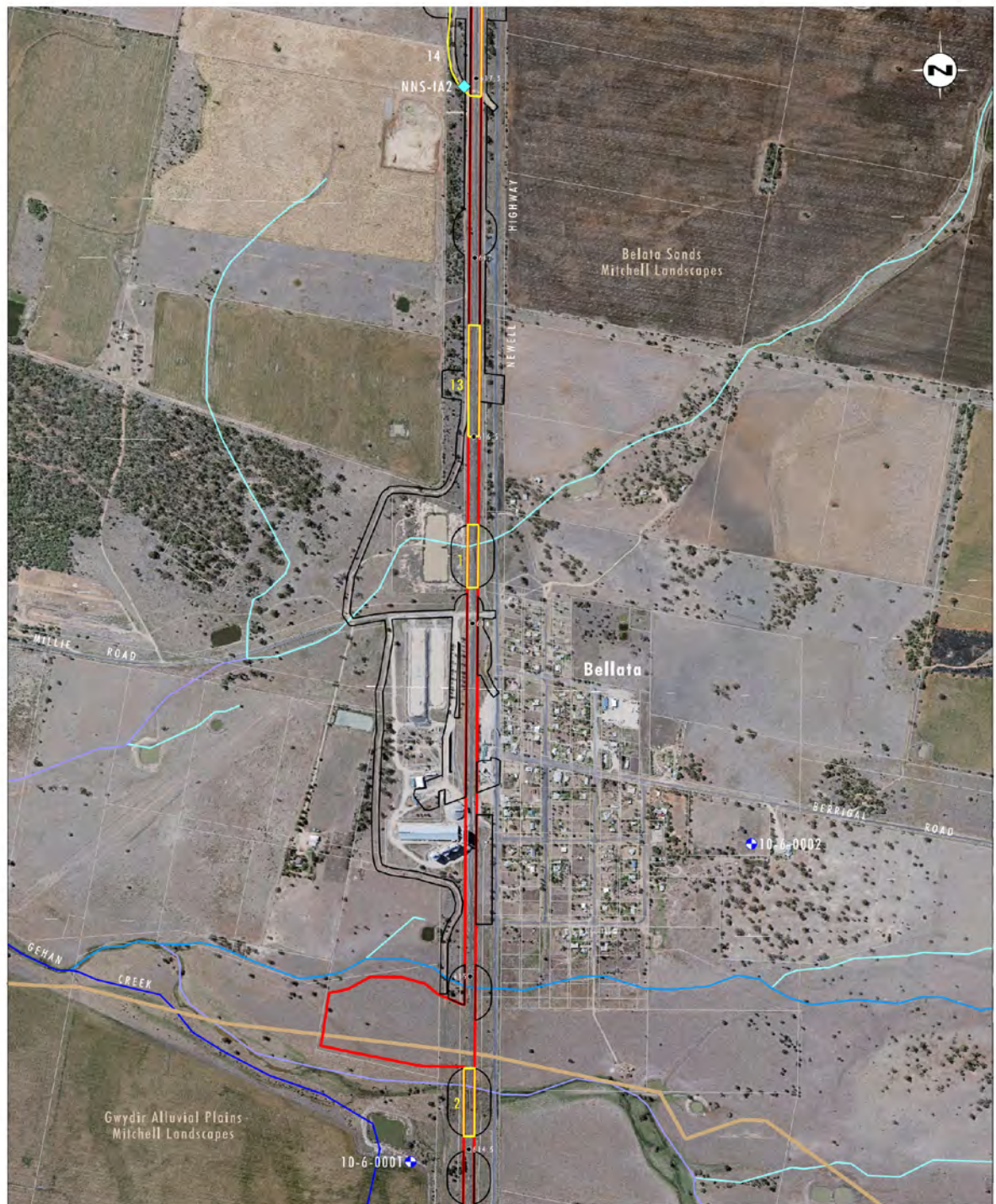


Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |   |
|--|---|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order:                                     |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: cyan;">—</span> 1st Order     |
| <span style="border: 2px solid orange; padding: 2px;"> </span> Mitchell Landscapes       | <span style="color: blue;">—</span> 2nd Order     |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               | <span style="color: darkblue;">—</span> 3rd Order |
| • Rail Line Chainage   | <span style="color: purple;">—</span> 4th Order   |
| ✦ Burial and Scarred Tree  | <span style="color: orange;">—</span> 5th Order   |
| ◆ New Sites Recorded During Survey   |   |

File Name (A4): R06/3607\_169.dgn  
20170315 15.32

FIGURE A14

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |               |
|--|---------------|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order: |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | 1st Order     |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               | 2nd Order     |
| • Rail Line Chainage   | 3rd Order     |
| ◆ New Sites Recorded During Survey   | 4th Order     |
|  | 5th Order     |

File Name (A4): R06/3607\_170.dgn  
20170320 9.52

FIGURE A15

Archaeological  
Survey Areas



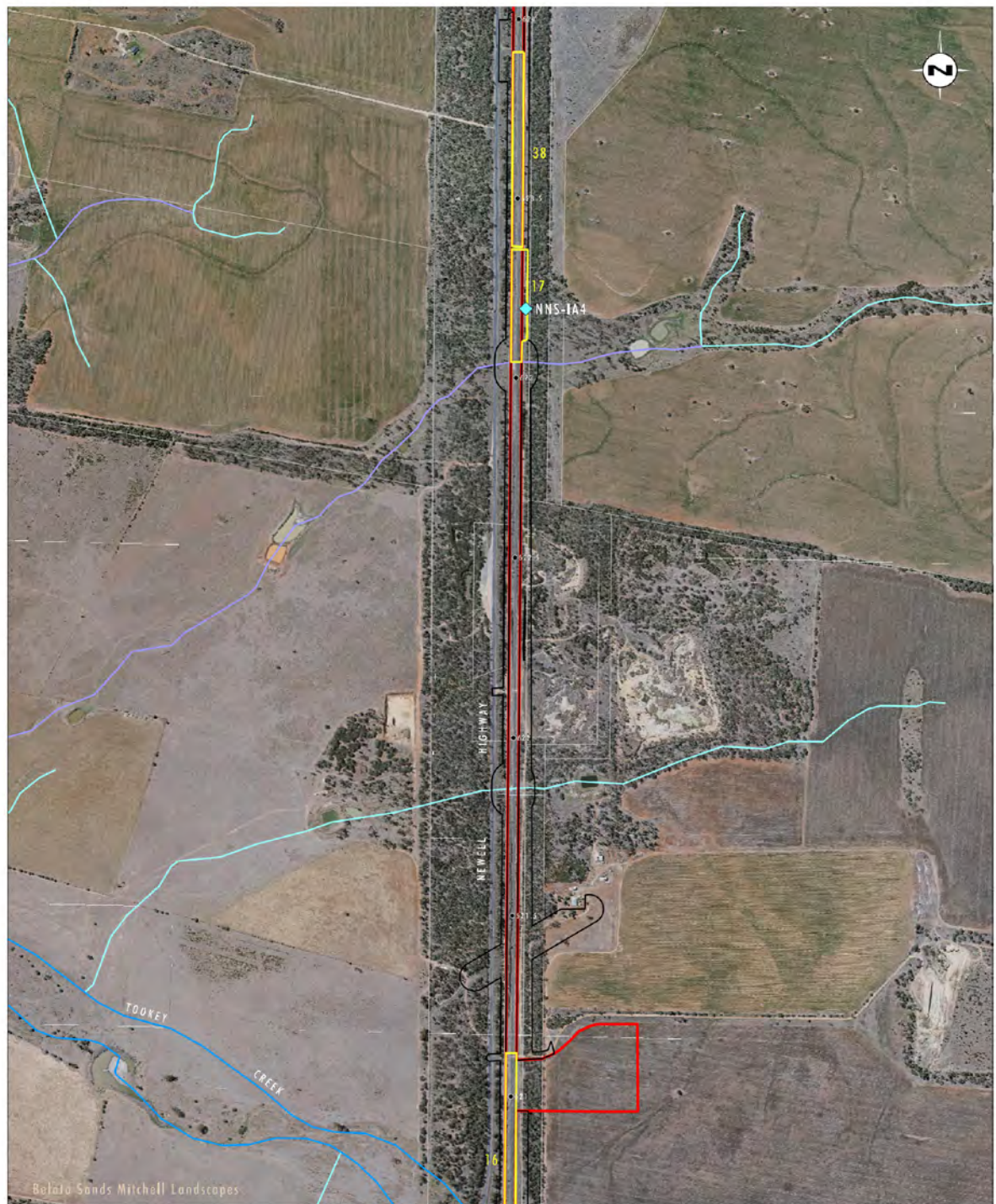


Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |               |
|--|---------------|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order: |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | 1st Order     |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               | 2nd Order     |
| • Rail Line Chainage   | 3rd Order     |
| ◆ New Sites Recorded During Survey   | 4th Order     |
|  | 5th Order     |

File Name (A4): R06/3607\_171.dgn  
20170320 12.24

FIGURE A16

Archaeological  
Survey Areas



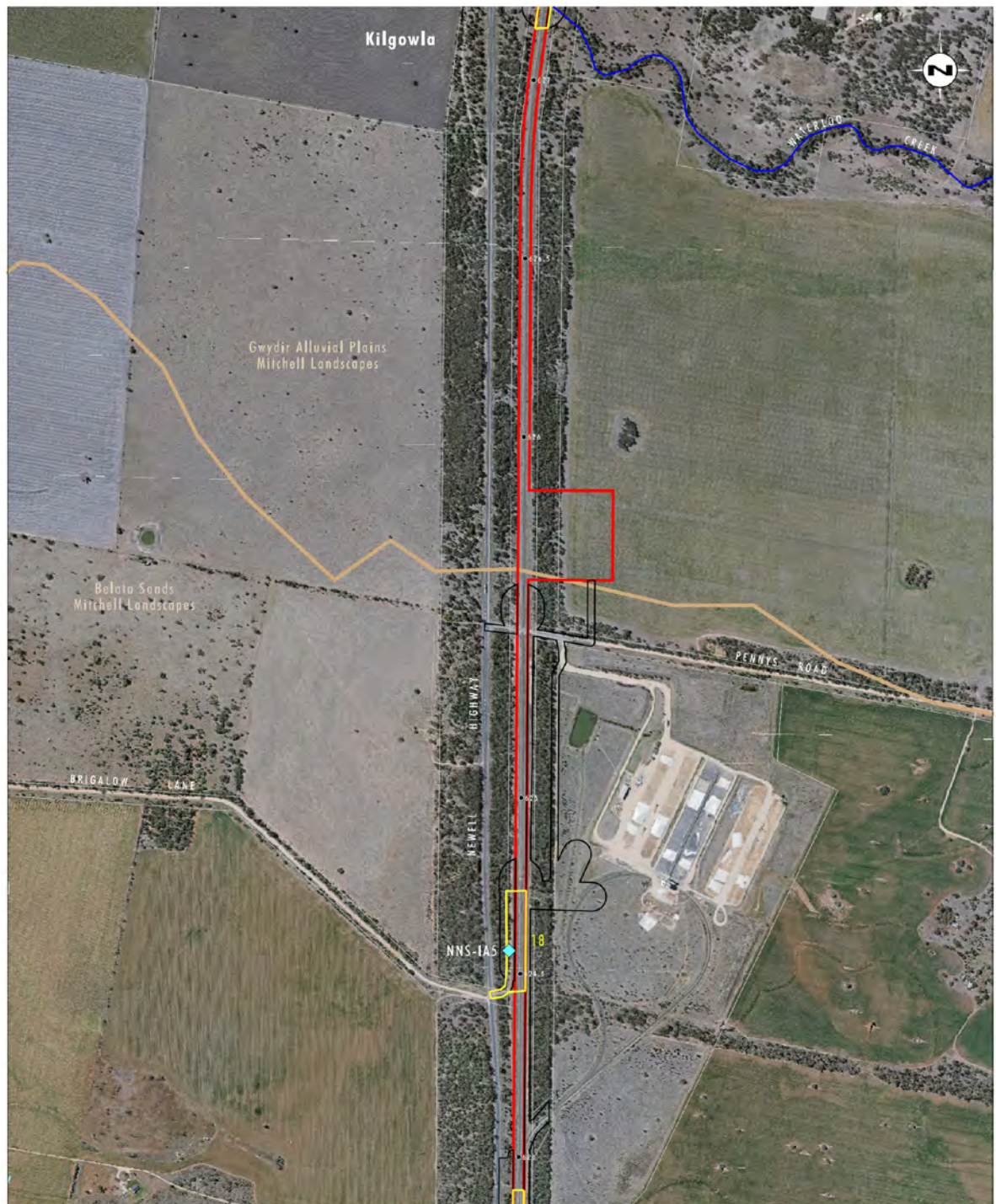


Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |   |
|--|---|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order:                                   |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: cyan;">—</span> 1st Order   |
| <span style="border: 2px solid orange; padding: 2px;"> </span> Mitchell Landscapes       | <span style="color: blue;">—</span> 2nd Order   |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               | <span style="color: blue;">—</span> 3rd Order   |
| • Rail Line Chainage   | <span style="color: blue;">—</span> 4th Order   |
| ◆ New Sites Recorded During Survey   | <span style="color: yellow;">—</span> 5th Order |

File Name (A4): R06/3607\_172.dgn  
20170320 12.12

FIGURE A17

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- Proposal Site
- Additional Assessment Area
- Survey Area
- Rail Line Chainage

- Stream Order:
- 1st Order
  - 2nd Order
  - 3rd Order
  - 4th Order
  - 5th Order

FIGURE A18

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

#### Legend

- Proposal Site
- Additional Assessment Area
- Survey Area
- Rail Line Chainage

FIGURE A19

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |   |               |
|---|---------------|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                                   | Stream Order: |
| <span style="border: 1px solid black; padding: 2px;"> </span> Additional Assessment Area                    | 1st Order     |
| <span style="background-color: yellow; border: 1px solid black; padding: 2px;"> </span> Mitchell Landscapes | 2nd Order     |
| <span style="background-color: yellow; border: 1px solid black; padding: 2px;"> </span> Survey Area         | 3rd Order     |
| • Rail Line Chainage  | 4th Order     |
|   | 5th Order     |

FIGURE A20

Archaeological  
Survey Areas



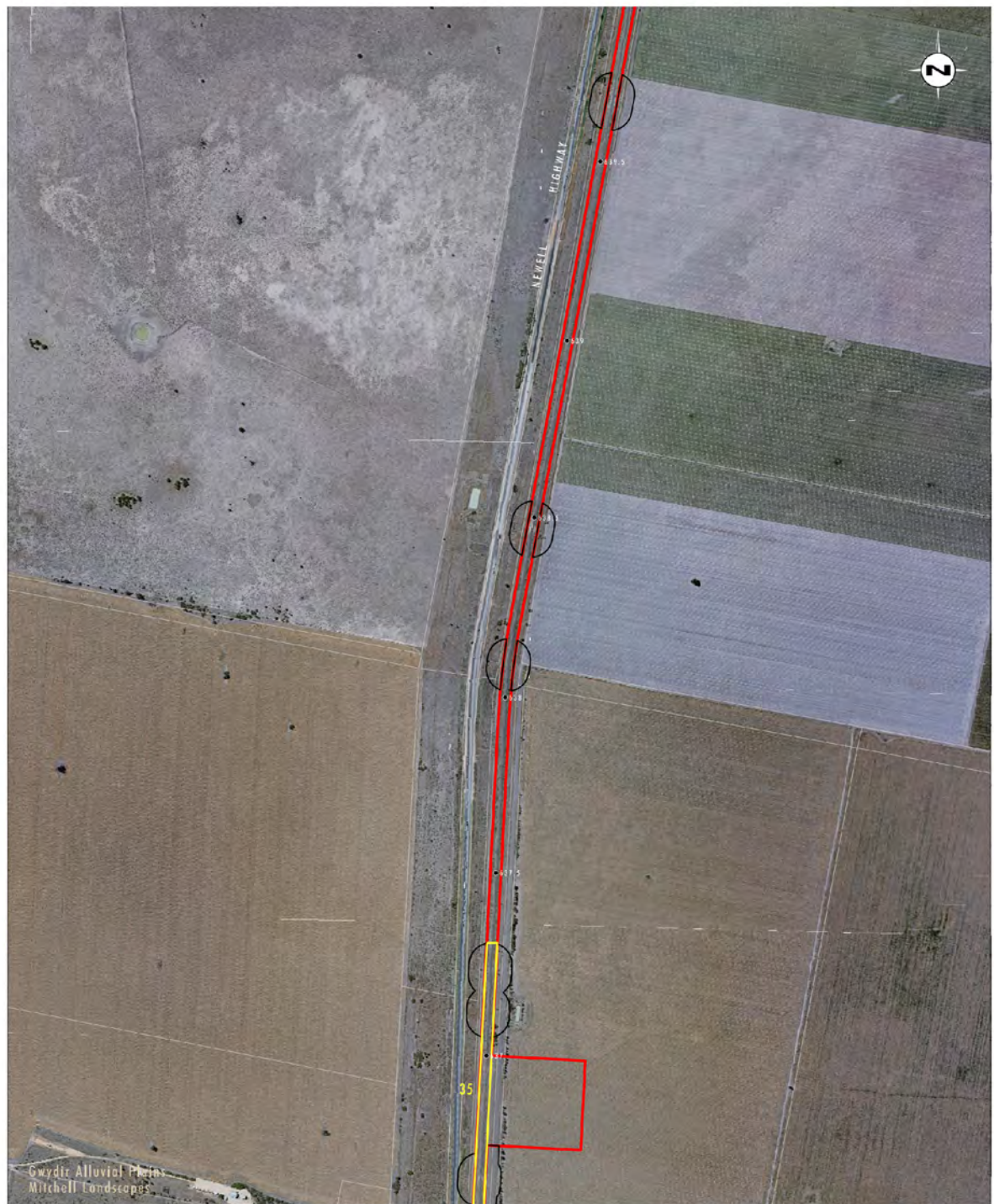


Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

#### Legend

- ▬ Proposal Site
- Additional Assessment Area
- ▬ Survey Area
- Rail Line Chainage

FIGURE A21

Archaeological  
Survey Areas





Image Source: ARTC (2016)

Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |  |
|--|--|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order:                                      |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: lightblue;">—</span> 1st Order |
| <span style="border: 2px solid orange; padding: 2px;"> </span> Mitchell Landscapes       | <span style="color: blue;">—</span> 2nd Order      |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               | <span style="color: darkblue;">—</span> 3rd Order  |
| <span style="color: black;">•</span> Rail Line Chainage                                  | <span style="color: purple;">—</span> 4th Order    |
| <span style="color: blue;">◆</span> New Sites Recorded During Survey                     | <span style="color: yellow;">—</span> 5th Order    |

File Name (A4): R06/3607\_177.dgn  
20170320 14.02

FIGURE A22

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |  |
|--|--|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order:                                      |
| <span style="border: 1px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: cyan;">—</span> 1st Order      |
| • Rail Line Chainage   | <span style="color: blue;">—</span> 2nd Order      |
| ★ Scarred Tree or Carved Tree  | <span style="color: lightblue;">—</span> 3rd Order |
|  | <span style="color: darkblue;">—</span> 4th Order  |
|  | <span style="color: yellow;">—</span> 5th Order    |

File Name (A4): R06/3607\_178.dgn  
20170320 13.59

FIGURE A23

Archaeological  
Survey Areas



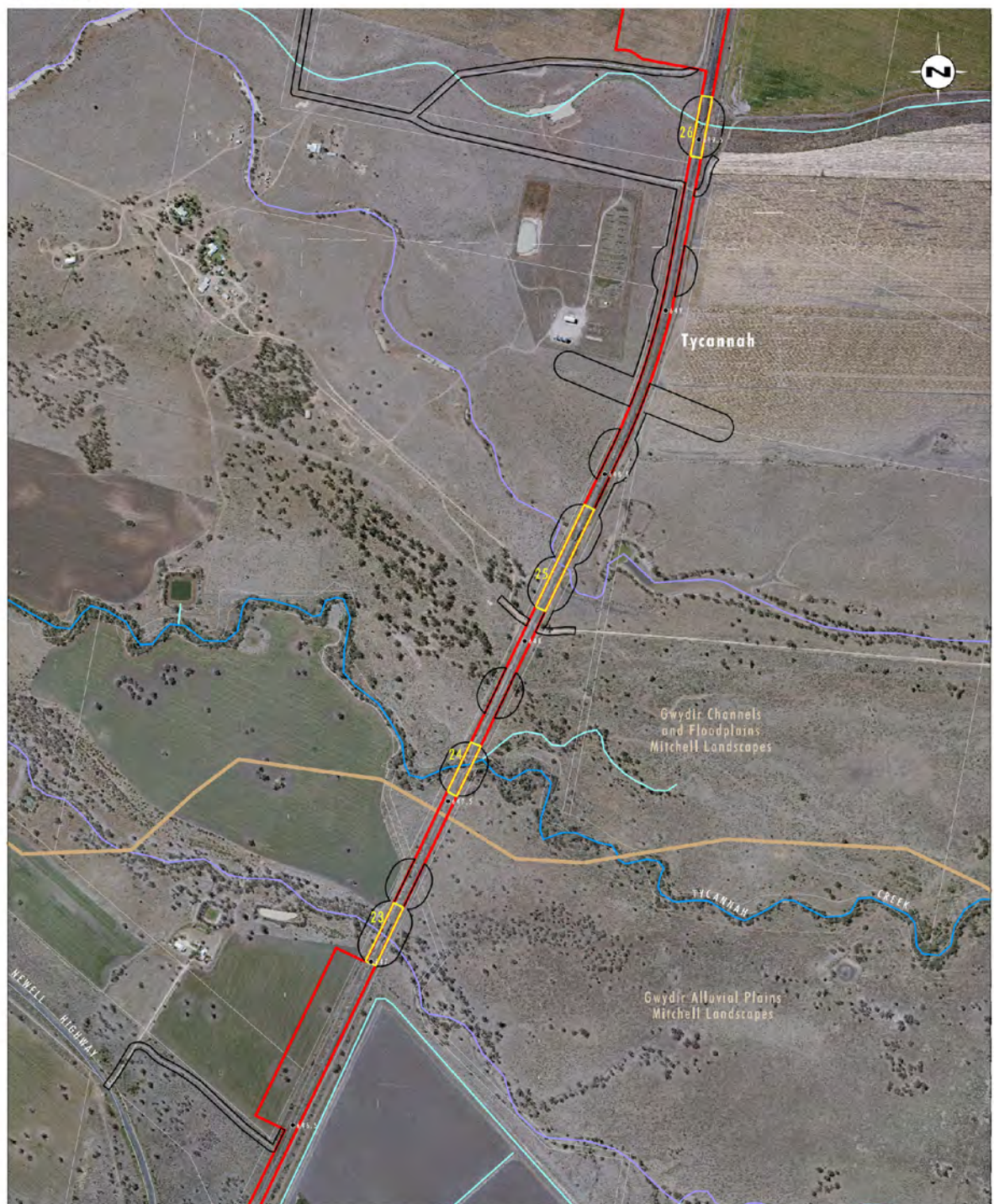


Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

#### Legend

- |  |  |
|--|--|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order:                                      |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: lightblue;">—</span> 1st Order |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Mitchell Landscapes       | <span style="color: blue;">—</span> 2nd Order      |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               | <span style="color: darkblue;">—</span> 3rd Order  |
| • Rail Line Chainage   | <span style="color: purple;">—</span> 4th Order    |
|  | <span style="color: yellow;">—</span> 5th Order    |

File Name (A4): R06/3607\_179.dgn  
20170320 13:59

FIGURE A24

Archaeological  
Survey Areas



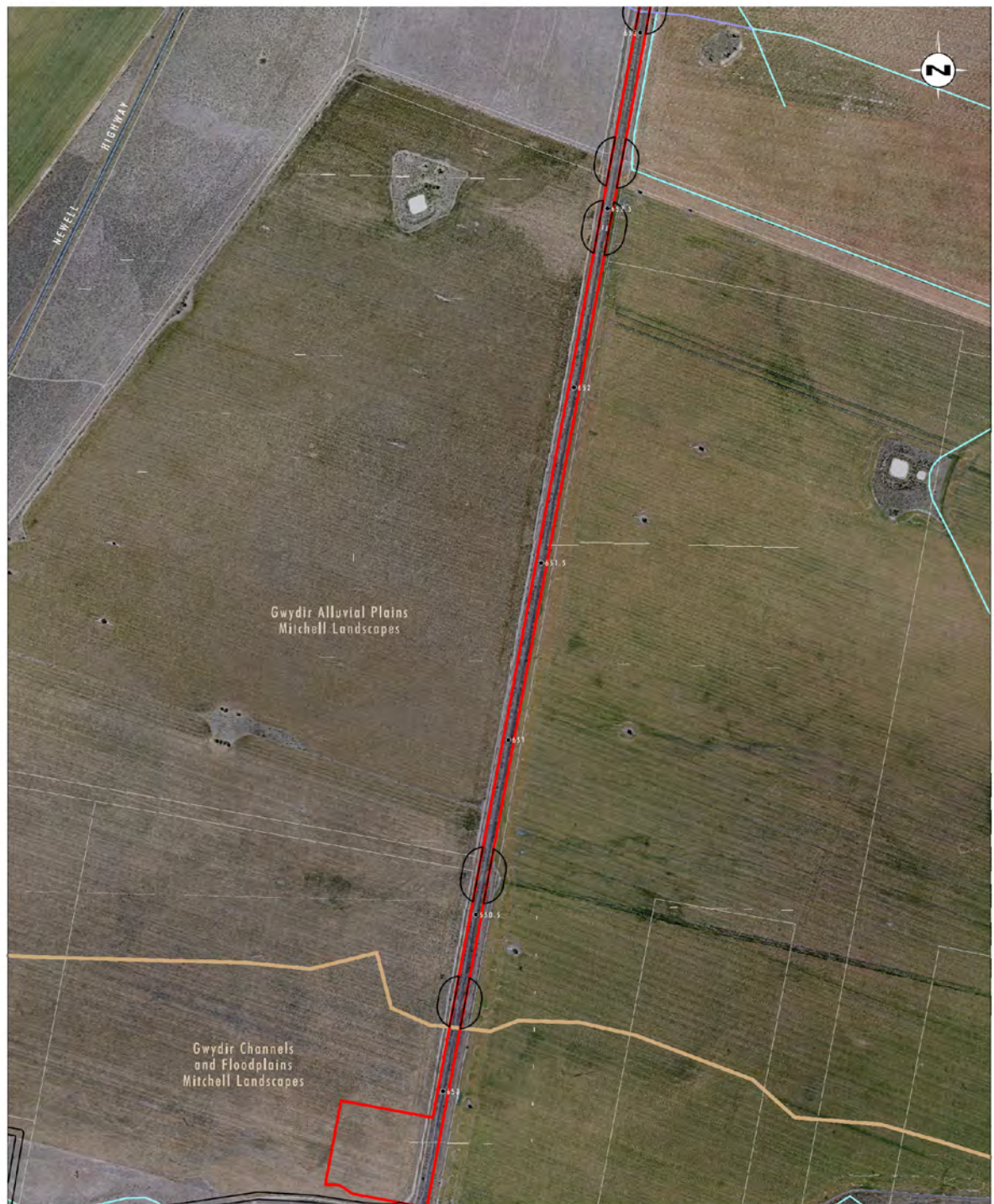


Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- ▬ Proposal Site
- Additional Assessment Area
- Mitchell Landscapes
- Rail Line Chainage

- Stream Order:
- ▬ 1st Order
  - ▬ 2nd Order
  - ▬ 3rd Order
  - ▬ 4th Order
  - ▬ 5th Order

FIGURE A25

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |  |
|--|--|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order:                                      |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: cyan;">—</span> 1st Order      |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               | <span style="color: blue;">—</span> 2nd Order      |
| • Rail Line Chainage   | <span style="color: lightblue;">—</span> 3rd Order |
| <span style="color: green;">🌳</span> Scarred Tree or Carved Tree                         | <span style="color: darkblue;">—</span> 4th Order  |
|  | <span style="color: orange;">—</span> 5th Order    |

File Name (A4): R06/3607\_181.dgn  
20170320 13.43

FIGURE A26  
Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

#### Legend

- Proposal Site
- Additional Assessment Area
- Survey Area
- Rail Line Chainage
- 🌳 Scarred Tree or Carved Tree

FIGURE A27

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |   |
|--|---|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order:                                   |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: cyan;">—</span> 1st Order   |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               | <span style="color: blue;">—</span> 2nd Order   |
| • Rail Line Chainage   | <span style="color: blue;">—</span> 3rd Order   |
| • Isolated Find  | <span style="color: blue;">—</span> 4th Order   |
| ⚡ Stone Quarry   | <span style="color: yellow;">—</span> 5th Order |

File Name (A4): R06/3607\_183.dgn  
20170320 15.03

FIGURE A28

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |  |  |
|--|--|--|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | <span style="color: blue;">+</span> Habitation Structure         | Stream Order:                                      |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: orange;">•</span> Isolated Find              | <span style="color: lightblue;">—</span> 1st Order |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Mitchell Landscapes       | <span style="color: green;">•</span> Scarred Tree or Carved Tree | <span style="color: blue;">—</span> 2nd Order      |
| <span style="color: blue;">—</span> Rail Line Chainage                                   |  | <span style="color: darkblue;">—</span> 3rd Order  |
| <span style="color: red;">•</span> Artefact Scatter                                      |  | <span style="color: purple;">—</span> 4th Order    |
| <span style="color: blue;">+</span> Bora/Ceremonial                                      |  | <span style="color: yellow;">—</span> 5th Order    |

File Name (A4): R06/3607\_184.dgn  
20170320 15.03

FIGURE A29

Archaeological  
Survey Areas





Image Source: ARTC (2016)

Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- Proposal Site
- Additional Assessment Area
- Mitchell Landscapes
- Survey Area
- Rail Line Chainage
- Artefact Scatter

- Artefact and Potential Archaeological Deposit
- Potential Archaeological Deposit
- Scarred Tree or Carved Tree

- Stream Order:
- 1st Order
- 2nd Order
- 3rd Order
- 4th Order
- 5th Order

FIGURE A30

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

#### Legend

- |  |  |
|--|--|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order:                                      |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: lightblue;">—</span> 1st Order |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Mitchell Landscapes       | <span style="color: blue;">—</span> 2nd Order      |
| <span style="border: 2px solid orange; padding: 2px;"> </span> Survey Area               | <span style="color: darkblue;">—</span> 3rd Order  |
| • Rail Line Chainage   | <span style="color: purple;">—</span> 4th Order    |
|  | <span style="color: orange;">—</span> 5th Order    |

File Name (A4): R06/3607\_172.dgn  
20170315 13.34

FIGURE A31

Archaeological  
Survey Areas



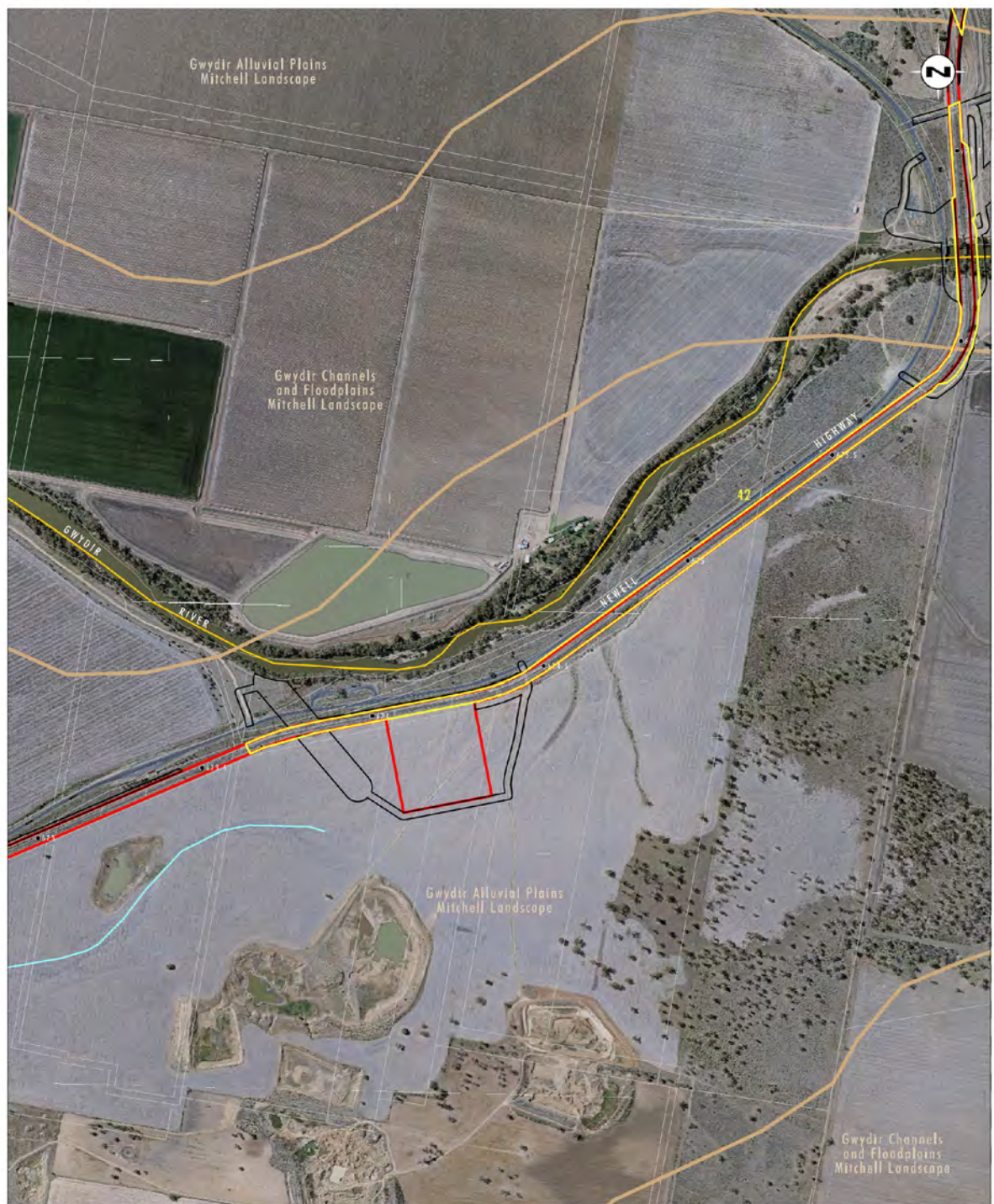


Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |  |
|--|--|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order:                                      |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: cyan;">—</span> 1st Order      |
| <span style="border: 2px solid orange; padding: 2px;"> </span> Mitchell Landscapes       | <span style="color: blue;">—</span> 2nd Order      |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               | <span style="color: lightblue;">—</span> 3rd Order |
| • Rail Line Chainage   | <span style="color: darkblue;">—</span> 4th Order  |
|  | <span style="color: yellow;">—</span> 5th Order    |

File Name (A4): R06/3607\_187.dgn  
20170320 15.14

FIGURE A32

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |   |
|--|---|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order:                                   |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: cyan;">—</span> 1st Order   |
| <span style="border: 2px solid orange; padding: 2px;"> </span> Mitchell Landscapes       | <span style="color: blue;">—</span> 2nd Order   |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               | <span style="color: blue;">—</span> 3rd Order   |
| • Rail Line Chainage   | <span style="color: blue;">—</span> 4th Order   |
|  | <span style="color: yellow;">—</span> 5th Order |

File Name (A4): R06/3607\_188.dgn  
20170320 15:15

FIGURE A33

Archaeological  
Survey Areas









### Legend

- ▬ Proposal Site
- ▬ Additional Assessment Area
- ▬ Mitchell Landscapes
- ▬ Survey Area
- Rail Line Chainage

File Name (A4): R06/3607\_190.dgn  
20170315 13.38

FIGURE A35  
Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- Proposal Site
- Additional Assessment Area
- Mitchell Landscapes
- Survey Area
- Rail Line Chainage
- ◆ New Sites Recorded During Survey
- Stream Order:
  - 1st Order
  - 2nd Order
  - 3rd Order
  - 4th Order
  - 5th Order

File Name (A4): R06/3607\_191.dgn  
20170320 15.33

FIGURE A36

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750 m  
1:15 000

### Legend

- |  |  |  |   |
|--|--|--|---|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | <span style="color: blue;">◆</span> New Sites Recorded During Survey | Stream Order:                                      | <span style="color: yellow;">—</span> 5th Order |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area |  | <span style="color: lightblue;">—</span> 1st Order | <span style="color: blue;">—</span> 2nd Order   |
| <span style="border: 2px solid orange; padding: 2px;"> </span> Mitchell Landscapes       |  | <span style="color: darkblue;">—</span> 3rd Order  | <span style="color: purple;">—</span> 4th Order |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               |  |  |   |
| • Rail Line Chainage   |  |  |   |

File Name (A4): R06/3607\_192.dgn  
20170320 15.34

FIGURE A37  
Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750 m  
1:15 000

### Legend

- Proposal Site
- Additional Assessment Area
- Rail Line Chainage
- Stream Order:
  - 1st Order
  - 2nd Order
  - 3rd Order
  - 4th Order
  - 5th Order

File Name (A4): R06/3607\_193.dgn  
20170315 13.41

FIGURE A38

Archaeological  
Survey Areas





**Legend**

- |  |   |  |
|--|---|--|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order:                                 | <span style="border: 2px solid yellow; padding: 2px;"> </span> 5th Order |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: cyan;">—</span> 1st Order | <span style="color: blue;">—</span> 2nd Order                            |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               | <span style="color: blue;">—</span> 3rd Order | <span style="color: blue;">—</span> 4th Order                            |
| • Rail Line Chainage   |   |  |
| ◆ New Sites Recorded During Survey   |   |  |

File Name (A4): R06/3607\_194.dgn  
20170315 13.42

FIGURE A39  
Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

#### Legend

- Proposal Site
- Additional Assessment Area
- Survey Area
- Rail Line Chainage

- Stream Order:
- 1st Order
  - 2nd Order
  - 3rd Order
  - 4th Order
  - 5th Order

FIGURE A40

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
11:1155 00000

### Legend

- |  |   |
|--|---|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order:                                   |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: cyan;">—</span> 1st Order   |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               | <span style="color: blue;">—</span> 2nd Order   |
| • Rail Line Chainage   | <span style="color: green;">—</span> 3rd Order  |
| ◆ New Sites Recorded During Survey   | <span style="color: purple;">—</span> 4th Order |
|  | <span style="color: yellow;">—</span> 5th Order |

File Name (A4): R06/3607\_196.dgn  
20170320 15.49

FIGURE A41

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |  |
|--|--|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                                    | Stream Order:                                      |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area                     | <span style="color: lightblue;">—</span> 1st Order |
| <span style="background-color: #d3d3d3; border: 1px solid black; padding: 2px;"> </span> Mitchell Landscapes | <span style="color: blue;">—</span> 2nd Order      |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area                                   | <span style="color: darkblue;">—</span> 3rd Order  |
| • Rail Line Chainage   | <span style="color: navy;">—</span> 4th Order      |
|  | <span style="color: gold;">—</span> 5th Order      |

FIGURE A42

Archaeological  
Survey Areas



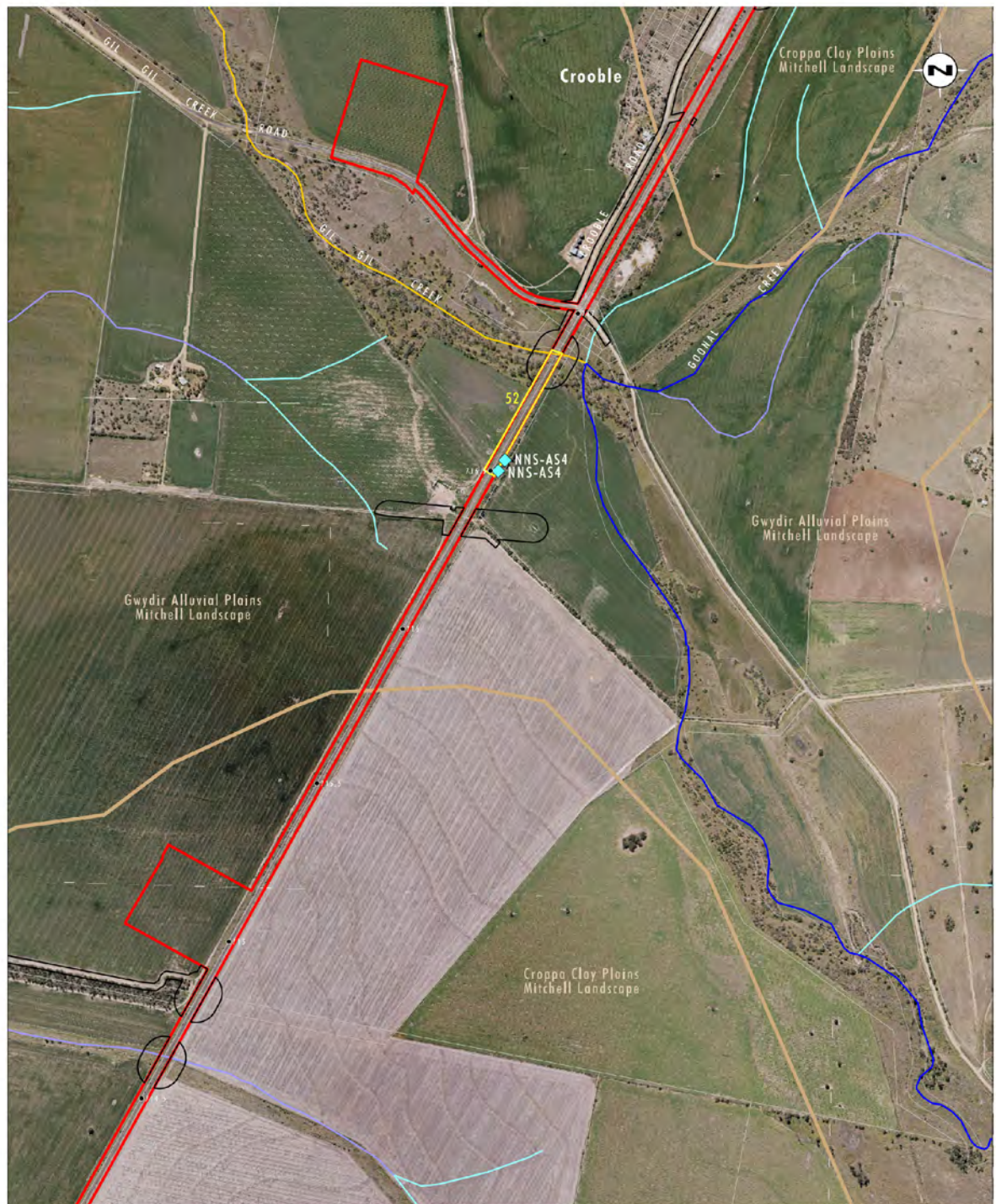


Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |  |
|--|--|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order:                                      |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: lightblue;">—</span> 1st Order |
| <span style="border: 2px solid orange; padding: 2px;"> </span> Mitchell Landscapes       | <span style="color: blue;">—</span> 2nd Order      |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               | <span style="color: darkblue;">—</span> 3rd Order  |
| <span style="color: black;">•</span> Rail Line Chainage                                  | <span style="color: purple;">—</span> 4th Order    |
| <span style="color: blue;">◆</span> New Sites Recorded During Survey                     | <span style="color: yellow;">—</span> 5th Order    |

File Name (A4): R06/3607\_198.dgn  
20170315 13.45

FIGURE A43

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- Proposal Site
- Additional Assessment Area
- Mitchell Landscapes
- Rail Line Chainage

- Stream Order:
- 1st Order
  - 2nd Order
  - 3rd Order
  - 4th Order
  - 5th Order

FIGURE A44

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

#### Legend

- Proposal Site
- Additional Assessment Area
- Mitchell Landscapes
- Rail Line Chainage

- Stream Order:
- 1st Order
  - 2nd Order
  - 3rd Order
  - 4th Order
  - 5th Order

FIGURE A45

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- Proposal Site
- Additional Assessment Area
- Mitchell Landscapes
- Rail Line Chainage

- Stream Order:
- 1st Order
  - 2nd Order
  - 3rd Order
  - 4th Order
  - 5th Order

FIGURE A46

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- ▬ Proposal Site
- Additional Assessment Area
- Rail Line Chainage

Stream Order:  
▬ 1st Order  
▬ 2nd Order  
▬ 3rd Order  
▬ 4th Order  
▬ 5th Order

FIGURE A47

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- Proposal Site
- Additional Assessment Area
- Mitchell Landscapes
- Survey Area
- Rail Line Chainage

- Stream Order:
- 1st Order
  - 2nd Order
  - 3rd Order
  - 4th Order
  - 5th Order

FIGURE A48

Archaeological  
Survey Areas



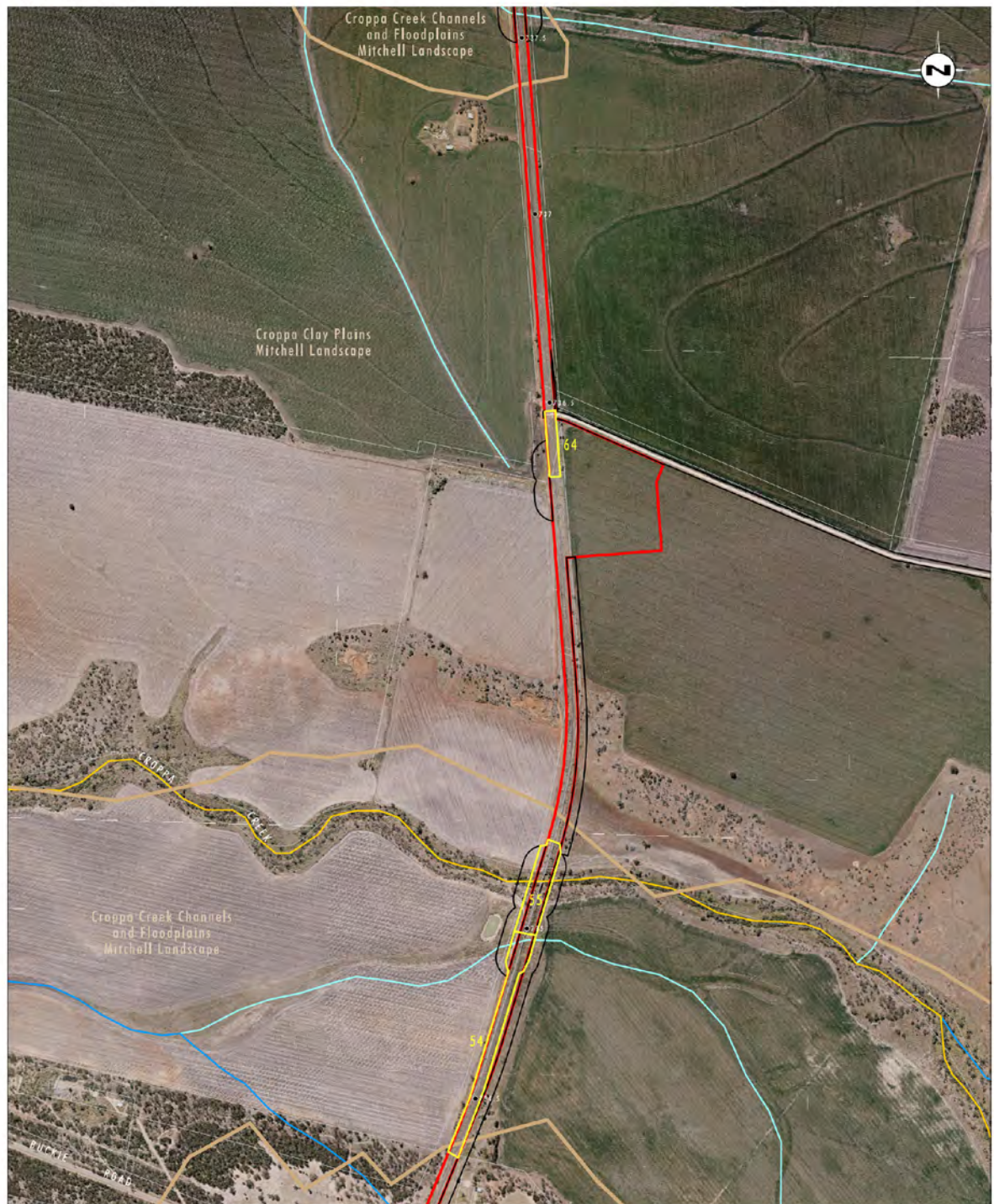


Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- Proposal Site
- Additional Assessment Area
- Mitchell Landscapes
- Survey Area
- Rail Line Chainage

- Stream Order:
- 1st Order
  - 2nd Order
  - 3rd Order
  - 4th Order
  - 5th Order

FIGURE A49

Archaeological  
Survey Areas



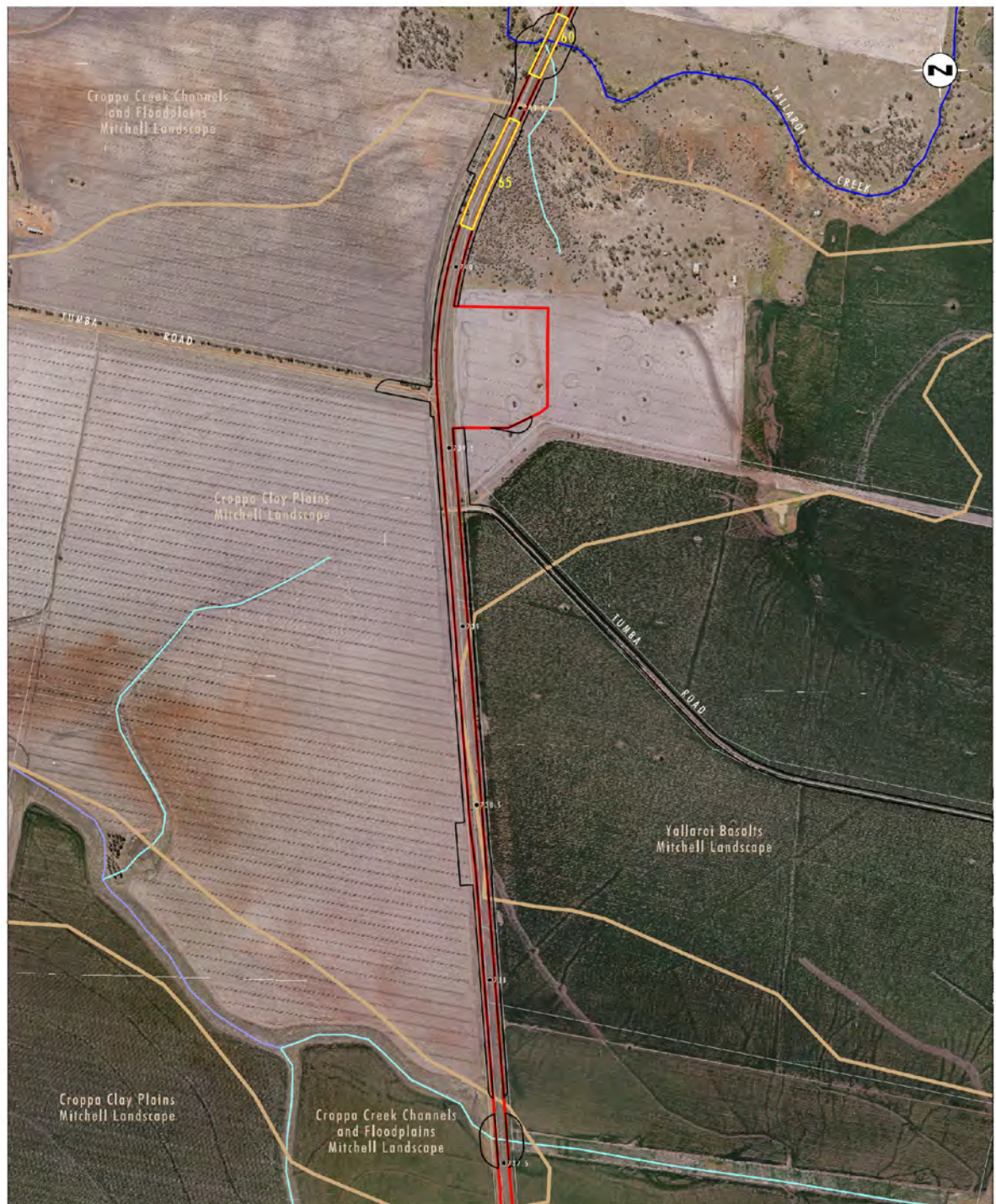


Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |               |
|--|---------------|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order: |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | 1st Order     |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Mitchell Landscapes       | 2nd Order     |
| <span style="border: 2px solid orange; padding: 2px;"> </span> Survey Area               | 3rd Order     |
| • Rail Line Chainage   | 4th Order     |
|  | 5th Order     |

FIGURE A50

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- Proposal Site
- Additional Assessment Area
- Mitchell Landscapes
- Survey Area
- Rail Line Chainage

- Stream Order:
- 1st Order
  - 2nd Order
  - 3rd Order
  - 4th Order
  - 5th Order

FIGURE A51

Archaeological  
Survey Areas



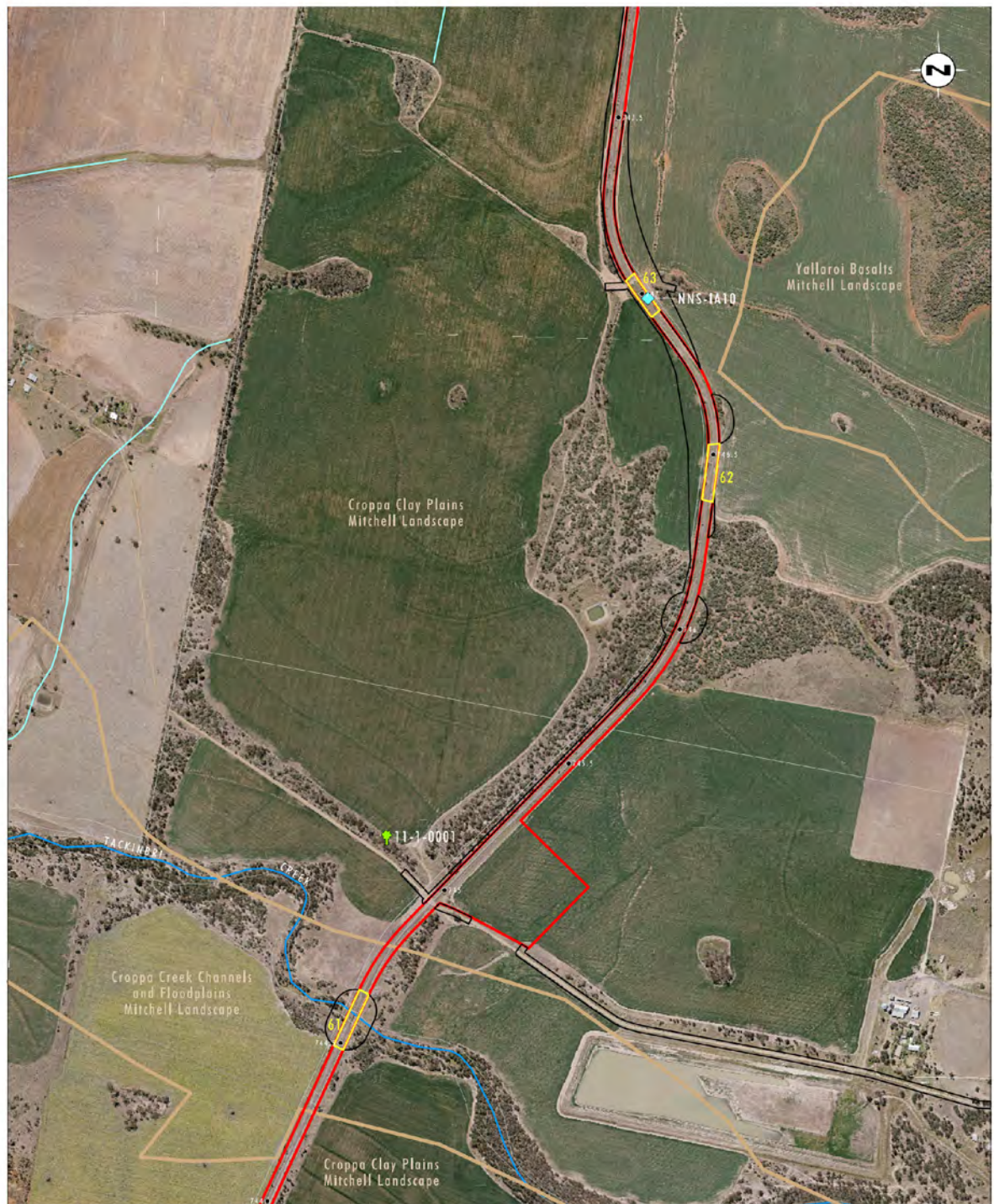


Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- Proposal Site
- Additional Assessment Area
- Mitchell Landscapes
- Survey Area
- Rail Line Chainage
- ◆ New Sites Recorded During Survey

🌳 Scarred Tree or Carved Tree

Stream Order:  
— 1st Order  
— 2nd Order  
— 3rd Order  
— 4th Order  
— 5th Order

FIGURE A52

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- Proposal Site
- Additional Assessment Area
- Mitchell Landscapes
- Survey Area
- Rail Line Chainage
- Artefact Scatter

◆ New Sites Recorded During Survey

Stream Order:  
— 1st Order  
— 2nd Order  
— 3rd Order  
— 4th Order  
— 5th Order

FIGURE A53

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |  |  |
|--|--|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order:                                      |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | <span style="color: lightblue;">—</span> 1st Order |
| <span style="border: 2px solid orange; padding: 2px;"> </span> Mitchell Landscapes       | <span style="color: blue;">—</span> 2nd Order      |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Survey Area               | <span style="color: darkblue;">—</span> 3rd Order  |
| • Rail Line Chainage   | <span style="color: navy;">—</span> 4th Order      |
| • Artefact Scatter   | <span style="color: black;">—</span> 5th Order     |

File Name (A4): R06/3607\_209.dgn  
20170315 13:57

FIGURE A54

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

0 250 500 750m  
1:15 000

### Legend

- |   |   |
|---|---|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                                   | Stream Order:                                   |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Additional Assessment Area                   | <span style="color: cyan;">—</span> 1st Order   |
| <span style="background-color: yellow; border: 1px solid black; padding: 2px;"> </span> Mitchell Landscapes | <span style="color: blue;">—</span> 2nd Order   |
| <span style="background-color: yellow; border: 1px solid black; padding: 2px;"> </span> Survey Area         | <span style="color: blue;">—</span> 3rd Order   |
| • Rail Line Chainage  | <span style="color: blue;">—</span> 4th Order   |
| ◆ New Sites Recorded During Survey  | <span style="color: yellow;">—</span> 5th Order |

File Name (A4): R06/3607\_210.dgn  
20170315 13:58

FIGURE A55

Archaeological  
Survey Areas





Image Source: ARTC (2016)  
Data Source: ARTC (2016), Umwelt (2016)

### Legend

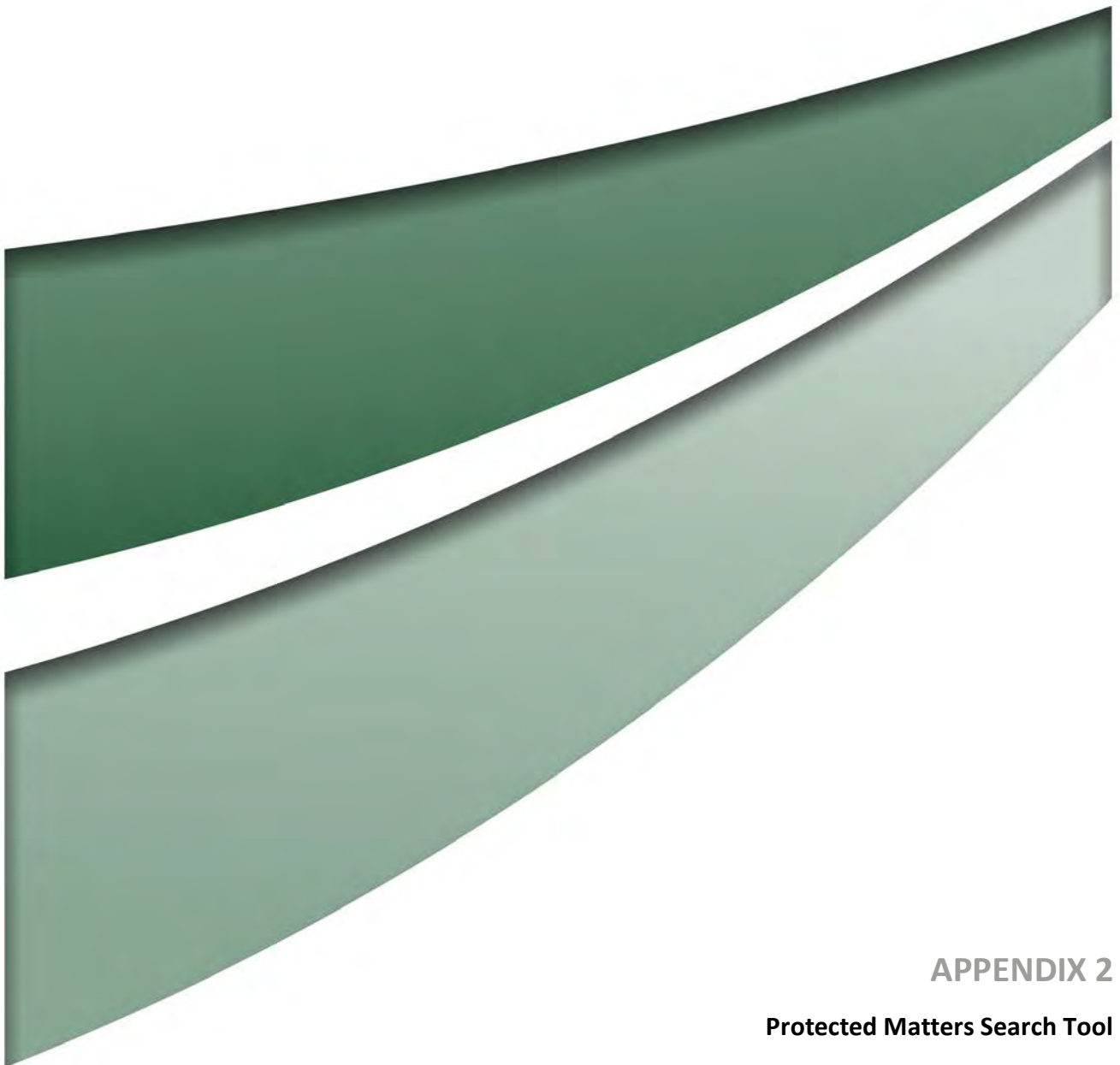
- |  |               |
|--|---------------|
| <span style="border: 2px solid red; padding: 2px;"> </span> Proposal Site                | Stream Order: |
| <span style="border: 2px solid black; padding: 2px;"> </span> Additional Assessment Area | 1st Order     |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Mitchell Landscapes       | 2nd Order     |
| • Rail Line Chainage   | 3rd Order     |
|  | 4th Order     |
|  | 5th Order     |

Image Source:  
Data Source:  
File Name (A4): R06/3607\_211.dgn  
20170315 14:35

FIGURE A56

Archaeological  
Survey Areas





## APPENDIX 2

### Protected Matters Search Tool





# EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 06/04/16 15:30:33

[Summary](#)

[Details](#)

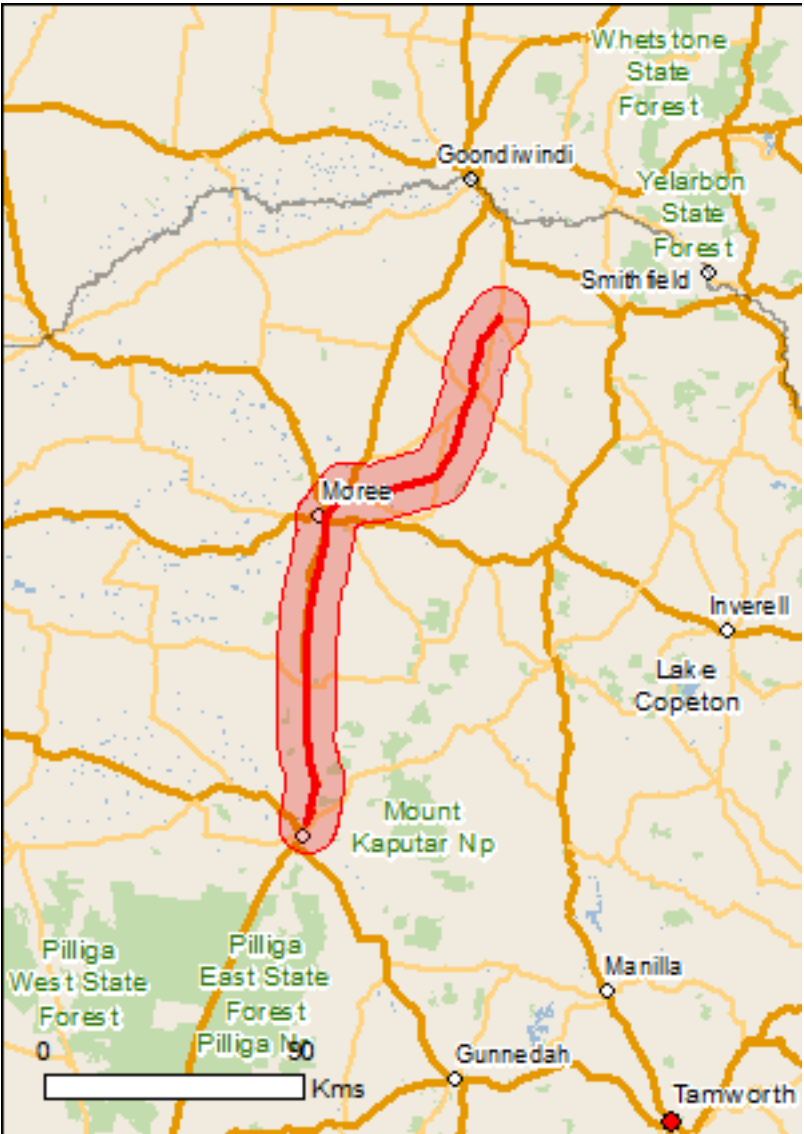
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

[Coordinates](#)

[Buffer: 10.0Km](#)





# Summary

## Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	1
<a href="#">Wetlands of International Importance:</a>	4
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	None
<a href="#">Listed Threatened Ecological Communities:</a>	7
<a href="#">Listed Threatened Species:</a>	25
<a href="#">Listed Migratory Species:</a>	9

## Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

<a href="#">Commonwealth Land:</a>	6
<a href="#">Commonwealth Heritage Places:</a>	1
<a href="#">Listed Marine Species:</a>	12
<a href="#">Whales and Other Cetaceans:</a>	None
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Commonwealth Reserves Marine:</a>	None

## Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

<a href="#">State and Territory Reserves:</a>	4
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Invasive Species:</a>	29
<a href="#">Nationally Important Wetlands:</a>	None
<a href="#">Key Ecological Features (Marine)</a>	None

# Details

## Matters of National Environmental Significance

National Heritage Properties		[ Resource Information ]
Name	State	Status
Indigenous		
<a href="#">Moree Baths and Swimming Pool</a>	NSW	Listed place

Wetlands of International Importance (Ramsar)		[ Resource Information ]
Name	Proximity	
<a href="#">Banrock station wetland complex</a>	900 - 1000km upstream	
<a href="#">Gwydir wetlands: gingham and lower gwydir (big leather) watercourses</a>	40 - 50km upstream	
<a href="#">Riverland</a>	900 - 1000km upstream	
<a href="#">The coorong, and lakes alexandrina and albert wetland</a>	1100 - 1200km	

Listed Threatened Ecological Communities		[ Resource Information ]
For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.		

Name	Status	Type of Presence
<a href="#">Brigalow (Acacia harpophylla dominant and co-dominant)</a>	Endangered	Community known to occur within area
<a href="#">Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions</a>	Endangered	Community likely to occur within area
<a href="#">Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia</a>	Endangered	Community may occur within area
<a href="#">Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland</a>	Critically Endangered	Community likely to occur within area
<a href="#">Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions</a>	Endangered	Community likely to occur within area
<a href="#">Weeping Myall Woodlands</a>	Endangered	Community likely to occur within area
<a href="#">White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland</a>	Critically Endangered	Community likely to occur within area

Listed Threatened Species		[ Resource Information ]
Name	Status	Type of Presence
Birds		
<a href="#">Anthochaera phrygia</a> Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Erythrotriorchis radiatus</a> Red Goshawk [942]	Vulnerable	Species or species habitat may occur within area
<a href="#">Geophaps scripta scripta</a> Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area
<a href="#">Grantiella picta</a> Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Lathamus discolor</a> Swift Parrot [744]	Endangered	Species or species habitat may occur within

Name	Status	Type of Presence
area		
<a href="#">Leipoa ocellata</a> Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Polytelis swainsonii</a> Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Rostratula australis</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Fish		
<a href="#">Maccullochella peelii</a> Murray Cod [66633]	Vulnerable	Species or species habitat may occur within area
Frogs		
<a href="#">Litoria booroolongensis</a> Booroolong Frog [1844]	Endangered	Species or species habitat may occur within area
Mammals		
<a href="#">Chalinolobus dwyeri</a> Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Nyctophilus corbeni</a> Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)</a> Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Pseudomys pilligaensis</a> Pilliga Mouse, Poolkoo [99]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Pteropus poliocephalus</a> Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Plants		
<a href="#">Androcalva procumbens</a> [87153]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Cadellia pentastylis</a> Ooline [9828]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Dichanthium setosum</a> bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Homopholis belsonii</a> Belson's Panic [2406]	Vulnerable	Species or species habitat may occur within area
<a href="#">Swainsona murrayana</a> Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Thesium australe</a> Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
<a href="#">Tylophora linearis</a> [55231]	Endangered	Species or species habitat likely to occur within area



Name	Status	Type of Presence
Reptiles		
<a href="#">Anomalopus mackayi</a>		
Five-clawed Worm-skink, Long-legged Worm-skink [25934]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Aprasia parapulchella</a>		
Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area
<a href="#">Uvidicolus sphyrurus</a>		
Border Thick-tailed Gecko, Granite Belt Thick-tailed Gecko [84578]	Vulnerable	Species or species habitat likely to occur within area

Listed Migratory Species

[ [Resource Information](#) ]

\* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
<a href="#">Apus pacificus</a>		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Migratory Terrestrial Species		
<a href="#">Hirundapus caudacutus</a>		
White-throated Needletail [682]		Species or species habitat known to occur within area
<a href="#">Merops ornatus</a>		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
<a href="#">Motacilla flava</a>		
Yellow Wagtail [644]		Species or species habitat may occur within area
<a href="#">Myiagra cyanoleuca</a>		
Satin Flycatcher [612]		Species or species habitat known to occur within area
<a href="#">Rhipidura rufifrons</a>		
Rufous Fantail [592]		Species or species habitat known to occur within area

Migratory Wetlands Species		
<a href="#">Ardea alba</a>		
Great Egret, White Egret [59541]		Breeding known to occur within area
<a href="#">Ardea ibis</a>		
Cattle Egret [59542]		Breeding likely to occur within area
<a href="#">Gallinago hardwickii</a>		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land

[ [Resource Information](#) ]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land -
Commonwealth Land - Australian Postal Commission
Commonwealth Land - Australian Telecommunications Commission
Commonwealth Land - Commonwealth Scientific & Industrial Research Organisation
Commonwealth Land - Commonwealth Trading Bank of Australia
Commonwealth Land - Telstra Corporation Limited

Commonwealth Heritage Places

[ [Resource Information](#) ]

Name	State	Status
Historic		
<a href="#">Narrabri Post Office and former Telegraph Office</a>	NSW	Listed place
Listed Marine Species		[ <a href="#">Resource Information</a> ]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<a href="#">Ardea alba</a> Great Egret, White Egret [59541]		Breeding known to occur within area
<a href="#">Ardea ibis</a> Cattle Egret [59542]		Breeding likely to occur within area
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]		Species or species habitat known to occur within area
<a href="#">Lathamus discolor</a> Swift Parrot [744]	Endangered	Species or species habitat may occur within area
<a href="#">Merops ornatus</a> Rainbow Bee-eater [670]		Species or species habitat may occur within area
<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat may occur within area
<a href="#">Myiagra cyanoleuca</a> Satin Flycatcher [612]		Species or species habitat known to occur within area
<a href="#">Rhipidura rufifrons</a> Rufous Fantail [592]		Species or species habitat known to occur within area
<a href="#">Rostratula benghalensis (sensu lato)</a> Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves		[ Resource Information ]
Name		State
Bobbiwaa		NSW
Bullala		NSW
Killarney		NSW
Kirramingly		NSW

Invasive Species[ Resource Information ]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur



Name	Status	Type of Presence
		within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat may occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		Species or species habitat likely to occur within area

# Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

# Coordinates

-28.92037 150.392591,-28.932389 150.390702,-28.934117 150.390016,-28.93592 150.388771,-28.940877 150.383321,-28.947487 150.376111,-28.95665 150.365897,-28.976024 150.34444,-28.981881 150.340148,-28.99134 150.333797,-29.002451 150.333453,-29.011909 150.332252,-29.014912 150.33311,-29.017313 150.335342,-29.021967 150.33517,-29.024519 150.333797,-29.028121 150.329677,-29.030598 150.327016,-29.0345 150.324527,-29.05641 150.314056,-29.07104 150.307017,-29.095343 150.310107,-29.111241 150.311824,-29.128337 150.304614,-29.161321 150.291225,-29.202087 150.274058,-29.231752 150.266505,-29.26051 150.258609,-29.280276 150.246936,-29.329675 150.21741,-29.349128 150.205394,-29.352719 150.199901,-29.391016 150.048839,-29.40298 150.000774,-29.404476 149.991847,-29.399241 149.950133,-29.395427 149.917745,-29.395882 149.915734,-29.397191 149.914919,-29.398612 149.915133,-29.399471 149.916077,-29.400892 149.919167,-29.402201 149.920498,-29.403771 149.921013,-29.410949 149.921871,-29.413043 149.920154,-29.421566 149.907795,-29.421267 149.902817,-29.430088 149.883076,-29.436816 149.876037,-29.456249 149.862133,-29.465516 149.85561,-29.467085 149.853378,-29.46858 149.849516,-29.470149 149.8484,-29.478069 149.848486,-29.483598 149.850889,-29.488231 149.851833,-29.493087 149.85252,-29.501914 149.853555,-29.50972 149.853126,-29.533396 149.847805,-29.555797 149.839222,-29.592524 149.832355,-29.621478 149.827205,-29.644158 149.814846,-29.653258 149.812443,-29.686669 149.805061,-29.690622 149.805741,-29.696698 149.804711,-29.715783 149.801621,-29.744404 149.801621,-29.81443 149.788918,-29.878678 149.789948,-30.009872 149.792523,-30.035733 149.789433,-30.049925 149.788489,-30.108154 149.797415,-30.114836 149.798789,-30.121518 149.799819,-30.1426 149.807544,-30.180447 149.820075,-30.185789 149.820761,-30.197659 149.815612,-30.225845 149.810118,-30.231629 149.806685,-30.239119 149.808831,-30.245718 149.807544,-30.251131 149.803767,-30.263586 149.805312,-30.266848 149.805312,-30.271296 149.800677,-30.293383 149.795699,-30.293079 149.795446

# Acknowledgements

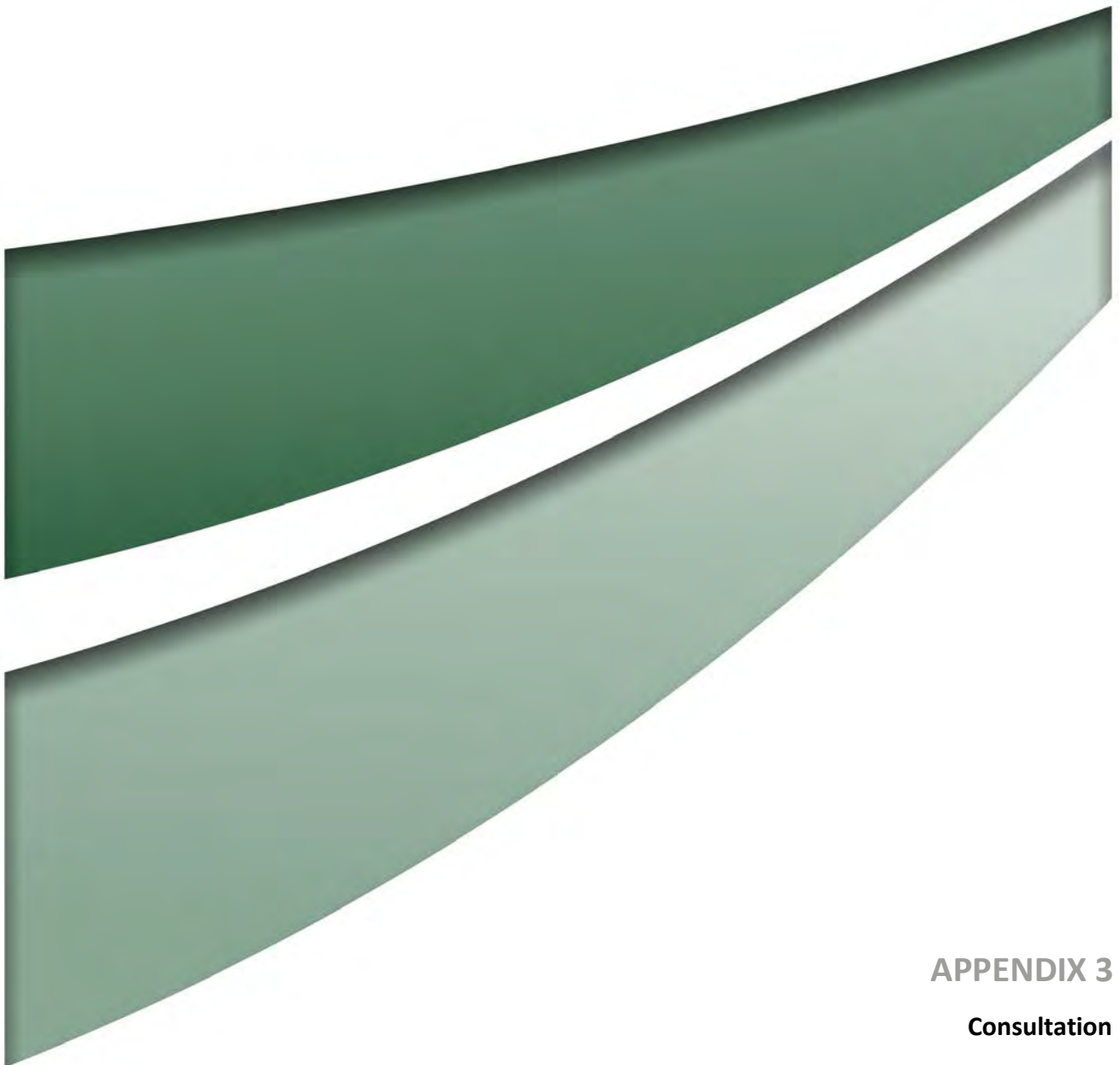
This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Parks and Wildlife Commission NT, Northern Territory Government](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Atherton and Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.





## APPENDIX 3

### Consultation





National  
Native Title  
Tribunal

18 December 2015

**Ms Alison Crocker**

**Community Engagement Manager**

**Parkes to Narramine/Narrabri to North Star**

**Australian Rail Track Corporation**

**20 Newton Street**

**BROADMEADOW NSW 2292**

**Operations East, Sydney Office**

Level 16, Law Courts Building,  
Queens Square

Sydney NSW 2000

GPO Box 9973

Sydney NSW 2000

Telephone (02) 9227 4000

Facsimile (02) 9227 4030

Our Reference: 674

Dear Alison

**Native Title Search Results Narrabri to north Star NSW**

Thank you for your search request received on 14 December 2015 in relation to the above area.

**Search Results**

The results provided are based on the information you supplied and are derived from a search of the following Tribunal databases:

Register Type	NNTT Reference Numbers
Schedule of Applications (unregistered claimant applications)	Nil
Register of Native Title Claims	NC2011/006 Gomaroi People
National Native Title Register	Nil
Register of Indigenous Land Use Agreements	Nil
Notified Indigenous Land Use Agreements	Nil

I have included a register extract and attachments and a NNTT Registers fact sheet to help guide your understanding of the search result.

**Search results and the existence of native title**

Please note that the enclosed information from the Register of Native Title Claims and/or the Schedule of Applications is **not** confirmation of the existence of native title in this area. This cannot be confirmed until the Federal Court makes a determination that native title does or does



not exist in relation to the area. Such determinations are registered on the National Native Title Register.

**Tribunal accepts no liability for reliance placed on enclosed information**

The enclosed information has been provided in good faith. Use of this information is at your sole risk. The National Native Title Tribunal makes no representative, either express or implied, as to the accuracy or suitability of the information enclosed for any particular purpose and accepts no liability for use of the information or reliance placed on it.

If you have any further queries, please contact me on directly or on freecall 1800 640 501.

Yours sincerely



**Dianne Drake** | CASE MANAGER

**National Native Title Tribunal | Sydney Office, Operations East**

**Telephone (02) 9227 4007 | Facsimile (02) 9227 4030 | Email [dianne.drake@nntt.gov.au](mailto:dianne.drake@nntt.gov.au)**

**Freecall 1800 640 501 | [www.nntt.gov.au](http://www.nntt.gov.au)**

*Shared country, shared future.*

Encl: Register extract and attachments



## Searching the NNTT Registers in New South Wales

### Search service

On request the National Native Title Tribunal will search its public registers for you. A search may assist you in finding out whether any native title applications (claims), determinations or agreements exist over a particular area of land or water.

**In New South Wales native title cannot exist on privately owned land including family homes or farms.**

### What information can a search provide?

A search can confirm whether any applications, agreements or determinations are registered in a local government area. Relevant information, including register extracts and application summaries, will be provided.

In NSW because we cannot search the registers in relation to individual parcels of land we search by local government area.

**Most native title applications do not identify each parcel of land claimed. They have an external boundary and then identify the areas not claimed within the boundary by reference to types of land tenure e.g., freehold, agricultural leasehold, public works.**

### What if the search shows no current applications?

If there is no application covering the local government area this only indicates that at the time of the search either the Federal Court had not received any claims in relation to the local government area or the Tribunal had not yet been notified of any new native title claims.

It does not mean that native title does not exist in the area.

**Native title may exist over an area of land or waters whether or not a claim for native title has been made.**

### Where the information is found

The information you are seeking is held in three registers and on an applications database.

### National Native Title Register

The National Native Title Register contains determinations of native title by the High Court, Federal Court and other courts.

### Register of Native Title Claims

The Register of Native Title Claims contains applications for native title that have passed a registration test.

**Registered claims attract rights, including the right to negotiate about some types of proposed developments.**

### Register of Indigenous Land Use Agreements

The Register of Indigenous Land Use Agreements contains agreements made with people who hold or assert native title in an area.

**The register identifies development activities that have been agreed by the parties.**

### Schedule of Native Title Applications

The Schedule of Native Title Applications contains the description of the location, content and status of a native title claim.

This information may be different to the information on the Register of Native Title Claims, e.g., because an amendment has not yet been tested.

### How do I request a native title search?

Download the Search Request Form from the Tribunal's website at -

<http://www.nntt.gov.au/assistance/Pages/Search-es-and-providing-Register-information.aspx>

**Email to:** [NSWEnquiries@nntt.gov.au](mailto:NSWEnquiries@nntt.gov.au)

**Post to:** GPO Box 9973 Sydney NSW 2001

**For additional enquiries:** 02 9227 4000

# Extract from Schedule of Native Title Applications

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**Application Reference:** Federal Court number: NSD2308/2011  
NNTT number: NC2011/006

**Application Name:** Gomeroi People v Attorney General of New South Wales (Gomeroi People)

**Application Type:** Claimant

**Application filed with:** Federal Court of Australia

**Date application filed:** 20/12/2011

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**Current stage(s):** Notification Complete

**Registration information:** Please refer to the Register of Native Title Claims/National Native Title Register (as appropriate) for registered details of this application.

**Date claim entered on Register of Native Title Claims:** 20/01/2012

**Registration decision status:** Accepted for registration

**Registration history:** Registered from 20/01/2012

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**Applicants:** Alfred Boney, Maureen Sulter, Clifford Toomey, Lyall Munro Junior, Norman McGrady, Madeline McGrady, Leslie Woodbridge, Jason Wilson, Michael Anderson, Alfred Priestly, Ray Tighe, Greg Griffiths, Burrul Galigabali, Susan Smith, Richard Green, Raymond Welsh Senior, Elaine Binge, Bob Weatherall, Anthony Munro

**Address(es) for Service:** Sam Hegney Solicitors  
53 Fox Street  
Walgett NSW 2832  
**Phone:** 02 6828 1649  
**Fax:** 02 6828 1649

## Additional Information

Not applicable

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## Persons claiming to hold native title:

The Gomeroi People are the native title claim group on whose behalf the Applicant makes this



application. The native title claim group comprises all the descendants of the following apical ancestors:

Thomas Pitt (who was born in 1838).

Billy Barlow (who was born in Tycannah in 1835)

Peter James Cutmore (who was born in Tycannah in 1849)

James Swan (who was born in Combadello in 1825)

Harriett Wyndham (who was born in Mungie Bundie in 1863)

William Levy (who was born in Terry Hie Hie in 1867)

Sally Nerang (who was born in Terry Hie Hie circa 1840)

Eliza Barlow (who was born in Terry Hie Hie circa 1860)

Kitty Dangar (who was born in Walgett in 1837)

William Clark (who was born in Collarenebri in 1845)

Murray Ippai (who was born in Collarenebri)

Mary Ann Ippai (who was born on the Barwon River)

Edward Morgan (who was born in Dungalear in 1855)

Nancy Morgan (who was born in Dungalear in 1861)

Robert Nicholls (who was born in Collarenebri in 1842)

Frank Mundy (who was born in Collymongle in 1872)

Lena Combo (who was born in Mogil Mogil in 1876)

Jack Thunderbolt (who was born in Walgett in 1847)

Betsy Yates (also known as Polly Yates and Polly Burras) (who was born on the Barwon River circa 1860)

Jenny (who was born in Walgett circa 1840)

Dick Silk (who was born in Walgett)

Fred Parker (who was born in Gingie in 1864)

Murray Rook (who was born in Collarenebri in 1865)

Ethel Tinker (who was born in Mercadool circa 1878)

Emily McPherson (who was born in Collarenebri in 1892)

Billy Whitford (who was born in 1828)

King Robert Cobbler (who was born in Mogil Mogil in 1855)

Billy Wightman (who was born in Kunopia in 1813)

John McGrady (who was born in Moree in 1853)

William Dennison (who was born in Kunopia in 1843)

Charlie Dennison (who was born circa 1846-1866)

Alice Dennison (who was born in Moree circa 1863 -1873)

Lucy Long (who was born in Boomi circa 1850)

Minnie Lance (who was born in Boomi circa 1868)

, Harry Denham

Charles Cubby (who was born on the Boomi River)

Sarah Wilson (also known as Sarah Murphy and Sarah Witman) (who was born in Kunopia in 1868)

Reuben Bartman (who was born in Boomi in 1876)

Billy Dunn (who was born in Mungindi)

William Edwards (who was born in Thallon)

Queen Susan (who was born in Welltown)

Phoebe Munday-Williams (who was born in Mungindi in 1864)

George Bennett (who was born in Mungindi in 1873)

Amelia Bell (also known as Amelia Brown) (who was born in Bingara in 1862)

William Snow (who was born in Tamworth or Moonbi in 1855)

Francis Snow (who was born in Tamworth in 1858)

Matilda Wyndham (who was born in Bingara in 1842)

Thomas Duke (who was born in Bingara in 1847)

Teasie Griffen (also known as Jessie Griffen and Ellen Griffen) (who was born in Barraba in 1859)

Mary Anne Hammond (who was born in Tamworth in 1836)

Elizabeth Guest (also known as Eliza Gillan) (who was born in Liverpool Plains in 1840)

Jane Maloney (who was born in Walhallow in 1838)

Mary Ann Healy (who was born in Murrurundi in 1829)

Thomas Taylor (who was born in Coolah in 1836)

Elizabeth Loder (also known as Elizabeth Bates) (who was born in Murrurundi in 1843)

Sarah Gatehouse (who was born in Aberdeen in 1835)

William Duncomb (who was born in Muswellbrook circa 1830)

John Morris Tighe (who was born in 1852)

Susan Bishop-Young (also known as Susan Dangar) (who was born in Warialda)

Sarah Murphy (who was born in 1846)

Thomas French (who was born in Scone in 1825)

John Thomas Bates (who was born on the Mooki River in 1840)

Alexander Nean (who was born in Liverpool Plains in 1843)

David Johnson (who was born in Cassilis circa 1838-1844),

Mary Orr (also known as Nellie Orr) (who was born in Garrawilla in 1853)

Julia Campbell (who was born on the Castlereagh River circa 1833-1834)

Annie Jendis (who was born in Burbagate in 1845)

Harriet Munro (who was born in Gunnedah in 1867)

Alice Eliza Natty (who was born on the Namoi River near Boggabri in 1857)

James Tighe (who was born in Coonabarabran in 1842)

William Tighe (who was born in Toorawandi in 1844)

Patrick Tighe (who was born in Coonabarabran in 1852)

Jane Tighe (who was born in 1864)

Mary Jane Griffin (also known as 'Old Ibidah')

Susan Slater (who was born in Coonabarabran in 1839)

Thomas Leslie (who was born in Kirban circa 1850-1854),

James Leslie (who was born in born Armatree in 1853)

Ellen Fuller (who was born in Rockgidgiel in 1854)

Sarah Hughes (who was born in Coonabarabran circa 1834-1859)

James Cole (who was born in 1845)

Mary Ann Hall (who was born on the Castlereagh River in 1840)

Samuel Bruce Smith (who was born in Tambar Springs circa 1860 ' 1863)

Elizabeth Ann Smith (who was born in Mullaley in 1866)

William Green (also known as William Edwards) (who was born in Kings Plains near Inverell in 1853)

Angus Landsborough (who was born in Newstead in 1867)

Patrick Landsborough (who was born in Newstead in 1872)

Alec Brown (who was born in Bundarra in 1873)

Margaret King (who was born in Gummin Gummin near Gulargambone circa 1854-1858)

William James King (who was born in Coonabarabran circa 1851-1853)

Florence May Blackman (also known as Louisa Florima Blackman) (who was born in Coonamble in 1846)

Euphemia Blackman (who was born on the Castlereagh River in 1851)

Henry Arthur Yates (who was born in Coonamble in 1860)

Betsy Yates (who was born in Wingadee in 1854),

Annie Day (who was born in Bullarora Station near Coonamble circa 1871-1876)

Army Toomey (who was born in Wingadee near Coonamble in 1886)

Maria Clare Hall (who was born in Gulargambone circa 1830-1833)

Thomas Carney (who was born in Tonderburine in 1852)

Jim Duncan (who was born in Coonamble in 1854)

Thomas Reid (who was born in Cuttabri in 1840)



Thomas John Blacklock (who was born in Terembone in 1851)

Thomas Dangar (who was born in Drilldool in 1857)

Harry Doolan (who was born in Pilliga in 1855)

George Green (who was born in 1851)

Lucy Barr (who was born in Boggabri in 1851)

Peggy Reid (who was born in Cuttabri in 1836)

Julia Jane Saunders (who was born in Wee Waa in 1845)

William Newman (who was born in Cuttabri in 1807)

Emma Dingwell (who was born in Bograh Station near Narrabri in 1864)

Kate Purser (who was born in Narrabri in 1863)

Mary Ann Lucas (who was born in Millie in 1840)

Frank Maybury (who was born in Killarney Station near Narrabri circa 1840)

Charlotte Hagan (also known as Charlotte Keegan) (who was born in Narrabri circa 1850-1870)

Nellie Combo (who was born in Wallah Station near Narrabri in 1850)

Mary Peake (who was born in Narrabri in 1848)

Descendants include persons who are descendants by adoption according to traditional law and custom.

Adoption into the Gomeroi People is acknowledged and practiced in accordance with Gomeroi traditional laws and customs.

If an objective test for adoption is required, it can be tested for by the following features based upon Gomeroi traditional laws and customs:

- Has the adopted individual been raised from childhood by a member of the Gomeroi native title claim group?
- Has the adopted individual, since childhood, identified himself or herself as a member of the Gomeroi native title claim group?,
- Has the adopted individual, since childhood, been identified by other members of the Gomeroi native title claim group as a member of the Gomeroi native title claim group?
- Has the adopted individual, since childhood, been attributed the same rights and interests as other members of the Gomeroi native title claim group, by members of the Gomeroi native title claim group?
- Has the adopted individual demonstrated a consistent and active involvement in the Gomeroi native title claim group since childhood, comparable with the consistent and active involvement of non-adopted members of the Gomeroi native title claim group?

#### **Native title rights and interests claimed:**

1. Where exclusive native title can be recognised (such as areas where there has been no prior extinguishment of native title or where s.238 and/or ss.47, 47A and 47B apply), the Gomeroi People as defined in Schedule A of this application, claim the right to possession, occupation, use and enjoyment of the lands and waters of the application area to the exclusion of all others subject to the valid laws of the Commonwealth and the State of New South Wales.

2. Where exclusive native title cannot be recognised, the Gomeroi People as defined in Schedule A of this application, claim the following non-exclusive rights and interests including the right to conduct activities necessary

to give effect to them

- (a) the right to access the application area;
- (b) the right to use and enjoy the application area;
- (c) the right to move about the application area;
- (d) the right to camp on the application area;
- (e) the right to erect shelters and other structures on the application area;
- (f) the right to live being to enter and remain on the application area;
- (g) the right to hold meetings on the application area;
- (h) the right to hunt on the application area;
- (i) the right to fish in the application area;
- (j) the right to have access to and use the natural water resources of the application area;
- (k) the right to gather and use the natural resources of the application area (including food, medicinal plants, timber, tubers, charcoal, wax, stone, ochre and resin as well as materials for fabricating tools, hunting implements, making artwork and musical instruments);
- (l) the right to manage natural resources including the right to carbon;
- (m) the right to share and exchange resources derived from the land and waters within the application area;
- (n) the right to participate in cultural and spiritual activities on the application area;
- (o) the right to maintain and protect places of importance under traditional laws, customs and practices in the application area;
- (p) the right to conduct ceremonies and rituals on the application area;
- (q) the right to transmit traditional knowledge to members of the native title claim group including knowledge of particular sites on the application area;
- (r) the right to speak for and make non-exclusive decisions about the application area in accordance with traditional laws and customs;
- (s) the right to speak authoritatively about the application area among other Aboriginal People in accordance with traditional laws and customs; and
- (t) the right to control access to or use of the lands and waters within the application area by other Aboriginal People in accordance with traditional laws and customs.

3. The native title rights and interests referred to in paragraph 2 do not confer possession, occupation, use or enjoyment of the lands and waters of the application area to the exclusion of all others.

4. The native title rights and interests are subject to and exercisable in accordance with:

- (a) the laws of the State of New South Wales and the Commonwealth of Australia including the common law;
- (b) the rights (past or present) conferred upon persons pursuant to the laws of the Commonwealth and the laws of the State of New South Wales; and
- (c) the traditional laws and customs of the Gomeroi People for personal, domestic and communal purposes (including social, cultural, religious, spiritual and ceremonial purposes).

**Application Area:** **State/Territory:** New South Wales  
**Brief Location:** Northwest NSW  
**Primary RATSIB Area:** New South Wales  
**Approximate size:** 111319.2488 sq km  
(Note: There may be areas within the external boundary of the application that are not claimed.)  
**Does Area Include Sea:** No

**Area covered by the claim (as detailed in the application):**

A) Area covered by application

The area covered by the application ('the Application Area') comprises all the land and waters within the external boundaries described in Attachment B and depicted in the map at Attachment C.

The Application Area description and map have been prepared with the assistance of the Geo-Spatial Unit of the National Native Title Tribunal. The area covered by this application does not include the areas described at point B below.

(B) Areas within the external boundaries not covered by the application

1. The area covered by the application excludes any land and waters covered by past or present freehold title or by previous valid exclusive possession acts as defined by section 23B of the Native Title Act 1993 (Cth)

2. The area covered by the application excludes any land and waters which are:

- a) a Scheduled interest;
- b) a freehold estate;
- c) a commercial lease that is neither an agricultural lease nor a pastoral lease;
- d) an exclusive agricultural lease or an exclusive pastoral lease;
- e) a residential lease;
- f) a community purpose lease;
- g) a lease dissected from a mining lease and referred to in s 23B(2)(c)(vii) of the Native Title Act (1993) (Cth); and
- h) any lease (other than a mining lease) that confers a right of exclusive possession over particular land or waters.

3. Subject to paragraphs 5 and 6, the area covered by the application excludes any land or waters covered by the valid construction or establishment of any public work, where the construction or establishment of the public work commenced on or before 23 December 1996.

4. Subject to paragraphs 5 and 6, exclusive possession is not claimed over areas which are subject to valid previous non-exclusive possession acts done by the Commonwealth, State or Territory.

5. Subject to paragraph 7 below, where the act specified in paragraphs 2, 3 and 4 falls within the provisions of:

- a) s 23B(9) Exclusion of acts benefiting Aboriginal Peoples or Torres Strait Islanders;
- b) s 23B(9A) Establishment of a national park or state park;
- c) s 23B(9B) Acts where legislation provides for non-extinguishment;
- d) s 23B(9C) Exclusion of Crown to Crown grants; and
- e) s 23B(10) Exclusion by regulation;

the area covered by the act is not excluded from the application.

6. Where an act specified in paragraphs 2, 3 and 4 affects or affected land or waters referred to in:

- f) s 47 Pastoral leases etc covered by claimant application;



g) s 47A Reserves covered by claimant application;

h) s 47B Vacant Crown land covered by claimant application;

the area covered by the act is not excluded from the application.

7. The area covered by the application excludes land or waters where the native title rights and interests claimed have been otherwise extinguished.

**Attachments:**

1. Map of the area covered by the application , Attachment C of the Application, 1 page - A3, 20/12/2011
2. Description of area covered by the application, Attachment B of the Application, 5 pages - A4, 20/12/2011

**NNTT Contact Details**

<b>Address:</b>	National Native Title Tribunal Sydney Office Level 16, Law Courts Building Queens Square SYDNEY NSW 2000  GPO Box 9973 SYDNEY NSW 2001
<b>Telephone:</b>	(02) 9227 4000
<b>Freecall:</b>	1800 640 501
<b>Fax:</b>	(02) 9227 4030
<b>Web Page:</b>	<a href="http://www.nntt.gov.au">www.nntt.gov.au</a>

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End of Extract



# Gomeri People

 Gomeri People

## Application Summary Attachment:

NSD2308/2011 (NC2011/006)

Map of the area covered by the application

Attachment C of the Application

Page 1 of 1, A3, 20/12/2011



**NORTH**

0 25

**KILOMETRES**

Latitude and Longitude based on Geocentric Datum of Australia 1994  
Non Projection

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NOTE: To determine areas subject to claim within the external boundary, reference to the application description is necessary.

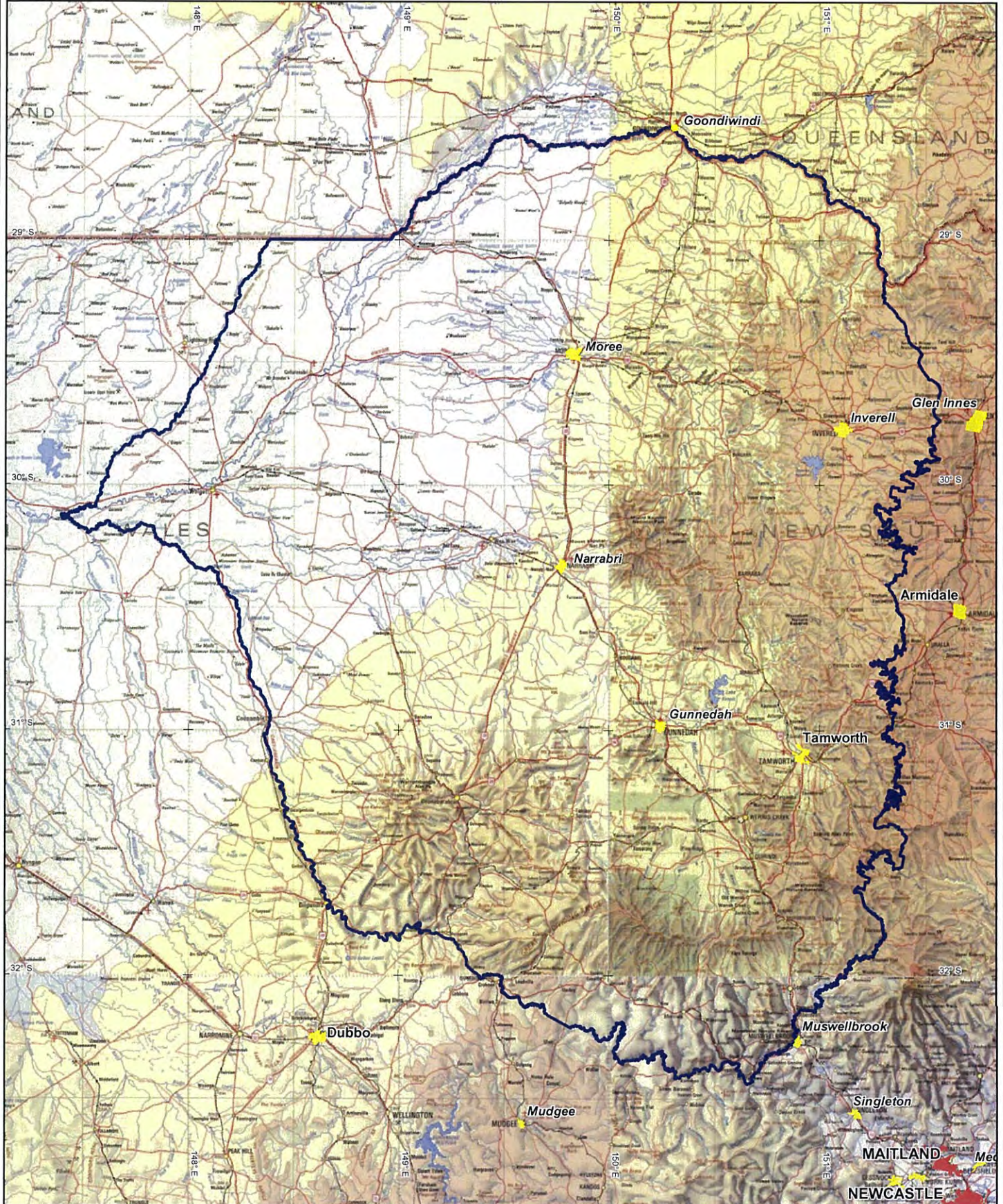
Application boundary data compiled by the NNTT from data sourced from DOL (NSW).

Topographic image data is © Commonwealth of Australia and is used under licence from Geoscience Australia 2008

NOTE: Topographic images should be used as a guide only.

Map created by: Geospatial Services, National Native Title Tribunal (09/12/2011)

The Registrar, the National Native Title Tribunal and its staff, members and agents and the Commonwealth (collectively the Commonwealth) accept no liability and give no undertakings, guarantees or warranties concerning the accuracy, completeness or fitness for purpose of the information provided. In return for you receiving this information you agree to release and indemnify the Commonwealth and third party data suppliers in respect of all claims, expenses, losses, damages and costs arising directly or indirectly from your use of the information and the use of the information you obtained by any third party.





## Gomeroi

### External boundary description

The application area covers all the land and waters within the external boundary described as:

Commencing at the intersection of the centreline of an unnamed creek and the Queensland - New South Wales border at Longitude 148.384192° East and extending easterly, generally north easterly, generally south easterly and generally southerly along that State border to the eastern bank of Crooked Creek; then generally southerly along the bank of that creek to the western boundary of Bruxner Highway road reserve; then generally southerly and generally south easterly along the western boundaries of that highway, Rocky Creek Road, Innes Glen, an unnamed road, Strathbogie Road, Maids Valley Road and Waterloo Road reserves to the northern boundary of the Gwydir Highway road reserve; then generally south westerly along the boundary of that Highway road reserve to the prolongation northerly of the eastern boundary of Lot 7001 on DP93978; then southerly along that prolongation and the eastern boundaries of that lot to its south east corner; then south east to a point 1000 metres above the Australian Height Datum (A.H.D.) at Latitude 29.762966° South; then generally southerly along that 1000 metre contour to the eastern boundary of Lot 100 on DP753260; then southerly, generally easterly, again southerly and generally westerly along the eastern boundaries of that lot and northern, eastern and southern boundaries of Lot 91 on DP753292 to again the 1000 metre contour; then generally westerly and generally south easterly along that contour line to the eastern boundary of Lot 132 on DP753300; then southerly, generally westerly and generally southerly along the eastern and southern boundaries of that lot and Lot 199 on DP46377 to again the 1000 metre contour at a point approximately 200 metres north of the Macintyre River; then generally easterly and generally south westerly along that contour line to the northern boundary of the Single National Park; then generally easterly, southerly, generally westerly, generally southerly and again generally westerly along the northern, eastern and southern boundaries of that National Park to its westernmost corner; then westerly, southerly and again westerly along the northern and western boundaries of Lots 110 and 4 on DP753667 to Lot 101 on DP753667; then southerly, generally easterly and again southerly along the eastern and northern boundaries of that lot, Lot 96 on DP753667 and the prolongation southerly of that boundary across Moredun Creek to the northern boundary of Lot 900 on DP1137399; then



generally easterly and generally southerly along the northern and eastern boundaries of the western severance of that Lot and the prolongation southerly of that boundary to the southern bank of Limestone Creek; then generally westerly, southerly, westerly, again southerly, again generally westerly along that bank, eastern and southern boundaries of Lot 82 on DP753667, northern and western boundaries of Lots 57 and 64 on DP753667 and southern boundaries of lots 65 and 63 on DP753667 to the eastern boundary of Lot 2 on DP712834; then northerly, westerly, again northerly, again westerly, again northerly, again westerly and southerly along the eastern and northern boundaries of that lot and Lot 110 on DP753645, eastern and northern boundaries of Lot 33 on DP753667 and eastern, northern and western boundaries of Lot 10 on DP753667 to that lots south west corner; then westerly along the southern boundary of Lot 11 on DP753667 to the eastern boundary of Indwarra National Park; then generally southerly along the boundaries of that National Park to the northern boundary of Lot 66 on DP753645; then easterly, southerly, again easterly and generally south easterly along the northern and eastern boundaries of Lots 66, 67, 83 on DP753645, The Basin Nature Reserve and Lot 85 on DP753645 to the northern bank of Georges Creek; then generally north easterly along the southern and eastern boundaries of Lots 20, 122 and 11 on DP753645 to the western boundary of Lot 30 on DP753645; then northerly, generally easterly, generally southerly and westerly along the western, northern and eastern boundaries of Lot 30 on DP753645 and eastern and southern boundaries of Lots 58 and 62 on DP753676 to its southwest corner; then southerly and westerly along the boundaries of Lot 51 on DP753635 to the 1000 metre contour at approx Longitude 151.282626° East; then generally south easterly and generally westerly along that 1000 meter contour to the eastern boundary of Lot 89 on DP1008694; then southerly, generally south easterly, easterly and generally southerly along the eastern boundary of that lot, north eastern boundary of Lot 49 on DP753672, northern and eastern boundaries of Lots 45, 34 and 41 on DP753672 and onwards to the southern bank of Abington Creek; then generally south easterly along that bank to the south eastern corner of Lot 69 on DP721174; then westerly, southerly and generally westerly along the boundaries of that lot and Lot 68 on DP721174 to the eastern boundary of Lot 55 on DP753671; then southerly, westerly and again southerly along the boundaries of that lot, southern boundary of Lot 79 on DP721148 and eastern boundary of Lot 54 on DP753683 to the northern boundary of Lot 46 on DP753683; then easterly, generally southerly and generally south westerly along the boundaries of that lot and Lot 2 on DP236759 to the north eastern boundary of Lot 58 on DP753683; then generally

south easterly along the boundary of that lot and onwards to the southern bank of Haylocks Creek; then generally westerly along that bank and the southern bank of Cachs Creek to the northern boundary of Thunderbolts Way road reserve; then generally south easterly along that road reserve, and the eastern boundaries of Yarrowyck-Torryburn Road and Yarrowyck Crossing Road reserve boundaries to the centreline of the Gwydir River; then generally easterly and generally southerly along that centreline to Morses Creek; then generally southerly along the centreline of that creek and Long Swamp Creek to the northern boundary of Lot 5 on DP591627; then generally south westerly along that boundary to the 1000 metre contour; then generally southerly along that contour to the western boundary of Lot 117 on DP753849; then northerly, generally easterly and southerly along the western, northern and eastern boundaries of that lot and Lot 45 on DP753849 to again the 1000 metre contour; then generally southerly along that contour to Latitude 30.937829° South; then south westerly to the northern bank of the MacDonald River at 30.953337° South; then generally southerly to the northern boundary of McNamara Street, Woolbrook; then easterly and generally southerly along the boundary of that street and the centrelines of Borthwick Street, Reid Street (Limbri-Woolbrook Road) and Campfire Road to again the 1000 metre contour at approximately Latitude 30.984652° South; then generally southerly along that contour to the northern boundary of Lot 76 on DP753847 at approximately Longitude 151.331784° East; then generally easterly along that boundary and the northern boundaries of Lot 19 on DP753847 and Lots 76, 85, 54 and 4 on DP755345 to that lots eastern boundary; then southerly along that boundary, the eastern boundary of Lot 60 on DP755345 and onwards to again the 1000 metre contour; then generally south westerly along that contour to the northern boundary of Lot 67 on DP755345; then easterly, southerly, generally easterly, generally southerly, westerly, again southerly and again westerly along the boundaries of that lot and Lot 62 on DP755345 to again the 1000 metre contour; then generally southerly along that contour to the northern boundary of Lot 71 on DP755317; then generally easterly and generally southerly along the boundaries of that lot to again the 1000 metre contour; then generally southerly along that contour to the western boundary of Lot 104 on DP755317; then northerly, generally easterly and southerly along the boundaries of that lot to again the 1000 metre contour; then generally south westerly along that contour to the northern boundary of an unnamed road reserve which bisects Lot 2 on DP731952; then generally south westerly along the boundary of that unnamed road reserve (along the Port Stephens Cutting) to the south eastern corner of the northern severance of Lot 11 on

DP755338; then generally southerly and generally easterly along the western and southern boundaries of Lots 39 and 40 on DP881258, Lot 3 on DP815453 and Lot 32 on DP755351 to its south east corner; then northerly along the eastern boundary of that lot to the prolongation westerly of the northern boundary of Lot 22 on DP755351; then generally easterly along that prolongation and that boundary to the western bank of Dungowan Creek; then generally southerly along that bank to the prolongation westerly of the northern boundary of Lot 63 on DP618784; then easterly, southerly, again easterly and generally southerly along the northern and eastern boundaries of that lot and Lots 21, 28 and 23 on DP755339 to the northern boundary of the Nundle State Forest; then generally easterly and generally southerly along the eastern boundaries of that State Forest and Tomalla State Forest to the northern bank of the Barnard River; then generally westerly along that bank to the south eastern corner of Lot 28 on DP753709; then northerly, westerly, generally northerly, again westerly, again northerly and generally westerly along the eastern and northern boundaries of that lot, Lot 26 on DP753717, Lot 28 on DP45607, Lot 7301 on DP1130347 and again Lot 28 on DP45607 to the south western corner of Lot 27 on DP45607; then northerly, generally westerly and southerly along the western boundary of that lot, southern boundaries of Nundle and Hanging Rock State Forests and eastern boundary of Back River Nature Reserve to the northern bank of the Back River; then generally westerly along that bank to the 1000 metre contour; then generally southerly, generally westerly and again generally southerly along that contour to the northern boundary of Lot 49 on DP753722, being Ben Halls Gap National Park; then generally easterly, generally southerly, generally westerly and again generally southerly along the boundaries of that National Park and onwards to the centreline of Pages Creek; then generally south easterly and generally south westerly along that centreline and the centreline of the Hunter River to the Goulburn River; then generally westerly along that centreline to approximately Longitude 149.817504° East, Latitude 32.209916° South; then north westerly to the intersection of the centrelines of two unnamed creeks at approximately Longitude 149.713070° East, Latitude 32.161341° South; then generally north westerly along that centreline and the centreline of Mona Creek to the Talbragar River; then generally north westerly along that centreline to the eastern boundary of the Castlereagh Highway road reserve; then generally north westerly along that road reserve boundary to the southern bank of the Castleragh River and onwards to the centreline of that river; then generally westerly, generally north westerly and again generally westerly along that centreline and the centreline of the Macquarie River to the



Barwon River; then generally easterly and generally north easterly along the centreline of that river and the Big Warrambool to an unnamed creek at approximately Latitude 29.030555° South; then generally north easterly along the centreline of that unnamed creek back to the commencement point.

## Note

### Data Reference and source

- Application boundary data compiled by National Native Title Tribunal based on data sourced from NTSCORP.
- Cadastre data sourced from the LPM Authority, NSW (September 2010) and Public Sector Mapping Agency (November 2011).
- Rivers / Creeks based on cadastre where available, otherwise, Topographic vector data which is © Commonwealth of Australia (Geoscience Australia) 2003.
- Road names sourced from cadastre and Google map data © 2011 - Whereis (R) Sensis Pty Ltd.
- Contour data supplied by NTSCORP.

### Reference datum

Geographical coordinates have been provided by the NNTT Geospatial Services and are referenced to the Geocentric Datum of Australia 1994 (GDA94), in decimal degrees and are based on the spatial reference data acquired from the various custodians at the time

### Use of Coordinates

Where coordinates are used within the description to represent cadastral or topographical boundaries or the intersection with such, they are intended as a guide only. As an outcome to the custodians of cadastral and topographic data continuously recalculating the geographic position of their data based on improved survey and data maintenance procedures, it is not possible to accurately define such a position other than by detailed ground survey.

Prepared by Geospatial Services, National Native Title Tribunal (09 December 2011)

Our Reference:

Infoxpert No. WRB:WRB

Your Reference:

Contact Name:

Bill Birch

Telephone:

(02) 6799 6850

Nicola Roche  
Umwelt (Australia) Pty Ltd  
75 York Street  
**TERALBA NSW 2284**

15 December 2015

Email: [nroche@umwelt.com.au](mailto:nroche@umwelt.com.au)  
[acrocker@artc.com.au](mailto:acrocker@artc.com.au)

Dear Nicola,

This letter is in response to correspondence received requesting information for any Aboriginal knowledge holders for the Narrabri to North Star route of the proposed Melbourne to Brisbane Inland Rail project.

Please find attached a spreadsheet that lists all New South Wales Local Aboriginal Land Council's - Contact Details. Further to the attachment, below is a list of local Aboriginal knowledge holders and their contact details for your information:

Narrabri Knowledge Holders		
Contacts	Phone Numbers	Email Addresses
Brenda & James Trindall	6792 2645	
Lyn Trindall	6792 4228	<a href="mailto:admin@narrabrilalc.com.au">admin@narrabrilalc.com.au</a>
Steven Booby	6792 7300	<a href="mailto:steven.booby@environment.nsw.gov.au">steven.booby@environment.nsw.gov.au</a>
Craig Trindall		<a href="mailto:trindallconsulting@gmail.com">trindallconsulting@gmail.com</a>
Jacqueline Jones		<a href="mailto:jacqueline.m.jones@det.nsw.edu.au">jacqueline.m.jones@det.nsw.edu.au</a>

Wee Waa Knowledge Holders		
Contacts	Phone Numbers	Email Addresses
Helen Wenner	0455 060 177	<a href="mailto:helen.wenner@det.nsw.edu.au">helen.wenner@det.nsw.edu.au</a>
Clifford Toomey	0429 578 172	

Pilliga Knowledge Holders		
Contacts	Phone Numbers	Email Addresses
David Nichols (Monty)	0402 169 344	
Noelene Nichols	0422 178 849	
Reenie Adams	0401 310 560	

Gwabegar Kamilaroi Knowledge Holders		
Contacts	Phone Numbers	Email Addresses
Debra Hanes	0481 151 702	

I hope that this information is satisfactory for your requirements and if you have any other queries then please do not hesitate to contact me on the number listed above.

Yours sincerely,



Bill Birch  
**ECONOMIC DEVELOPMENT MANAGER**



## Local Aboriginal Land Council – Contact Details

<u>LALC</u>	<u>Physical Address</u>	<u>Physical Town</u>	<u>PO Code</u>	<u>PO Box</u>	<u>PO Town</u>	<u>State</u>	<u>PO Code</u>	<u>Email</u>	<u>Phone</u>	<u>Fax</u>
<b>Albury &amp; District</b>	917 Chenery Street	GLENROY	2640	PO Box 22	LAVINGTON	NSW	2640	lalcalbury@bigpond.com	02 6025 7075	02 6025 4340
<b>Amaroo</b>	36N Derby Street	WALCHA	2354	PO Box 248	WALCHA	NSW	2354	amaroolalc@optusnet.com.au	02 6777 1100	02 6777 2490
<b>Anaiwan</b>	7 Opal Street	TINGHA	2360	PO Box 651	INVERELL	NSW	2360	anaiwanalc@iinqha.net	02 6723 3022	02 6723 3023
<b>Armidale</b>	172B Marsh Street	ARMIDALE	2350	PO Box 1057	ARMIDALE	NSW	2350		02 6772 7639	Not connected
<b>Ashford</b>	25 Albany Street	ASHFORD	2361	PO Box 66	ASHFORD	NSW	2361	landcouncil@ashfordalc.com	02 6725 4411	02 6725 4422
<b>Awabakal</b>	127 Maitland Road	ISLINGTON	2296	PO Box 101	ISLINGTON	NSW	2296	awabakal@bigpond.net.au	02 4965 4532	02 4965 4531
<b>Bahtabah</b>	44 Pacific Highway	BLACKSMITH	2281	PO Box 3018	BLACKSMITH	NSW	2281	bahtabah@nexon.com.au	02 4971 4800	02 4971 4671
<b>Balranald</b>	200 Church Street	BALRANALD	2715	PO Box 187	BALRANALD	NSW	2715	blalc@bigpond.com	03 5020 1932	03 5020 1940
<b>Baradine</b>	17 Wellington Street	BARADINE	2396	PO Box 61	BARADINE	NSW	2396	baradinelalc@bigpond.com	02 6843 1171	02 6843 1151
<b>Baryulgil Square</b>	Baryulgil Square Community	BARYULGIL VIA GRAFTON	2460	PO Box 1383	Baryulgil via GRAFTON	NSW	2460	barvulgilalc@activ8.net.au	02 66472131	02 66472131
<b>Batemans Bay</b>	Unit 3/34 D Orient Street	BATEMANS BAY	2536	PO Box 542	BATEMANS BAY	NSW	2536	bbalc@bigpond.com	02 4472 7390	02 4472 8622
<b>Bathurst</b>	149 Russell Street	BATHURST	2795	PO Box 1500	BATHURST	NSW	2795	bathalc2@bigpond.com	02 6332 6835	02 6332 3623
<b>Bega</b>	17-19 Bunyarra Drive	BEGA	2550	PO Box 11	BEGA	NSW	2550	becalalc@bigpond.com.au	02 6492 3950	02 6492 4087
<b>Birpai</b>	33 Aston Street	PORT MACQUARIE	2444	PO Box 876	PORT MACQUARIE	NSW	2444	birpailalc@midcoast.com.au	02 6584 9066	02 6583 8172
<b>Birrigan Gargle</b>	Youth Stadium, 2 Robinson Street	YAMBA	2464	PO Box 62	YAMBA	NSW	2464	bgalc@internode.on.net	02 6646 1664	02 6646 1672
<b>Bodalla</b>	68 Princess Highway	BODALLA	2545	PO Box 50	BODALLA	NSW	2545	bodallalalc@bigpond.com	02 4473 5404	02 4473 5215
<b>Bogal</b>	156 Bridge Street	CORAKI	2471	PO Box 72	CORAKI	NSW	2471	bogalalc@bigpond.com	02 6683 2510	02 6683 2698
<b>Bowraville</b>	66 High Street	BOWRAVILLE	2449	PO Box 90	BOWRAVILLE	NSW	2449	bowralc@bigpond.net.au	02 6564 7812	02 6564 7843
<b>Brewarrina</b>	107 Bathurst Street	BREWARRINA	2839	PO Box 105	BREWARRINA	NSW	2839	brewarrinalalc@bigpond.com	02 6839 2066	02 6939 2147
<b>Broken Hill</b>	84 Oxide Street	BROKEN HILL	2880	PO Box 392	BROKEN HILL	NSW	2880	wwalalc@iinet.net.au	08 8087 7310	08 8087 7708
<b>Brunngle - Tumut</b>	95 Caper Street	TUMUT	2720	PO Box 684	TUMUT	NSW	2720	blialc@bigpond.net.au	02 6947 4518	02 6947 4501
<b>Bunyah</b>	208 High Street	WAUCHOPE	2446	PO Box 287	WAUCHOPE	NSW	2446	bunvahalc@westnet.com.au	02 6585 3882	02 6585 2550
<b>Casino-Boolangle</b>	110 Walker Street	CASINO	2470	PO Box 1047	CASINO	NSW	2470	clalc@bigpond.com.au	02 6662 6286	02 6662 6290
<b>Cobar</b>	23 Railway Parade	COBAR	2835	PO Box 410	COBAR	NSW	2835	cobaralc@bigpond.com	02 6836 1144	02 6836 1292
<b>Cobowra</b>	193 Vulcan Street	MORUYA	2537	PO Box 204	MORUYA	NSW	2537	cobowralc@holkey.net.au	02 4474 4188	02 4474 4181
<b>Coffs Harbour</b>	Cnr Pacific Highway & Arthur Street	COFFS HARBOUR	2450	PO Box 6150	COFFS HARBOUR	NSW	2450	chris@coffsharbouralc.com.au	02 6652 8740	02 6652 5923
<b>Collarenebri</b>	Cnr Herbert & Wilson Sts	COLLARENEBRI	2833	PO Box 122	COLLARENEBRI	NSW	2833	collarenebrilalc@ymail.com	02 6756 2150	02 6756 2103
<b>Condobolin</b>	18 William Street	CONDOBOLIN	2877	PO Box 114	CONDOBOLIN	NSW	2877	condolalc@hotmail.com	02 6895 3639	02 6895 3729
<b>Coonabarabran</b>	588 Gardiner Street	COONABARABRAN	2357	PO Box 110	COONABARABRAN	NSW	2357	coonabarabran.lalc@bigpond.com	02 6842 3137	02 6842 2840
<b>Coonamble</b>	16 Castlereagh Street	COONAMBLE	2829	PO Box 385	COONAMBLE	NSW	2829	Lalc2829@bigpond.net.au	02 6822 2100	02 6822 2554
<b>Cowra</b>	Gumbuya Office Complex, Young Road	COWRA	2794	PO Box 769	COWRA	NSW	2794	cowralalc@bigpond.com	02 6342 4808	02 6342 4030

## Local Aboriginal Land Council – Contact Details

<u>LALC</u>	<u>Physical Address</u>	<u>Physical Town</u>	<u>PO Code</u>	<u>PO Box</u>	<u>PO Town</u>	<u>State</u>	<u>PO Code</u>	<u>Email</u>	<u>Phone</u>	<u>Fax</u>
<b>Dareton</b>	51 Sturt Place	DARETON	2717	PO Box 7	DARETON	NSW	2717	daretonalc@bigpond.com	(03) 5027 4721	03 5027 4705
<b>Darokinjung</b>	168 Pacific Highway	WATANOBBI	2259	PO Box 401	WYONG	NSW	2259	darkinjung@dlalc.org.au	02 4351 2930	02 4351 2946
<b>Deerubbin</b>	5/271 Beames Avenue	MT DRUITT VILLAGE	2770	PO Box 3184	MT DRUITT VILLAGE	NSW	2770	deerubbin@bigpond.com	02 9832 2457	02 9832 2496
<b>Deniliquin</b>	426 Wood Street	DENILIQUIN	2710	PO Box 846	DENILIQUIN	NSW	2710	lalcd@bigpond.com	03 5881 4891	03 5881 2852
<b>Dorrigo Plateau</b>	c/- Showgrounds, North Dorrigo Road	DORRIGO	2453	PO Box 55	DORRIGO	NSW	2453	dbalc1@aapt.net.au	02 6657 2606	02 6657 2607
<b>Dubbo</b>	Cnr Wingewarra & Darling Sts	DUBBO	2830	PO Box 1565	DUBBO	NSW	2830	dlalc@bigpond.com	02 6884 5276	02 6884 3441
<b>Eden</b>	Jigamy Farm	EDEN	2551	PO Box 199	EDEN	NSW	2551	edenlalc@bigpond.com	02 6495 7177	02 6495 7433
<b>Forster</b>	Cabarita Community Hall, Cabarita Avenue	FORSTER	2428	PO Box 384	FORSTER	NSW	2428	tim@forsterlalc.org.au	02 6555 5411	02 6555 5532
<b>Gandangara</b>	Level 1, 103 Moore Street	LIVERPOOL	2170	PO Box 1038	LIVERPOOL BC	NSW	1871	Mjohnson@qlalc.org.au	02 9602 5280	02 9602 2741
<b>Gilgandra</b>	72 Warren Road	GILGANDRA	2827	PO Box 163	GILGANDRA	NSW	2827	gil.lalc@bigpond.com	02 6847 1477	02 6847 1461
<b>Glen Innes</b>	181 Lang Street	GLEN INNES	2370	PO Box 157	GLEN INNES	NSW	2370	glilalc@northnet.com.au	02 6732 1150	02 6732 6413
<b>Goodooga</b>	Warraweena Street	GOODOOGA	2831	PO Box 78	GOODOOGA	NSW	2831	gnlalc@bigpond.com	02 6829 6273	02 6829 6223
<b>Grafton Ngerrie</b>	50 Wharf Street	SOUTH GRAFTON	2460	PO Box 314	SOUTH GRAFTON	NSW	2460	gnlalc@bigpond.com	02 6642 6020	02 6642 6994
<b>Griffith</b>	5 Wiradjuri Place	GRIFFITH	2680	PO Box 1424	GRIFFITH	NSW	2680	griffalalc@bigpond.com	02 6962 6711	02 6964 1477
<b>Gugin Gudduba</b>	53 Elrick Street	KYOGL	2474	PO Box 597	KYOGL	NSW	2474	ggalalc@bigpond.net.au	02 6632 1056	02 6632 2324
<b>Guyra</b>	187 Falconer Street	GUYRA	2365	PO Box 215	GUYRA	NSW	2365	ijho@exemail.com.au	02 6779 1803	02 6779 1649
<b>Hay</b>	412 Belmore Street	HAY	2711	PO Box 75	HAY	NSW	2711	havlalc@tpa.com.au	02 6993 2243	02 6993 2290
<b>Illawarra</b>	3 Ellen Street	WOLLONGONG	2500	N/A		NSW		strobins@exemail.com.au	02 4226 3338	02 4262 2981
<b>Ivanhoe</b>	N/A	N/A	2878	N/A					N/A	N/A
<b>Jali</b>	Unit 8/48 Tamar Street	BALLINA	2478	PO Box 1677	BALLINA	NSW	2478	jallilalc@bigpond.com	02 6686 7055	02 6686 8255
<b>Jana Ngalee</b>	Malabuglimah Village	BARYULGIL VIA GRAFTON	2460	PO Box 1398	GRAFTON	NSW	2460	janangalee.council@harboursat.net	02 6647 2209	02 6647 2119
<b>Jerrinja</b>	1 Weston Street	CULBURRA BEACH	2540	PO Box 167	CULBURRA BEACH	NSW	2540	ilalc@bigpond.com.au	02 4447 4207	02 4447 4230
<b>Jubullum</b>	Jubullum Street, Jubullum Village	VIA TABULAM	2469	PO Box 25	TABULAM	NSW	2469	jubullum@nor.com.au	02 6666 1337	02 6666 1386
<b>Karuah</b>	16 Muston Road	KARUAH	2324	PO Box 30	KARUAH	NSW	2324	karuahaboriginal@bigpond.com	02 4997 5733	02 4997 5750
<b>Kempsey</b>	Suite 8, no.1 John Street	KEMPSEY	2440	PO Box 540	KEMPSEY	NSW	2440	klalc1@bigpond.com.au	02 6562 8971	02 6563 1293
<b>Koompahtoo</b>	736 Hunter Street	NEWCASTLE WEST	2302	PO Box 1112	TORONTO	NSW	2283	koompahtoo@bigpond.com.au	02 4950 5577	02 4950 5365
<b>La Perouse</b>	Cnr Elaroo Ave & Yarra Rd	LA PEROUSE	2036	PO Box 365	MATRAVILLE	NSW	2036	lapaland@bigpond.com	02 9311 4282	02 9661 7423
<b>Leeton &amp; District</b>	Shop 1/5 Belah Street	LEETON	2705	PO Box 994	LEETON	NSW	2705	admin@ldlalc.com.au	02 6953 4344	02 6953 5248
<b>Lightning Ridge</b>	12 Pandora Street	LIGHTNING RIDGE	2834	PO Box 903	LIGHTNING RIDGE	NSW	2834	jacobblilalc@bigpond.com	02 6829 0105	02 6829 0274
<b>Menindee</b>	Yartla Street	MENINDEE	2879	PO Box 47	MENINDEE	NSW	2879	menindee.lalc@bigpond.com	08 8091 4541	08 8091 4500

## Local Aboriginal Land Council – Contact Details

<u>LALC</u>	<u>Physical Address</u>	<u>Physical Town</u>	<u>PO Code</u>	<u>PO Box</u>	<u>PO Town</u>	<u>State</u>	<u>PO Code</u>	<u>Email</u>	<u>Phone</u>	<u>Fax</u>
<b>Merrimans</b>	13 Umbarra Road	WALLAGA LAKE	2546	PO Box 13	WALLAGA LAKE	NSW	2546	merrima@bigpond.net.au	02 4473 7288	02 4473 7478
<b>Mindaribba</b>	1A Chelmsford Drive	METFORD	2323	PO Box 401	EAST MAITLAND	NSW	2323	r.griffiths12@bigpond.com	02 4934 8511	02 4934 8544
<b>Moama</b>	52 Chanter Street	MOAMA	2731	PO Box 354	MOAMA	NSW	2731	mlalc@mcmedia.com.au	03 5482 6071	03 5482 6085
<b>Mogo</b>	32 Sydney Street	MOGO	2536	N/A	MOGO	NSW	2536	moqolalc1@bigpond.com	02 4474 5229	02 4474 5219
<b>Moombahlene</b>	299 Rouse Street	TENTERFIELD	2372	PO Box 70	TENTERFIELD	NSW	2372	moombahlenealc1@bigpond.com	02 6736 3219	02 6736 1486
<b>Moree</b>	65 Herber Street	MOREE	2400	PO Box 924	MOREE	NSW	2400	moreelalc@bigpond.com.au	02 6751 1127	02 6751 1116
<b>Mudgee</b>	2/3 Lovejoy Street	MUDGEES	2850	PO Box 1098	MUDGEES	NSW	2850	mudgeelalc@bigpond.com	02 6372 3511	02 6372 3522
<b>Muli Muli</b>	Muli Muli Crescent	VIA WOODENBONG	2476	PO Box 68	WOODENBONG	NSW	2476	matthew.green@v7mail.com	02 6635 1487	02 6635 1498
<b>Mungindi</b>	47 Goondiwindi Street	MUNGINDI	2406	PO Box 26	MUNGINDI	NSW	2406	mungind@bigpond.net.au	02 6753 2622	02 6753 2709
<b>Murrumbidgee</b>	17 Fourth Avenue	ENGONNIA	2840	N/A	ENGONNIA	NSW	2840		02 6874 7487	02 6874 7597
<b>Murrumbidgee</b>	39 Foster Street	LAKE CARGELLIGO	2672	PO Box 157	LAKE CARGELLIGO	NSW	2672	murrumb@mbialc.com.au	02 6898 1119	02 6898 1158
<b>Mutawintji</b>	Hood Street	WILCANNIA	2836	PO Box 36	WILCANNIA	NSW	2836		08 8091 5953	08 8091 5046
<b>Nambucca Heads</b>	Unit 2/3 Sussex Street	NAMBUCCA HEADS	2448	PO Box 358	NAMBUCCA HEADS	NSW	2448	nambuccaheadsalc@bigpond.com	02 6568 9281	02 6568 9161
<b>Narrabri</b>	96 Barwan Street	NARRABRI	2390	PO Box 37	NARRABRI	NSW	2390	narrabrilalc@bigpond.com	02 6792 4228	02 6792 4258
<b>Narrandera</b>	172 East Street	NARRANDERA	2700	PO Box 544	NARRANDERA	NSW	2700	nlalc14@bigpond.com	02 6959 1823	02 6959 2811
<b>Narramine</b>	13 Burroway Street	NARRAMINE	2821	N/A	NARRAMINE	NSW		narraminealc@bigpond.com	02 6889 2340	02 6889 2205
<b>Ngambri</b>	16 Lowe Street	QUEANBEYAN	2620	PO Box 150	QUEANBEYAN	NSW	2620	nlalc1@bigpond.net.au	02 6297 4152	02 6299 3941
<b>Ngulingah</b>	53 Conway Street	LISMORE	2480	PO Box 981	LISMORE	NSW	2480	jean.boussard@nqulinqah.org.au	02 6621 5541	02 6621 5068
<b>Nowra</b>	59 Belinda Street	BOMADERRY	2541	PO Box 528	NOWRA	NSW	2541	nlalc@westnet.com.au	02 4423 3163	02 4423 0083
<b>Nulla Nulla</b>	4-6 Oxley Street	BOURKE	2840	PO Box 79	BOURKE	NSW	2840	nullanulla.lalc@bigpond.com	02 6872 2056	02 6872 1549
<b>Nungarook</b>	2 Station Street	QUIRINDI	2343	PO Box 28	QUIRINDI	NSW	2343	nungarook@bigpond.com	02 6746 2356	02 6746 2670
<b>Nyngan</b>	102 Pangee Street	NYNGAN	2825	PO Box 43	NYNGAN	NSW	2825	nynganalc@bigpond.com	02 6832 2639	02 6832 2878
<b>Onerwal</b>	95 Meehan Street	YASS	2582	PO Box 644	YASS	NSW	2582	onerwal1@bigpond.com.au	02 6226 5348	02 6226 5349
<b>Orange</b>	42 Dalton Street	ORANGE	2800	PO Box 10	ORANGE	NSW	2800	olalc1@olalc.ngo.org.au	02 6361 4742	02 6361 9119
<b>Peak Hill</b>	88 Caswell Street	PEAK HILL	2869	PO Box 63	PEAK HILL	NSW	2869	phlalc@yahoo.com.au	02 6869 1726	02 6869 1455
<b>Pejar</b>	80 Combermere Street	GOULBURN	2580	PO Box 289	GOULBURN	NSW	2580	pejar1@bigpond.com	02 4822 3552	02 4822 3551
<b>Pilliga</b>	Dengar Street	PILLIGA	2388	PO Box 42	PILLIGA	NSW	2388	pilliga.lalc@bigpond.com	02 6796 4310	02 6796 4307
<b>Purfleet/Taree</b>	1-3 Old Pacific Highway	TAREE	2430	PO Box 346	TAREE	NSW	2430	grennie@ptlalc.com.au	02 6552 4106	02 6551 0847
<b>Quambone</b>	Not Functioning	DUBBO	2830	PO Box 1196	DUBBO	NSW	2830		N/A	N/A
<b>Red Chief</b>	26 Chandos Street	GUNNEDAH	2380	PO Box 745	GUNNEDAH	NSW	2380	redchief@westnet.com.au	02 6742 3602	02 6742 3815
<b>Stuart Island</b>	N/A	N/A	N/A	N/A	N/A				N/A	N/A
<b>Tamworth</b>	123 Marius Street	TAMWORTH	2340	PO Box 57	TAMWORTH	NSW	2340	tamworth.lalc@bigpond.com	02 6766 9028	02 6766 9036



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Tharawal	50 Matthews Lane	PICTON	2571	PO Box 168	PICTON	NSW	2571	tharawa@bigpond.net.au	02 4681 0059	02 4683 1375
Toomelah	Lot 25, Tucka Tucka Road	Toomelah	2409	PO Box 261	BOGABILLA	NSW	2409	toomelahlalc@bigpond.com	07 4676 2348	07 4676 2011
Trangie	18 Dandaloo Street	TRANGIE	2823	PO Box 106	TRANGIE	NSW	2823	trangie.lalc@bigpond.com	02 6888 7661	02 6888 7470
Tweed/Byron	Unit 21/25 Ourimbah Road	TWEED HEADS	2486	PO Box 1410	KINGSCLIFF	NSW	2487	admin@tblalc.com	07 55361763	07 55369832
Ulladulla	66 Deering Street	ULLADULLA	2539	PO Box 520	ULLADULLA	NSW	2539	ulladulla@internode.on.net.au	02 4455 5883	02 4454 0440
Unkya	11A Princess Street	MACKSVILLE	2447	PO Box 319	MACKSVILLE	NSW	2447	Michele.Donovan@unkvalalc.com	02 6568 2786	02 6568 2610
Wagga Wagga	159 Docker Street	WAGGA WAGGA	2650	PO Box 403	WAGGA WAGGA	NSW	2650	wagga.wagga.lalc@bigpond.com	02 6921 4095	02 6921 7625
Wagonga	16 Canty Street	NAROOMA	2546	PO Box 78	NAROOMA	NSW	2546	wlalc@bigpond.net.au	02 4476 1144	02 4476 1483
Walgett	87 Fox Street	WALGETT	2832	PO Box 459	WALGETT	NSW	2832	wa85732@bigpond.net.au	02 6828 2426	02 6828 2426
Walhallow	1 Hill Street	VIA CAROONA	2343	PO Box 3	CAROONA	NSW	2343	wlalc08@bigpond.com	0428 463 578	02 6747 4822
Wamba Wamba	Moulamein Road	SWAN HILL	3585	PO Box 165	SWAN HILL	VIC	3585	wwlalc@bigpond.com	03 5032 3113	03 5032 2445
Wanaruah	17-19 Maitland Street	MUSWELLBROOK	2333	PO Box 127	MUSWELLBROOK	NSW	2333	wanaruah@bigpond.net.au	02 6543 1288	02 6542 5377
Wannaaring	Vicary Street	WANAARING	2840	N/A	WANAARING	NSW	2840		02 6874 7757	Not Connected
Warren Macquarie	164 Dubbo Street	WARREN	2824	PO Box 321	WARREN	NSW	2824	warrenlalc@gmail.com	02 6847 4599	02 6847 4427
Wee Waa	63-65 Rose Street	WEE WAA	2388	PO Box 106	WEE WAA	NSW	2388	ns03196@bigpond.net.au	02 6795 3735	02 6795 3731
Weilmoringle	15 Brown Street	WEILMORINGLE	2839	N/A	WEILMORINGLE	NSW	2839	weillalc@bigpond.com	02 6874 4730	02 6874 4731
Weilwan	Cnr Yoolundry & Armatree Sts	GULARGAMBONE	2828	PO Box 102	GULARGAMBONE	NSW	2828		02 6825 1701	02 6825 1701
Wellington	163 Simpson Street	WELLINGTON	2820	PO Box 436	WELLINGTON	NSW	2820	Wellandscouncil@bigpond.com	02 6845 1228	02 6845 2227
West Wyalong	76-78 Main Street	WEST WYALONG	2671	PO Box 332	WEST WYALONG	NSW	2671	ww.lalc@bigpond.com	02 6972 3493	02 6972 2070
Wilcannia	Moore Street	WILCANNIA	2836	PO Box 31	WILCANNIA	NSW	2836		08 8091 5828	08 8091 5935
Winbar	Not Functioning	DUBBO	2830	PO Box 1196	DUBBO	NSW	2830		N/A	N/A
Worimi	2163 Nelson Bay Road	WILLIAMTOWN	2318	PO Box 56	TANILBA BAY	NSW	2319	reception@worimi.org.au	02 4965 1500	02 4965 1799
Yaegl	Community Hall, Jubilee Street, Hillcrest	MACLEAN	2463	PO Box 216	MACLEAN	NSW	2463	yaegl@internode.on.net	02 6645 3676	02 6645 3754
Young	247 Boorowa Street	YOUNG	2594	N/A		NSW		ylalc@yahoo.com.au	02 6382 5669	02 6382 2522

Your reference      Proposed Inland Rail- Narrabri to  
                                 North Star NSW  
Our reference      DOC16/84296  
Contact              Paul Houston (02) 6883 5361

Umwelt Pty Ltd  
75 York St  
TERALBA NSW 2284  
Att: Nicola Roche

17<sup>th</sup> February 2016

RECEIVED

23 FEB 2016

Dear Nicola,

**WRITTEN NOTIFICATION AS REQUIRED UNDER OFFICE OF ENVIRONMENT AND  
HERITAGE (OEH) ABORIGINAL CULTURAL HERITAGE REQUIREMENT FOR  
PROPOSERS 2010 – For the proposed Inland Rail- Narrabri to North Star, NSW**

I refer to your letter dated 08/02/2016 to the Office of Environment and Heritage (OEH) regarding the above matter.

A list of known Aboriginal parties that OEH feels is likely to have an interest in this development is attached as Attachment 1 (overleaf). Please note this list is not necessarily an exhaustive list of all interested Aboriginal parties and receipt of this list does not remove the requirement of a proponent/consultant to advertise in local print media and contact other bodies seeking interested Aboriginal parties, in accordance with the requirements.

If you wish to discuss any of the above matters further please contact me, at your earliest convenience, on (02) 6883 5361.

Yours sincerely



**Paul Houston**  
**Aboriginal Heritage Planning Officer**  
**OEH**

The Department of Environment Climate Change and Water is now known as  
The Office of Environment and Heritage.

PO Box 2111, Dubbo NSW 2830  
48-52 Wingewarra St Dubbo NSW  
Tel: (02) 6883 5330 Fax: (02) 6884 9382  
[www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)

## ATTACHMENT 1

OEH'S LIST OF ABORIGINAL STAKEHOLDER GROUPS WITHIN THE NARRABRI, MOREE PLAINS SHIRE & GWYDIR SHIRE LGA'S- THAT MAY HAVE AN INTEREST IN THE PROJECT; PROVIDED AS PER THE "OEH ABORIGINAL CULTURAL HERITAGE REQUIREMENT FOR PROPONENTS 2010".

### Narrabri LGA

Organisation/Affiliation	Name/Title	Address
Alison Sampson		36 Hill Street, Caroona NSW 2343
AT Gomilaroi Cultural Consultancy	Aaron Talbott	6 Bando Street, Gunnedah NSW 2380
Bigundi Biame Gunnedarr Traditional People	CEO	16 South Street, Gunnedah NSW 2380
BJC Cultural Management	Ben Cameron	11 Stanley Street, Gunnedah NSW 2380
Brent Mathews		21 Bando Street, Gunnedah NSW 2380
Brian Draper		7 Sovereign St, Dubbo NSW 2830
Bunda Consultants	Tammy Knox 0402688031	23 Cunningham Street, Tamworth NSW 2380
Christine Archbold		40 Humphries St, Muswellbrook NSW 2333
Clifford Matthews		16/A Mahogany Ave Muswellbrook NSW 2333
Darrell Mathews		14 Edinglassie Dr Muswellbrook NSW 2333
Donna Moodie		PO Box 356 Darling Heights QLD 4350
Elli Lewis	Patrica Jean Hands	20 Acacia Circuit Singleton NSW
Esther Tighe		1/86 Edward Street, Gunnedah NSW 2380
George Sampson (C/- Cucatua Culture Consultants)		49 Ibis Pde Woodberry NSW 2322
Gomerioi Murri Ganuurr Yuuray Wadi Palinka	Greg Griffith	4 Wattle Street, Gunnedah NSW 2380
Gomerioi Narrabri Aboriginal corporation	Chairperson ( Craig Trindall 0430295911)	29 Doyle Street, Narrabri NSW 2390
Gunida Gunyah	CEO	PO Box 439, Gunnedah NSW 2380
Hazel Collins		3 Carroll Street,

The Department of Environment Climate Change and Water is now known as  
The Office of Environment and Heritage.