Appendix 9: Aboriginal Cultural Heritage Assessment

Chaffey Dam Augmentation and Safety Upgrade

Aboriginal Cultural Heritage Assessment

Document 301015-02980-REP-0005

October 2012

Navin Officer

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Client: *WorleyParsons*

Proponent: *State Water Corporation*

Report Register

The following register documents the development and issue of this document.

Issue No.	Notes/Description	Issue Date
v1	Draft for proponent comment	14 August 2012
v2	Draft for Aboriginal stakeholder comment	18 September 2012
v3	Final following Aboriginal stakeholder comment	23 October 2012

EXECUTIVE SUMMARY

WorleyParsons Services Ltd Pty has been engaged by State Water Corporation to undertake the Environmental Impact Assessment (EIA) for the Chaffey Dam Augmentation and Safety Upgrade Project (the Project). Chaffey Dam is located on the Peel River, approximately 30 km south-east of Tamworth, NSW. The Project will see the permanent storage capacity of Chaffey Dam increased from 62 gigalitres (GL) to 100 GL, by raising the dam wall 8.4 metres and the full supply level by 6.5 metres and compliance with modern day dam safety standards.

The Project has been classified as State Significant Infrastructure (SSI) under the *Environmental Planning and Assessment Act 1979*.

It was found that:

- Seventeen (17) previously recorded Aboriginal sites occur within the Chaffey Dam study area, thirteen (13) of which are listed on the AHIMS register.
- Four previously identified Potential Archaeological Deposits (PADs) occur within the Chaffey Dam study area.
- During this investigation Sixteen (16) Aboriginal sites were identified comprising:
    - Eight isolated finds (two with associated PAD);
    - Seven artefact scatters (six with associated PAD);
    - One potential quarry.
- During this investigation Four (4) areas of PAD were identified and one previously identified PAD (CDPAD3) was redefined.

It was recommended that:

1. Surface salvage or relocation of all artefacts to be directly impacted should be undertaken. Surface salvage would entail the recording of each site by an Archaeologist and the collection of all visible artefacts.
2. Sites which fall on the border of the proposed inundation level (CDIF7 and CDIF9) should be fenced off during any construction works associated with the Tamworth-Nundle and Western Foreshore Roads and associated bridge realignments, to avoid indirect impacts during construction.
3. A Stage one program of subsurface archaeological testing should be conducted within areas of proposed impacts to sites with associated PAD and areas of identified PAD.

    A stage one program would include targeted testing of representative landforms that will be impacted by the project. The results of this investigation will inform the need for further testing and/or salvage excavations.

    In accordance with Section 115ZG(1)(d) of the *Environmental Planning and Assessment Act 1979*, an Aboriginal heritage impact permit under Section 90 of the *National Parks and Wildlife Act 1974* is not required for approved State Significant Infrastructure.
4. A ‘Back to Country’ protocol should be developed that details the location and methodology to be used for the placement of all Aboriginal objects salvaged and excavated for the project in an area in close proximity to the study area. The area should be negotiated with the Aboriginal community and can be an area identified by the proponent. The location should be recorded by an Archaeologist and places on the NSW AHIMS as a new Aboriginal site.

5. The protocols for the unanticipated discovery of archaeological material and suspected human remains (presented in Appendix 4) be adopted and complied with during construction activities involving ground surface disturbance and excavation.

6. A copy of this report should be forwarded to all registered Aboriginal stakeholders.

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1. INTRODUCTION

1.1 Project Description

WorleyParsons Services Ltd Pty (WorleyParsons) has been engaged by State Water Corporation to undertake the Environmental Impact Assessment (EIA) for the Chaffey Dam Augmentation and Safety Upgrade Project (the Project).

Chaffey Dam is located on the Peel River, approximately 30 km south-east of Tamworth, NSW. The Project will see the permanent storage capacity of Chaffey Dam increased from 62 gigalitres (GL) to 100 GL, by raising the dam wall 8.4 metres and the full supply level by 6.5 metres and compliance with modern day dam safety standards.

The Project has been classified as State Significant Infrastructure (SSI) under the *Environmental Planning and Assessment Act 1979*.

The EIA will investigate issues relating to soil and water, biodiversity, heritage, traffic, transport, noise, vibration, air quality, visual impact, land use, property and socioeconomic matters, spoil, waste management, hazard and risk. The preparation of the EIA will involve consultation with stakeholders including local landholders, recreational users and government agencies.

This report documents the results of an Aboriginal cultural heritage assessment of the Chaffey Dam Augmentation and Safety Upgrade (the Project).

The report was commissioned by WorleyParsons.

1.2 Project Framework

The proposed Chaffey Dam Augmentation and Safety Upgrade has been classified:

- State Significant Infrastructure (SSI) under the *Environmental Planning and Assessment Act 1979*.

Director General's Environmental Assessment Requirement's (DGRs) for this project include impacts to Aboriginal heritage (including cultural and archaeological significance), in particular impacts to Aboriginal heritage sites identified within or near the project. Where impacts are identified, the assessment shall:

- Outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the measures), demonstrate effective consultation with Aboriginal communities in determining and assessing impacts and developing and selecting options and mitigation measures (including the final proposed measures);

- Demonstration that an appropriate archaeological assessment methodology, including research design, (where relevant) has been undertaken, including results; and

- Take into account the Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (Department of Environment and Conservation [now OEH] 2005) and be undertaken by a suitably qualified heritage consultant.

1.3 Proposed Works

The Project comprises the augmentation and safety upgrade of the existing Chaffey Dam (Figure 1.1). The Project will result in an increase in the Full Supply Level of 6.5 m and an increase in the permanent storage capacity from 62 GL to 100 GL.

Proposed works include:

- Construction works at the dam wall to raise the height by 8.4 m;
- Raising of the Morning Glory Spillway by 6.5 m;
- Modification of the existing auxiliary spillway;
- Realignment of the intersection of Tamworth-Nundle Road and River Road;
- Realignment of sections of Tamworth-Nundle Road and River Road;
- Replacement of the Bowling Alley Point Bridge;
- Realignment of Western Foreshore Road from Hyde's Creek to Silver Gully;
- Modification to Hyde's Creek Bridge; and
- Modification to the existing culvert crossing at Silver Gully.

1.4 This Report

1.4.1 Outline

This report:

- Describes the proposed development (Section 1);
- Describes the methodology employed in the study (Section 2);
- Describes the environmental setting of the study area (Section 3);
- Outlines the Aboriginal consultation undertaken for this project (Section 4);
- Provides information relevant to the Aboriginal cultural context of the study area (Section 5);
- Describes the results of the data review and field survey conducted in the context of the assessment (Section 6);
- Provides a significance assessment for the sites within this investigation (Section 7);
- Provides the statutory and policy context for this project (Section 8); and
- Provides management recommendations based on the results of the investigation (Section 9).

1.4.2 Copyright

- Descriptive text and data relating to Aboriginal objects which must, by law, be provided to OEH for its purposes and use;

- Information which, under Australian law, can be identified as belonging to Indigenous intellectual property; and

- Content which was sourced from and remains part of the public domain.

1.4.3 Restricted Information

Information in this report relating to the exact location of Aboriginal sites should not be published or promoted in the public domain. [Accordingly, all GPS coordinates have been removed from this report. These coordinates can be provided to relevant stakeholders on request.]

No information provided by Aboriginal stakeholders in this report has been specifically identified as requiring access restrictions due to its cultural sensitivity.

1.4.4 Confidentiality

No information in this report has been classified as confidential.

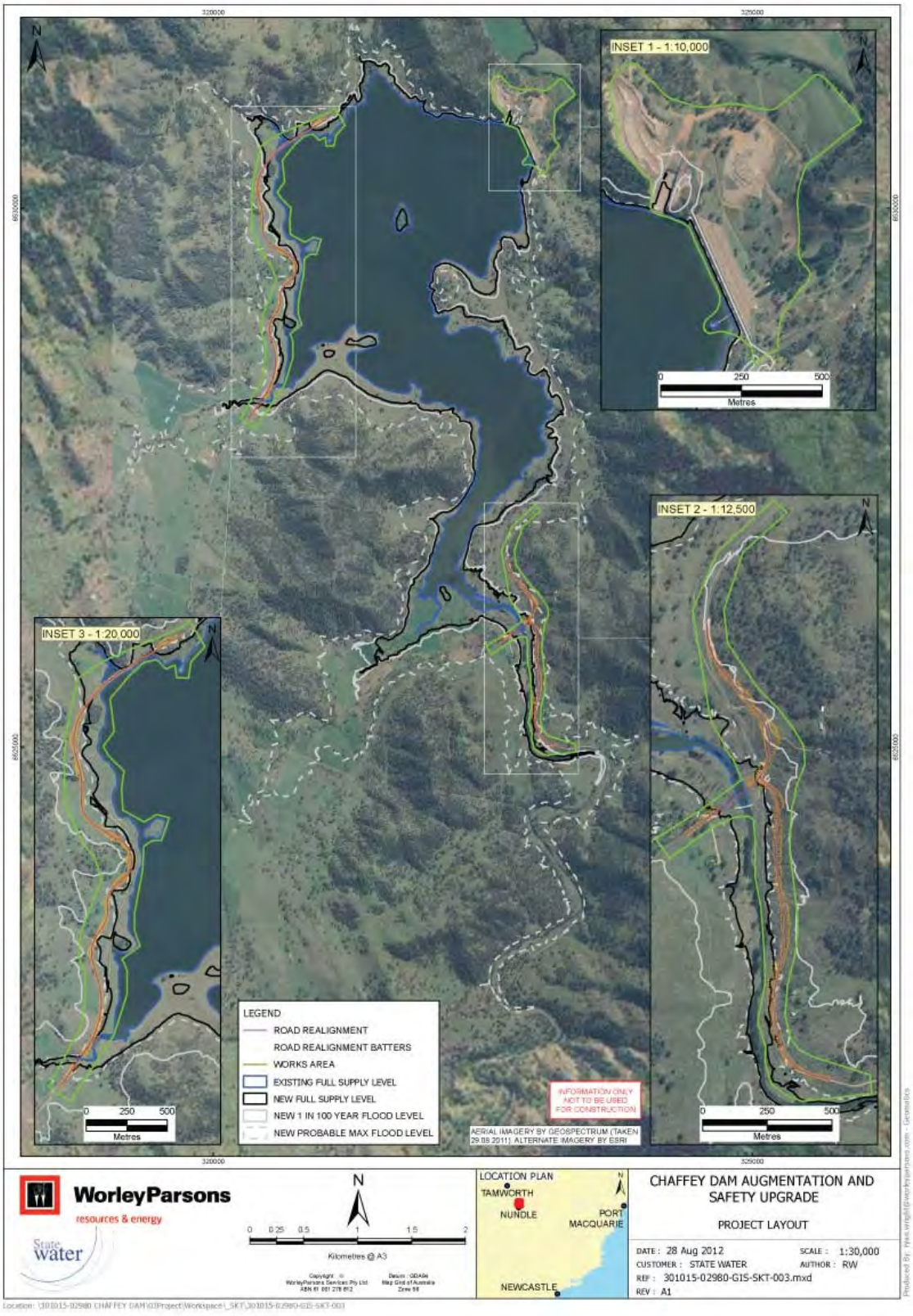

Figure 1.1 Chaffey Dam project layout with new full supply level (black line), road realignments (orange line) and works areas (green line) (Supplied by WorleyParsons)

2. STUDY METHODOLOGY

2.1 Contributors

Field survey was conducted by archaeologists Sam Harper (Navin Officer Heritage Consultants Pty Ltd) – Bachelor of Arts (First Class Honours) from the Australian National University – and Tom Knight (Navin Officer Heritage Consultants Pty Ltd) – Bachelor of Arts, Masters in Archaeology and PhD candidate at the Australian National University, and Aboriginal Sites Officer Christopher (Donny) Fermor (Tamworth Local Aboriginal Land Council).

This report was prepared by Sam Harper (BA Hons) and Christine Gant-Thompson (MA Arch) of Navin Officer Heritage Consultants Pty Ltd. This report was edited by Nicola Hayes of Navin Officer Heritage Consultants Pty Ltd.

2.2 Literature and Database Review

A range of archaeological data was reviewed for the Chaffey Dam Augmentation and Safety Upgrade study area and its surrounds. This literature and data review was used to determine if known Aboriginal sites were located within the area under investigation, to facilitate site prediction on the basis of known regional and local site patterns and to place the area within an archaeological and heritage management context. The review of documentary sources included heritage registers and schedules, local histories, and archaeological reports.

Aboriginal literature sources included the Aboriginal Heritage Information Management System (AHIMS) maintained by the NSW Office of Environment and Heritage (OEH) and associated files and catalogue of archaeological reports; and theses held in the library of the School of Archaeology and Anthropology, the Australian National University.

Searches were undertaken of the following statutory heritage registers and schedules:

- Statutory Listings:
    - Aboriginal Heritage Information Management System (AHIMS) (NSW OEH);
    - World Heritage List;
    - The National Heritage List (Australian Heritage Council);
    - The Commonwealth Heritage List (Australian Heritage Council);
    - The State Heritage Register (NSW Heritage Branch, Office of Environment and Heritage); and
    - Heritage Schedule(s) from the Tamworth Regional Local Environmental Plan.

2.3 Field Methodology

An archaeological survey of the study area was undertaken by archaeologists Sam Harper and Tom Knight, and Aboriginal Sites Officer Christopher (Donny) Fermor between the 30th July and 1st August, 2012.

Survey was conducted by walking in systematic transects across all landforms within the full supply level of the proposed dam augmentation, particularly focussing on areas that have not been previously assessed (Figure 2.1, NOHC 2008).

The field team spread out with 5-10 m spacing between individuals to ensure maximum coverage. The survey included inspections of:

- all ground exposures for the presence of stone artefacts or other evidence of Aboriginal occupation; and
- all trees of sufficient age to have the potential for cultural scars.

Information was recorded using a handheld Trimble Juno GPS, digital camera and notebook.

2.4 Sampling Strategy

A full coverage survey was conducted for the Chaffey Dam Augmentation and Safety Upgrade site, dependent on visibility.

2.5 Recording Parameters

2.5.1 Aboriginal Sites and PADs

The archaeological survey aimed at identifying material evidence of Aboriginal occupation as revealed by surface artefacts and areas of archaeological potential unassociated with surface artefacts. Potential recordings fall into two broad categories: sites and potential archaeological deposits.

Sites

A site is defined as any material evidence of past Aboriginal activity that remains within a context or place which can be reliably related to that activity.

Most Aboriginal sites are identified by the presence of three main categories of artefacts: stone or shell artefacts situated on or in a sedimentary matrix, marks located on or in rock surfaces, and scars on trees.

Frequently encountered site types within southeastern Australia include stone artefact occurrences - including isolated finds and open artefact scatters, coastal and freshwater middens, rock shelter sites - including occupation deposit and/or rock art, grinding groove sites and scarred trees.

Stone Artefact Occurrences

Stone artefact occurrences are the most commonly recorded site type in Australia. They may consist of single artefacts - described as isolated finds; or as a distribution of more than one artefact – often described as an artefact scatter or 'open camp site' when recording surface artefacts, or as a subsurface artefact distribution when dealing with an archaeological deposit.

Where artefact incidence is very low, either in terms of a real distribution (artefacts per square metre) or density (artefacts per cubic metre), then the differentiation of the recording from background artefacts counts or *background scatter* may be an issue.

Isolated finds

An isolated find is a single stone artefact, not located within a rock shelter, and which occurs without any associated evidence of Aboriginal occupation within a radius of 60 metres. Isolated finds may be indicative of:

- Random loss or deliberate discard of a single artefact;
- The remnant of a now dispersed and disturbed artefact scatter; and
- An otherwise obscured or sub-surface artefact scatter.

Except in the case of the latter, isolated finds may be considered to be constituent components of the *background scatter* present within any particular landform.

The distance used to define an isolated artefact varies according to the survey objectives, the incidence of ground surface exposure, the extent of ground surface disturbance, and estimates of *background scatter* or *background discard* densities. In the absence of baseline information relating to background scatter densities, the defining distance for an isolated find must be based on methodological and visibility considerations. Given the varied incidence of ground surface exposure and deposit disturbance within the study area, and the lack of background baseline data, the specification of 60 metres is considered to be an effective parameter for surface survey methodologies. This distance provides a balance between detecting fine scale patterns of Aboriginal occupation and avoiding environmental biases caused by ground disturbance or high ground surface exposure rates. The 60 metre parameter has provided an effective separation of low density artefact occurrences in similar southeast Australian topographies outside of semi-arid landscapes.

Artefact scatters

Artefacts situated within an open context are classed as an open artefact scatter (or 'open camp site') when two or more occur no more than 60 metres away from any other constituent artefact. The 60 metre specification relates back to the definition of an isolated find (*Refer above*). The use of the term *scatter* is intended only to be descriptive of the current archaeological evidence and does not infer the original human behaviour which formed the site. The term *open camp site* has been used extensively in the past to describe open artefact scatters. This was based on ethnographic modelling suggesting that most artefact occurrences resulted from activities at camp sites. However, in order to separate the description from the interpretation of field evidence, the terms *artefact scatter*, *artefact distribution* or *artefact occurrence* are now more extensively used. The latter two options can also be used to categorise artefacts occurring in sub-surface contexts.

Quarry or Procurement Sites

A quarry site, also known as a procurement site, consists of exposures of a geological raw material where evidence for human collection, extraction and/or preliminary processing has survived. Exposures may be natural in origin: such as a rock outcrop, cliff face, erosion scarp, stream or shingle bed, and/or artificial in origin, such as excavated pits or trenches. Typically, procurement sites display evidence of extraction, either through excavation, or fracturing using impact or thermal expansion (fire), and involve the recovery of siliceous or fine grained igneous and meta-sedimentary rock types for the manufacture of artefacts, fine grained tabular sandstone for grind stones, or the collection of minerals for use as art pigments. Typical rock types exploited at procurement sites include quartz, quartzite, silcrete, chert, rhyolite, chalcedony, tuff, greywacke, sandstone, and fine grained igneous rocks such as latite, greenstone and basalt. Minerals used for pigments include red (haematite) and yellow (goethite) iron oxides, and white pipeclay (such as kaoline). Some evidence of processing or material refinement may also be present at procurement sites, such as flaking to remove stone cortex, or pre-shaping to form cores or preforms such as for hatchets. In this way procurement sites may be associated with, or considered to include, artefact scatters, flaking floors and 'workshop' areas.

The location of quarry and procurement sites is dependent on the presence and exposure of suitable rock types and ochre sources. Within the study area, rock procurement sites may occur at surface outcrops on slopes, cliffs and escarpments and crests, or at point bar and shingle deposits along river and creek courses. Minerals suitable for use as pigments may occur as leachates in rock crevices and shelters, nodules present in soil profiles or as surface lag gravels, or as *in situ* sediment within exposed soil profiles in gullies and washouts.

Potential Archaeological Deposits

A potential archaeological deposit, or PAD, is defined as any location where the potential for subsurface archaeological material is considered to be moderate or high, relative to the surrounding study area landscape. The potential for subsurface material to be present is assessed using criteria developed from the results of previous surveys and excavations relevant to the region. Where necessary, PADs can be given an indicative rating of their 'archaeological potential' based on a combined assessment of their potential to contain artefacts, and the potential archaeological value of the deposit. Table 2.1 illustrates the matrix on which this assessment is based. Locations with low potential for artefacts fall below the threshold of classification. In such cases the potential incidence of artefactual material is considered to be the same as, or close to that for background scatter. Where there is moderate potential for artefacts, the predicted archaeological potential parallels the potential significance of the deposit. For deposits with high potential for artefacts, the assessed archaeological potential is weighted positively.

The boundaries of PADs are generally defined by the extent of particular micro-landforms known to have high correlations with archaeological material. A PAD may or may not be associated with surface artefacts. In the absence of artefacts, a location with potential will be recorded as a PAD. Where one or more surface artefacts occur on a sedimentary deposit, a PAD may also be identified where there is insufficient evidence to assess the nature and content of the underlying deposit. This situation is due mostly to poor ground surface visibility.

Table 2.1 Matrix showing the basis for assessing the archaeological potential (shown in bolded black text) of a potential archaeological deposit.

		Potential to contain Aboriginal objects		
		Low	*Moderate*	*High*
Potential archaeological significance	*Low*	---	**low**	**moderate**
	Moderate	---	**moderate**	**high**
	High	---	**high**	**high**

In the case of rock shelters contexts, the following criteria are used as guidelines for identifying the presence of potential archaeological deposits:

- Shelter should contain a sediment floor at least around one square metre in area;
- Deposit must be at least 15 cm deep (determined by inserting tent pegs);
- Deposit should be relatively compact and show evidence for a significant period of accumulation (deposit should not be spongy and contain only clean sand derived from recent stone weathering);
- The shelter space should be at least one metre high and one metre deep (but exceptions may occur, such as where the deposit is deep); and
- The shelter should be relatively dry.

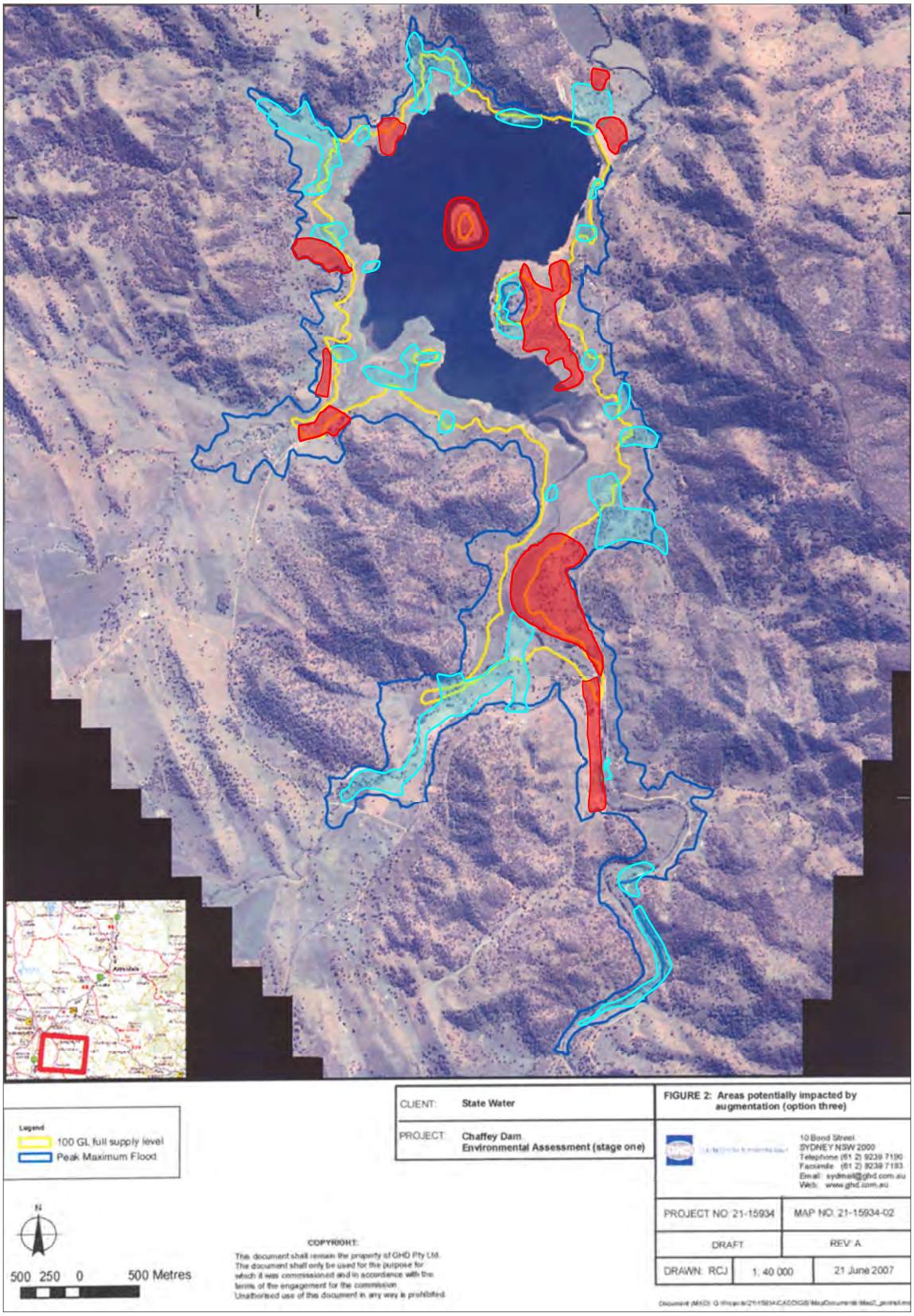

Figure 2.1 Areas surveyed during 1990 (blue) and during 2008 (red) overlaying the proposed full supply level (yellow) (NOHC 2008: 45)

3. LANDSCAPE CONTEXT

3.1 Environment and Landscape

Chaffey Dam is located on the Peel River, approximately sixteen kilometres north of Nundle and thirty kilometres south of Tamworth. The dam is located within a valley bordered on the north and east by the Moonbi Range, in the southeast by the Great Dividing Range and in the south and southwest by the Peel Range. The valley extends westwards to Carroll Gap where the Peel River discharges into the Namoi River a few kilometres downstream of Keepit Dam (IESC 1974).

Chaffey Dam is characterised on the southern and eastern edges by steep slopes rising to 1,300 m and covered mainly with native grasses and trees, although some areas have been cleared for grazing and the harvesting of timber. The remainder of the catchment is undulating and has been cleared extensively for grazing on both improved and unimproved pasture (Young 1993; Sherman n.d.)

The upper catchment is comprised of Tertiary basalt whereas the lower catchment consists mainly of Carbonifierous to Devonian age sedimentary rocks (Caitcheon et al. 1994; Sherman n.d.). A Serpentinite outcrop is located on the eastern foreshores of the current Chaffey Dam, running from Nundle Road to Blackfellows knob.

At the time of the archaeological survey in July-August 2012, Chaffey Dam was 100% full and the level of the dam was 518.65 m, with a volume of 62098 ML. Consequently less of the foreshore was exposed than during the July 2007 survey (NOHC 2008).

The mean annual rainfall is 750 mm, the rainfall distribution varies throughout the year, but is most prevalent during summer. December and January are the wettest months, and March and April are the driest. In general temperatures are warm to hot during summer and cool during winter (GHD 2010: 10).

3.2 Landuse

The Peel Valley generally is an agricultural area with focus on beef cattle, sheep, poultry, fodder crops, grain crops and local dairying. Landuse practices over the last 150 years have the potential to impact on the archaeological sites located within the region. With European settlement and selection of land, one of the earliest tasks was to clear the ground for stock and pasture. This often involved ringbarking trees and their later removal. This practice would have resulted in the destruction of scarred trees that may have been present.

Land Grants with subsequent subdivision, fencing, clearing, ploughing and other activities associated with agricultural land uses of land also disturbs Aboriginal campsites. While the stone artefacts used by Aboriginal people are themselves resilient, the cumulative impact of ploughing disperses the artefacts and reduces the integrity of the sites.

It is considered that Gold mining in the mid nineteenth century on the Peel River has had a major impact in the ground surface. Gold was discovered at Bowling Alley Point in February 1852, and later that year, there were 300 gold diggers camped at what is now Nundle. The gold was predominantly alluvial, and during the gold rush virtually the whole of the floodplain and low terraces along the Peel from Andersons Flat upstream for about nine kilometres, was dug over and sluiced to extract gold.

The construction of Chaffey Dam would also have had major impacts on the archaeological record of the region. The construction of the dam wall, with the associated removal of thousands of cubic metres of rock and gravel from the river banks, would have impacted many sites. Sites would also have been drowned in the lake. While current investigations have shown that sites can be found on previously inundated ground, the impact on sites within the main lake bed is likely to have been

significant. The dam was constructed in 1979, and is a rock fill with clay core construction, with a Morning Glory Tower spillway capacity of 78,000 ML/day.

A majority of the Chaffey Dam foreshore area (as of 2010) comprises open pasture and open timber country, extensive clearing, dense vegetation along the western side of the foreshore (GHD 2010).

The inundation of the Chaffey Dam would have submerged and covered with silt any artefact scatters present, and inundated and subsequent felling of any scarred trees.

The cumulative effect of European land use practices is therefore to reduce the number of sites and to also reduce the integrity of those sites remaining. Few areas within the region could be considered as undisturbed by European landuse.

The implications for the present study are that the majority of archaeological sites in the region have been disturbed and that some have been effectively destroyed. Any sites located during the study are therefore a sample of a smaller population than in pre-European times. Nevertheless, the general expanse of the region would ensure that a broad range of sites still exist.

4. ABORIGINAL CULTURAL CONTEXT

4.1 Aboriginal Consultation

As per the Director-General's Requirements for the Environmental Assessment for the Chaffey Dam Augmentation and Safety Upgrade Project, this cultural heritage assessment complied with the Draft *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* as set out by the NSW Department of Environment and Conservation (now the NSW Office of Environment and Heritage) in 2005.

The proponent also seeks to comply with the current requirements of the NSW Office of Environment and Heritage (formerly the NSW Department of Environment, Climate Change and Water). The project, therefore, also complies with the NSW OEH *Aboriginal cultural heritage consultation requirements for proponents 2010* (NSW OEH 2010). The 2010 guidelines provide a more stringent process which meets and exceeds the requirements under the 2005 draft guidelines.

This document sets out the requirements for 'consulting with those Aboriginal people who can provide information about the significance of Aboriginal cultural heritage as part of the heritage assessment process that informs any AHIP [Aboriginal Heritage Impact Permit] application' (NSW OEH 2010:1).

The requirements apply to all activities throughout NSW that have the potential to harm Aboriginal *objects* or places and that also require an AHIP. The requirements specify four stages of consultation:

Stage 1 - notification of project proposal and registration of interest

Stage 2 - presentation of information about the proposed project

Stage 3 – gathering information about cultural significance

Stage 4 – review of draft cultural heritage assessment report

An advertisement was placed in the:

- *Northern Daily Leader* on Saturday the 16th of June 2012 (Appendix 1).

Requests for Potential Aboriginal stakeholders were sent to the:

- Nungaroo Local Aboriginal Land Council;
- Tamworth Local Aboriginal Land Council;
- Tamworth Regional Council;
- Namoi Catchment Management Authority;
- NSW OEH;
- Native Title Services Corporation Ltd; and
- Office of the Registrar Aboriginal Land Rights Act 1983.

Following advice received from these requests, letters (Appendix 2) were sent to:

- Mr Tom Taylor;
- Mr Greg Clarke and Family;
- Mr Joe Brand;
- Mr Brent Mathews;
- Mr Brian Draper;
- Ms Christine Archbold;

- Mr Clifford Matthews;
- Coonabarabran Local Aboriginal Land Council (LALC);
- Mr Derrick Vale, DFTV Enterprises;
- Mr Darrell Mathews;
- Mr Jeff Mathews;
- Mr John Matthews;
- Mr Justin Matthews;
- Mr Kevin Sampson;
- Mr Len Waters;
- Mr Lloyd Matthews;
- Mooki Plains Management;
- Mr Wayne Mathews, Mooki River Consultants;
- Mr Brian Horton, Muswellbrook Cultural Consultants;
- Ms Rhonda Kitckener,, Nyakka Aboriginal Corporation;
- Mr Paul Moodie;
- Mr Rodney Mathews;
- Mr Scott Smith;
- Ms Tania Mathews;
- Mr Ron Smith; and
- Desley Talbot Consultants.

The closing date for expressions of interest was 12th July 2012.

Registrations of interest were received from (known as Representative Aboriginal Parties (RAP):

- Bunda Consultants;
- Bawurra Consultants (BC);
- DFTV Enterprises;
- Tommy Taylor;
- Waruu Consultation Group;
- Deslee Talbot Consultants (DTC);
- Len Waters;
- Heilamon Cultural Consultants (HCC);
- Breeza Plains (BP); and
- Wunda Cultural Consultants (WCC).

A draft copy of this report, accompanied by an invitation to provide comments, was provided on the 18th September 2012 via post to each of the registered stakeholders. As required by the *Aboriginal cultural heritage consultation requirements for proponents 2010* (NSW OEH 2010), a period of 28 days, which ended on 15th October 2012, was provided for registered stakeholders to comment on the report. No comments were received.

4.2 Field Participation

Invitations were made to the Tamworth LALC and Nungaroo LALC for a Sites Officer to participate in the archaeological survey for this project. As a result, Christopher 'Donny' Fermor from Tamworth LALC participated in the archaeological survey, carried out between the 30th July and 1st August, 2012.

All registered Aboriginal stakeholders were invited to attend a site visit held on Friday 28th September 2012. The following attended the site visit:

- Colin Johnson;
- Clifford Johnson (HCC);
- Len Waters;
- Deslee Matthews (DTC);
- Martin Salvador (WCC);
- Terry Matthews (BP); and
- Kevin Sampson (BC).

All representatives requested that all impacted Aboriginal objects should be salvaged and collected prior to impact.

4.3 Cultural Knowledge and Values

Registered Aboriginal stakeholders have been given the opportunity to comment on the cultural values of the project during the site visit and in correspondence.

No written information on the cultural values of the project area has been received and no areas of particular cultural interest have been identified. However, during the site visit the registered Aboriginal stakeholders communicated that all Aboriginal objects within the project area have a cultural value to them as evidence of their past way of life and connection to the land. The registered Aboriginal stakeholders noted that this cultural value is of such significance as to require salvaging and relocating of the items.

5. ABORIGINAL ARCHAEOLOGICAL CONTEXT

5.1 Previous Archaeological Research

5.1.1 Regional Archaeological Context

The Chaffey Dam study area is located within the tribal boundaries of the Kamilaroi tribe (Tindale 1974; Howitt 1996) and in the landscape transition between the Western Slopes and Western Plains regions of NSW. These broad areas have been the subject of considerable archaeological investigation both within the context of academic research and environmental impact assessments. The resulting corpus of information provides both an inventory of known sites for the region, and more importantly, a set of predictive statements which allow for the assessment of the unrecorded potential archaeological resource.

In 1981 Pearson completed an investigation of Aboriginal and early European settlement patterns within the Upper Macquarie River region of NSW. The study area included transitional landforms similar to the Chaffey Dam region. The majority of the field coverage was directed by information from informants and was thus skewed toward large or obtrusive sites. Pearson excavated three rock shelter sites (Botobolar 5, and Granites 1 and 2) which provided a regional record of Aboriginal occupation dating back to around 7000 years BP (Before Present).

Lance (1985) conducted a survey of a proposed 145 km long transmission line from Wellington to Forbes. Lance's survey route traversed similar tableland and watershed topographies to some of the Chaffey Dam study area. He located sixteen artefact scatters, two scarred trees and fourteen isolated finds. Most sites contained only small numbers of artefacts with 58% containing ten or less, and 12% containing over one hundred.

Lance found that an examination of site patterning according to broad geomorphological land systems revealed only superficial trends. By contrast, zones of archaeological sensitivity were found to be more directly related to landform constraints than land system type and that a micro-topographic approach to sampling provided the most effective survey strategy.

A cultural heritage assessment for interim safety works on the Keepit subsidiary dam wall was conducted in 2002 (Environmental Resources Management 2002). (Keepit Dam is located on the Namoi River about sixty kilometres northwest of Tamworth). The study included field survey of areas of potential impact. Field survey did not reveal Aboriginal sites and it was noted that 'Poor ground surface visibility encountered in the study area, as well as past land uses have contributed to the absence of surface indigenous sites' (ibid:22). It was further noted that while the majority of the Keepit Dam site had been subject to land uses that would have disturbed the integrity of cultural materials, the most likely locations of archaeological sensitivity within the subsidiary dam wall study area was around Keepit Dam, and the Peel and Namoi Rivers and their tributaries (ibid:21).

Targeted field inspections of work areas associated with various options for the upgrade of Keepit Dam were conducted in 2005. A number of sites were identified at locations upstream and downstream of the dam (Navin Officer Heritage Consultants 2005). At the completion of cultural heritage assessments of the upgrade in 2007, twenty eight previously unidentified Aboriginal sites had been recorded within the Keepit Dam study area. Sites comprised five isolated finds, thirteen artefact scatters, nine scarred trees and one stone procurement source (Navin Officer Heritage Consultants 2007).

5.1.2 Chaffey Dam

In 1990 Resource Planning Ltd conducted an Aboriginal archaeological survey for the proposed raising of the Chaffey Dam wall. The survey covered areas of predicted high archaeological sensitivity around the dam foreshores. Four sites were recorded comprising one isolated find (Chaffey A2) and three artefact scatters (Chaffey A1, Chaffey A3 and Chaffey A4) (Resource Planning 1990). To date

no site cards have been submitted for these sites to the NSW OEH and no grid references for these sites have been provided.

In 1996 Ruig undertook a survey of a proposed fibre optic cable route from Nundle to Woolomin. One site was identified (Nundle/Woolomin 1*)*, which comprises an isolated find, and is listed on the OEH AHIMS register.

In 2008 NOHC conducted an archaeological survey for the Chaffey Dam Upgrade and twelve Aboriginal sites were recorded. These comprised five artefact scatters (CDAS1, CDAS2, CDAS3, CDAS4 and CDAS5) and seven isolated finds (CDIF1, CDIF2, CDIF3, CDIF4, CDIF5, CDIF6 and CDIF7).

5.2 AHIMS Search Results

Thirteen Aboriginal recordings are listed on the OEH AHIMS for the area around the Chaffey Dam study area within the following (GDA) map grid references (Zone 56):

Eastings: 318518 - 324877

Northings: 6522453 - 6532087

Sites comprise five artefact scatters (Nundle/Woolomin 1, CDAS1, CDAS2, CDAS3, CDAS4), and seven isolated finds (CDIF1, CDIF2, CDIF3, CDIF4, CDIF5, CDIF6 and CDIF7).

See Figure 5.1 for the location of each of these sites.

A copy of the AHIMS search is provided in Appendix 1.

Table 5.1 Inventory of Recorded Aboriginal Sites [GDA references removed, refer Section 1.4.3]

AHIMS Site No.	Site Name	Recording Type	GDA Reference
29-3-0018	Nundle/Woolomin 1	isolated find	
n/a	Chaffey A1	artefact scatter	
n/a	Chaffey A2	isolated find	
n/a	Chaffey A3	artefact scatter	
n/a	Chaffey A4	artefact scatter	
29-3-0032	CDAS1	artefact scatter	
29-3-0033	CDAS2	artefact scatter	
29-3-0034	CDAS3	artefact scatter	
29-3-0035	CDAS4	artefact scatter	
29-3-0036	CDAS5	artefact scatter	
29-3-0037	CDIF1	isolated find	
29-3-0038	CDIF2	isolated find	
29-3-0039	CDIF3	isolated find	
29-3-0040	CDIF4	isolated find	
29-3-0041	CDIF5	isolated find	
29-3-0042	CDIF6	isolated find	
29-3-0043	CDIF7	isolated find	

5.3 Previously Recorded Sites

See Figure 5.1 for the location of each of the following sites.

5.3.1 Proposed raising of the Chaffey Dam Wall assessment (Resource Planning 1990)

Sites Chaffey A1, A2, A3 and A4 were identified by Resource Planning (1990).

Chaffey A1

This group of artefacts was identified on a track along the low angle colluvial slope adjacent to Canns Creek. The site is approximately 20 m from a former position of a meander on Canns Creek. The channel is now straightened and is located further to the north. The flaked stone material is scattered along 50 m of a track adjacent to the creek. The track is 2.5 m wide. There is also a high background level of angular gravel from colluvial sources (Resource Planning 1990).

Artefacts

1. fine grained cherty argillite flake, from water worn pebble, cortex on whole of dorsal surface 51 x 47 x 21 mm.
2. cherty argillite flake, 30 x 40 x 12 mm.
3. cherty argillite broken flake, proximal portion 28 x 19 x 10 mm.
4. black chalcedony core, 52 x 45 x 30 mm.
5. serpentinite flake, 50% cortex on dorsal surface, 33 x 39 x 14 mm.

Chaffey A2

This site is located on the left bank of Hydes Creek. The bank is 6-7m high above an inset valley fill. The high bank comprises a combination of bedrock, colluvium (alluvial fans) and valley alluvium. The archaeological material comprises a single flake of red jasper with fine white veins, 63 x 45 x 19mm. The flake has a broad platform, 20% cortex on the lateral margin, and minor retouch on the distal margin (Resource Planning 1990).

Chaffey A3

This site is located on a stony colluvial flat adjacent to Sheep Station Creek. The archaeological material comprises a large core of pale green/grey fine grained metamorphic material. The core is 120 x 95 x 49mm and has water worn cortex over about 30% of the surface. Four flakes have been removed. There is also some step flaking /retouch around one margin, which does not appear to have been caused by fluvial abrasion or damage from agricultural activities.

Nearby, on an exposure created by an ants nest, a single flake of the same material, 17 x 40 x 13mm was located. The flake had 100% cortex on the dorsal surface and a wide platform (Resource Planning 1990).

Chaffey A4

This site is located on a low gradient bedrock spur immediately south of Hydes Creek, on the western side of the present dam. Two flakes were identified on a track across the spur.

Artefacts

1. quartz/chalcedony flake, cortex on platform and distal margin, 50 x 47 x 19mm.
2. banded black/cream meta siltstone flake, broad platform, 57 x 21 x 15mm (Resource Planning 1990).

5.3.2 Nundle to Woolomin Fibre Optic Cable assessment (Ruig 1996)

The site Nundle/Woolomin 1 was identified by Ruig (1996).

Nundle/Woolomin 1 (AHIMS No. 9-3-0018)

Nundle/ Woolomin 1 is an isolated find, located immediately to the west of the electricity substation and to the east of Canns Creek in a paddock which exhibited signs of ploughing. The effective visibility within the vicinity of this artefact was good at approximately 35%. The archaeological material comprised an axe blank: 98 x 65 x 38mm, fine grained igneous, 15% cortex (Ruig 1996).

5.3.3 Chaffey Dam Upgrade (NOHC 2008)

Twelve sites including five artefact scatters, CDAS1, CDAS2, CDAS3, CDAS4 and CDAS5, and seven isolated finds CDIF1, CDIF2, CDIF3, CDIF4, CDIF5, CDIF6 and CDIF7, and four PADs, CDPAD1, CDPAD2, CDPAD3 and CDPAD4 were identified by NOHC (2008).

Chaffey Dam Artefact Scatter 1 (CDAS1)

This site is a scatter of six visible artefacts located on a hill slope above the Peel River. The site is located on a dirt vehicle track and downslope in erosion scalds on the western side of the track and covers an area approximately 10 m wide and 20 m long.

European artefacts including ceramic, glass and nails were also visible in the area of the site.

The visibility on the track was approximately 30%. The site has moderate to high potential to be larger and moderate to high potential to be associated with subsurface archaeological deposit.

Artefacts

1. grey tuff flaked piece, 42 x 19 x 8 mm
2. grey tuff flaked piece, 28 x 12 x 6 mm
3. grey tuff flaked piece, 21 x 16 x 4 mm
4. grey volcanic flake, 17 x 9 x 3 mm
5. grey pebble, possible grindstone, 100% pebble cortex, some pitting one end, 130 x 70 x 30 mm
6. grey volcanic core, 1 platform, 5+ scars, some cream patina, 88 x 60 x 20 mm

Chaffey Dam Artefact Scatter 2 (CDAS2)

This site is a scatter of four visible artefacts located on a dirt vehicle track below the Nundle fishing club. The site is located on a basal slope adjacent to the river flats associated with the Peel River. The site covered an area of approximately 3 x 10 m.

Visibility on the track was 40% and off the track was 5%. The site has moderate to high potential to be larger and moderate to high potential to be associated with subsurface archaeological deposit.

Artefacts

1. grey translucent quartz broken flake, darker striation through the stone, proximal end broken, 25 x 16 x 6 mm
2. grey tuff broken flake, pieces of artefact found and recorded as one, 45 x 26 x 6 mm
3. grey tuff broken flake, distal end broken, 22 x 15 x 6 mm,
4. red volcanic flaked piece, 13 x 12 x 7 mm

Chaffey Dam Artefact Scatter 3 (CDAS3)

This site is a scatter of four visible artefacts located north of “Kinabalu Cottage” midslopes above the Peel River in an area of mine tailings. The artefacts were located in a series of exposures on the hill slope.

The disturbance incidence over the area was 30% and visibility within these areas was 40% due to natural gravels. The site has moderate to high potential to be larger and low potential to be associated with subsurface archaeological deposit.

Artefacts

1. grey tuff flake, brown patina, 35 x 33 x 8 mm
2. dark grey tuff flake, 26 x 19 x 5 mm
3. brown tuff flake, 38 x 26 x 7 mm
4. light grey tuff, flake, 40 x 17 x 4 mm

Chaffey Dam Artefact Scatter 4 (CDAS4)

This site is a scatter of two artefacts located on the western side of the Western Chaffey Dam Road on an alluvial terrace above Hydes Creek. The artefacts were located in a series of erosion scalds on the terrace edge and in the road cutting. The two artefacts were located approximately 50 m apart.

The disturbance incidence across the whole area was <10% with 30% visibility within these areas. The site has moderate to high potential to be larger and moderate to high potential to be associated with subsurface archaeological deposit.

Artefacts

1. grey tuff flake 41 x 17 x 12 mm
2. grey tuff broken flake, mid section, 19 x 10 x 5 mm

Chaffey Dam Artefact Scatter 5 (CDAS5)

This site is a scatter of at least 13 artefacts located on an alluvial terrace above Hydes Creek on the eastern side of the Western Chaffey Dam Road. The artefacts were located in the road cutting and on erosion scalds on the edge of the terrace. The site measured approximately 200 x 50 m.

The disturbance incidence across the whole area was <10% with 60% visibility within these areas. The site has moderate to high potential to be larger and moderate to high potential to be associated with subsurface archaeological deposit.

Artefacts

1. grey tuff flake, 41 x 17 x 12 mm
2. grey tuff broken flake, midsection, 19 x 10 x 5 mm,
3. grey tuff broken flake, distal end broken, 39 x 26 x 7 mm
4. grey tuff flaked piece, 5% cortex, 34 x 12 x 10 mm
5. grey/cream tuff broken flake, 22 x 28 x 2 mm
6. grey/cream tuff flaked piece, 18 x 9 x 2 mm
7. red/brown chert flake, 32 x 31 x 8 mm
8. red/brown chert broken flake, distal end broken, 24 x 14 x 5 mm
9. cream rhyolitic tuff flaked piece, 30 x 24 x 11 mm
10. grey/green rhyolitic tuff flake, 32 x 24 x 9 mm
11. grey rhyolitic tuff broken flake, 15 x 8 x 3 mm
12. brown/red volcanic flaked piece, 23 x 22 x 5 mm
13. brown/red volcanic flaked piece, 27 x 15 x 8 mm

Chaffey Dam Isolated Find 1 (CDIF1)

This site is an isolated find located in a gully highly disturbed by past alluvial mining activities, and comprises a grey/cream banded tuff flake, 40 x 30 x 17 mm.

Disturbance incidence was 40% with 70% visibility within those areas. The site has low to moderate potential to be larger and low to moderate potential to be associated with subsurface archaeological deposit.

Chaffey Dam Isolated Find 2 (CDIF2)

This site is an isolated find located approximately 50 m north of the remains of "Rocklight" homestead. The artefact was located on a stone mound and comprises a grey rhyolitic tuff flaked piece, 30% cortex, 50 x 25 x 15 mm.

The disturbance incidence was <10% with 70% visibility within those area. The site has moderate potential to be larger and low to moderate potential to be associated with subsurface archaeological deposit.

Chaffey Dam Isolated Find 3 (CDIF3)

This site is an isolated find located midslopes above a drainage gully and the Peel. The artefact is located in a rocky area adjacent to a fenceline and comprises a grey rhyolitic tuff flake, 30% cortex with orange patina, 29 x 11 x 4 mm.

The disturbance incidence was 30% with 70% visibility within those areas. The site has low to moderate potential to be larger and low to moderate potential to be associated with subsurface archaeological deposit.

Chaffey Dam Isolated Find 4 (CDIF4)

This site is an isolated find located on a dirt track leading to a highpoint above the Dam and comprises a grey rhyolitic tuff flake, 70 x 80 x 15 mm.

Visibility on the track was 80% and off track was <10%. The site has low to moderate potential to be larger and low to moderate potential to be associated with subsurface archaeological deposit.

Chaffey Dam Isolated Find 5 (CDIF5)

This site is an isolated find located on the edge of the dam in gravelly rock lag deposits and comprises a grey rhyolitic tuff flaked piece, edge worn by water action, cream patina. 20 x 17 x 4 mm.

Visibility in this area was 20% due to the gravels. The site has low potential to be larger and low potential to be associated with subsurface archaeological deposit.

Chaffey Dam Isolated Find 6 (CDIF6)

This site is an isolated find located on the edge of a drainage line leading to Chaffey Dam and comprises a grey fine grained quartzite flake, 30 x 15 x 8 mm.

Disturbance in the area was 70% with 70% visibility. The site has low to moderate potential to be larger and low to moderate potential to be associated with subsurface archaeological deposit.

Chaffey Dam Isolated Find 7 (CDIF7)

This site is an isolated find located on a track in a mid valley context above a drainage line and comprises a grey rhyolitic tuff flaked piece, 15 x 13 x 12 mm.

Visibility on the track was 60% and off track was <5%. The site has low to moderate potential to be larger and low to moderate potential to be associated with subsurface archaeological deposit.

Chaffey Dam Potential Archaeological Deposit 1 (CDPAD1)

CDPAD1 is located on the alluvial terrace either side of Hydes Creek before it enters Chaffey Dam. The area contains one previously recorded site, A2, and two sites recorded during the current investigation, CDAS4 and CDAS5. The area has been disturbed by the construction of the Western Chaffey Dam Road.

Disturbance incidence within this area was <10%. The PAD has moderate to high potential.

Chaffey Dam Potential Archaeological Deposit 2 (CDPAD2)

CDPAD2, part of which was surveyed during 1990, is located on basal slopes above the original route of the Peel River between the river and Hydes Creek. One previously recorded site, A4, is located in this area.

This area was not surveyed during the current investigation however due to its relatively undisturbed context and its proximity to the Peel River it is considered that this area has moderate archaeological potential.

Chaffey Dam Potential Archaeological Deposit 3 (CDPAD3)

CDPAD3, part of which was surveyed during 1990, is located on the alluvial terrace of Canns Creek. Two previously recorded sites, A1 and 9-3-0018, are located in this area.

This area was not surveyed during the current investigation however due to its relatively undisturbed context and its proximity to Canns Creek it is considered that this area has moderate archaeological potential.

Chaffey Dam Potential Archaeological Deposit 4 (CDPAD4)

CDPAD4, part of which was surveyed during 1990, is located on the above the Peel River. One previously recorded site, A3, is located in this area.

This area was not surveyed during the current investigation however due to its relatively undisturbed context and its proximity to the Peel River it is considered that this area has moderate archaeological potential.

5.4 Predictive Model

Pearson's analysis of the patterns of Aboriginal occupation relevant to the Chaffey Dam region can be summarised by the following points, providing a predictive model for the study area:

- There is a strong relationship between site location and distance from water sources. Distance to water varied from 10 m to 500 m, but in general the average distance from water decreased as site size increased;
- Sites were found on hilly or undulating places rather than on river flats or the banks of waterways;
- Good drainage and views over watercourses and river flats were important site location criteria;
- Most sites were located in contexts that would originally have supported open woodlands, with small numbers in original grassland or forest contexts;
- Burial sites and grinding grooves were situated as close to habitation areas as geological constraints would allow;
- Ceremonial sites such as earth rings ('bora grounds') were located away from campsites;
- Stone arrangements were also located away from campsites in isolated places and tended to be associated with small hills or knolls or were on flat land;
- Quarry sites were located where stone outcrops with desirable working qualities were recognised and were reasonably accessible; and

- Based on ethnohistoric information, Pearson suggests that Aboriginal campsites were seldom used for longer than three nights and that large sites probably represent accumulations of short visits.

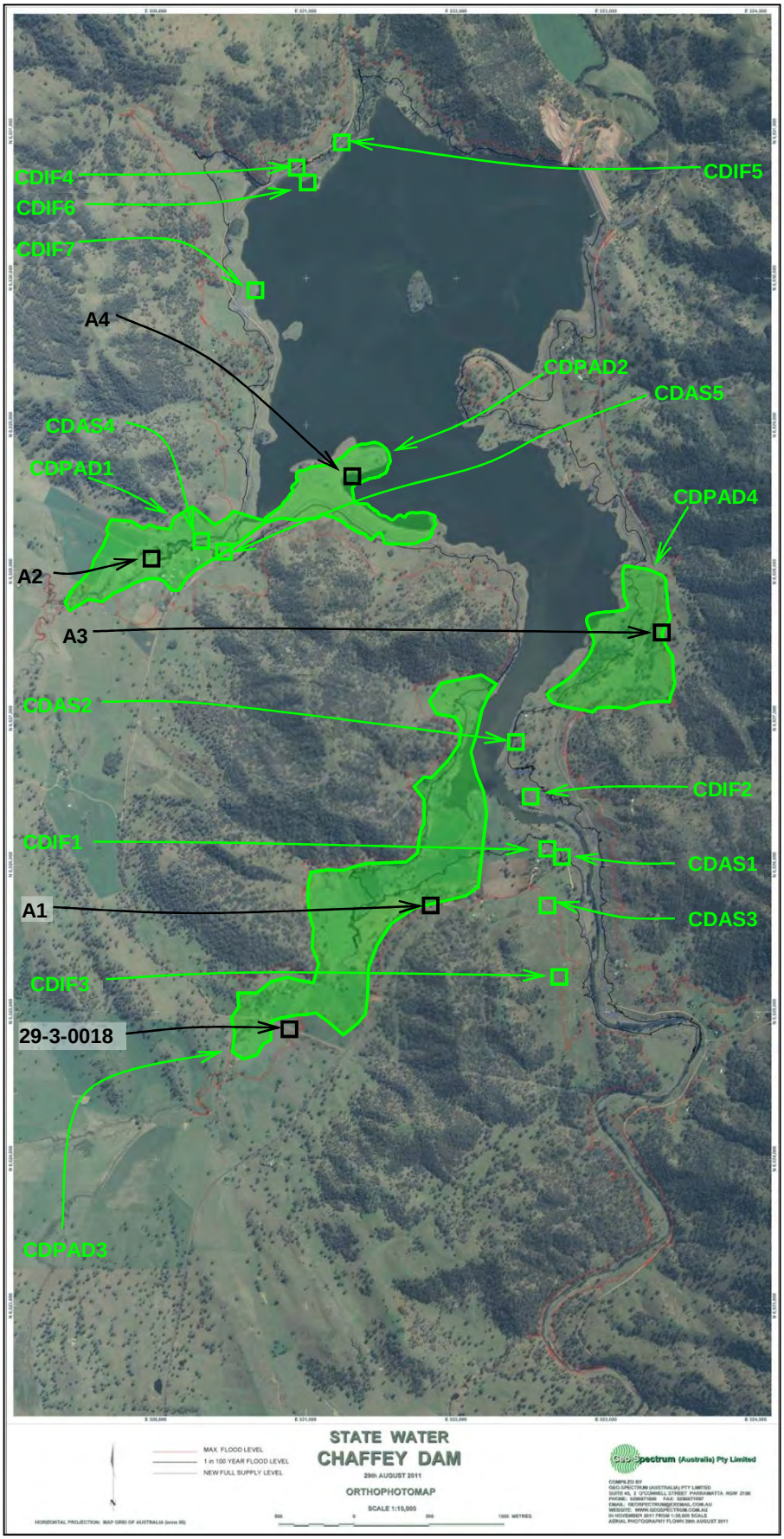

Figure 5.1 Location of previously recorded Aboriginal heritage sites within the Chaffey Dam study area including sites recorded in the 2008 study (green) and all other sites (black)

6. RESULTS

6.1 Summary

- Seventeen (17) previously recorded Aboriginal sites occur within the Chaffey Dam study area, thirteen (13) of which are listed on the AHIMS register.
- Four previously identified Potential Archaeological Deposits (PADs) occur within the Chaffey Dam study area.
- Sixteen (16) Aboriginal sites were identified during this investigation comprising:
    - Eight isolated finds;
        - Two of these with associated PAD
    - Seven artefact scatters;
        - Six of these with associated PAD
    - One potential quarry.
- Four (4) areas of PAD were identified during this investigation, and one previously identified PAD (CDPAD3) was redefined in this investigation.

See Figure 6.26 for all site locations, and Table 8.1 for a summary of all site locations.

6.2 Aboriginal Sites

The site numbering system used in the 2008 assessment (NOHC) has been continued for this investigation. This section provides site descriptions for all sites identified during the current field investigation.

6.2.1 Isolated Finds

CDIF8 Isolated Find

CDIF8 is located on the mid slopes of a low spur crest, adjacent to the current Chaffey Dam eastern foreshore (Figure 6.1).

The site comprises an isolated grey chert flake, measuring 18 x 28 x 9 mm.

Existing disturbance to the site includes the establishment and maintenance of a gravelled vehicle track, and small areas of sheet erosion adjacent to this. Other impacts to the site include vegetation clearance and use for pastoral/grazing purposes. The exposure incidence across the site was approximately 60%, and visibility within these exposures was approximately 30%.

The artefact is located on the verge of an established vehicle track on the eastern foreshore of Chaffey Dam, approximately 30 m within the proposed augmented full supply level. The site has low potential for subsurface Aboriginal artefacts.

Figure 6.1 Surface exposure and artefact location at CDIF8, looking southwest

CDIF9 Isolated Find

CDIF9 is located on east facing basal slopes, overlooking Silver Gully and on the northern side of Chaffey Dam (Figure 6.2).

The site comprise a grey-green tuff flake with flow banding and 20% reef cortex, measuring 65 x 49 x 30 mm. The artefact was located within the Western Foreshore road easement.

Existing disturbance to the site includes the construction of the Western Foreshore Road, and the inundation of the Chaffey Dam. Other impacts to the site include vegetation clearance and use for pastoral/grazing purposes. The exposure incidence across the site was approximately 40%, and visibility within these exposures was approximately 40%.

The artefact is located outside of the proposed augmented full supply level, but within the works area for the Western Foreshore road realignment. The site has low potential for subsurface Aboriginal artefacts.

Figure 6.2 Surface exposure and artefact location at CDIF9, looking northeast

CDIF10 Isolated Find

CDIF10 is located on the basal slopes of an east facing descending spur crest of Silver Gully Mountain, on the western foreshore of Chaffey Dam.

The site comprises an isolated grey tuff flake, measuring 29 x 17 x 9 mm.

Existing disturbance to the site includes vegetation clearance and use for pastoral/grazing purposes, and the inundation of the Chaffey Dam. The exposure incidence across the site was approximately 20%, and visibility within these exposures was approximately 30%.

The artefact is located within the proposed augmented full supply level, and within the proposed works area for the Western Foreshore Road. The site has low potential for subsurface Aboriginal artefacts.

CDIF11 Isolated Find

CDIF11 is located on a low gradient knoll, to the north of Hyde's Creek and adjacent to the Western Foreshore Road (Figure 6.3).

The site comprises an isolated light grey-pink banded tuff flake with a hinge termination, measuring 33 x 29 x 10 mm.

Existing disturbance to the site includes sheet erosion, denuded ground, vegetation clearance and use for pastoral/grazing purposes. The exposure incidence across the site was approximately 30%, and visibility within these exposures was approximately 40%.

The artefact is located within the proposed augmented full supply level and within the proposed works area for the Western Foreshore Road. The site has moderate to low potential for subsurface artefacts.

Figure 6.3 Location of CDIF11, looking northeast

CDIF12 Isolated Find and Potential Archaeological Deposit

CDIF12 is located on basal flats adjacent to the current Chaffey Dam foreshore, within a stock track (Figure 6.4).

The site comprises an isolated grey brown river pebble grinding stone, with a ground surface and rejuvenation pitting on the concave side, milled margins, and three potential incised lines on the convex side (Figure 6.5 and 6.6). The artefact measures 270 x 260 x 120 mm. An area potential archaeological deposit is associated with this site.

Existing disturbance to the site includes erosion associated with the stock track, vegetation clearance and use for pastoral and grazing purposes. The exposure incidence across the site was approximately 30%, and visibility within these exposures was approximately 50%.

There is moderate potential for additional artefacts to occur, particularly across the lower sections of the spur crest. The soil profile consists of a sandy loam topsoil of unknown depth. There is high potential for subsurface artefacts, however it is predicted that areal incidence of artefacts will be low to moderate. The potential for *in situ* material is assessed to be moderate.

The artefact is located within the proposed augmented full supply level. The area of potential archaeological deposit identified covers an area approximately 650 x 200 m northwest-southeast, with approximately 100 m of the PAD falling within the full supply level, adjacent to the Chaffey Dam foreshore.

Figure 6.4 View of site CFIF12, facing south

Figure 6.5 CDIF12, concave side with evidence of grinding, rejuvenation pitting and milling around margins

Figure 6.6 CDIF12, convex side, with three incised lines

CDIF13 Isolated Find and Potential Archaeological Deposit

CDIF13 is located on a west facing spur crest mid slope, overlooking the Peel River (Figure 6.7).

The site comprises an isolated grey tuff flake with possible use wear, measuring 41 x 12 x 31, and associated potential archaeological deposit.

Existing disturbance to the site includes vegetation clearance and use for pastoral/grazing purposes, including stock erosion around the bases of adjacent trees. The exposure incidence across the site was approximately 10%, and visibility within these exposures was approximately 50%.

There is moderate potential for additional artefacts to occur, particularly across the lower sections of the spur crest. The soil profile consists of a sandy loam topsoil of unknown depth. There is high potential for subsurface artefacts, however it is predicted that areal incidence of artefacts will be low to moderate. The potential for *in situ* material is assessed to be low. The area of PAD covers an area approximately 800 x 145 m, and falls within previously identified CDPAD3 (NOHC 2008).

The site and associated PAD fall within the proposed augmented full supply level.

Figure 6.7 View of CDIF13, facing southwest

CDIF14 Isolated Find

CDIF14 is located on a west facing spur crest basal slope, on Andersons Flat, south of Sheep Stallion Creek. The artefact is located within a vehicle track erosion (Figure 6.8).

This site comprises an isolated broken grey banded chalcedony flake, proximal portion with a longitudinal cone split. The artefact measures 22 x 20 x 5 mm.

Existing disturbance to the site includes establishment of a vehicle track, vegetation clearance and use for grazing/pastoral purposes. The exposure incidence across the site was approximately 60%, and visibility within these exposures was approximately 70%.

The site is within the proposed augmented full supply level.

Figure 6.8 View of CDIF14and exposure, facing east

CDIF15 Isolated Find

CDIF15 is located on west facing spur crest upper slopes, above the Peel River valley (Figure 6.9).

The site comprises an isolated grey and red chert flakes, with use-wear on the steep edge margin. The artefact measures 40 x 25 x 9 mm.

Existing disturbance to the site includes establishment of vehicle tracks, vegetation clearance and use for grazing/pastoral purposes. The exposure incidence across this site was approximately 50%, and visibility within these exposures was approximately 60%.

This site falls on the margin of the proposed augmented full supply level.

Figure 6.9 View of CDIF15 and exposure, facing northwest

6.2.2 Artefact Scatters

CDAS6 Artefact Scatter and Potential Archaeological Deposit

CDAS6 and the associated PAD is located on basal slopes, overlooking the original Peel River Valley to the north of Silver Gully Creek. The site is adjacent to the current Chaffey Dam foreshore, along an established vehicle track (Figure 6.10 and 6.11).

This artefact scatter comprises seven stone artefacts identified across an area approximately 90 x 10 m. Six of these artefacts were located together at the northern end of the site, with one artefact identified at the southern end of the site.

Artefact Descriptions:

- Grey chalcedony microcore, one platform, seven negative scars, 11 x 21 x 14 mm
- Black chert microcore, one platform, five negative scars, potential usewear on platform/use as scraper, 11 x 21 x 16 mm
- Dark grey chert microcore, one platform, five negative scars, possible usewear around platform, 10 x 25 x 14 mm
- Grey fine grained metamorphic flake, 22 x 21 x 4 mm
- Grey chert broken blade, medial portion, retouch on both margins, 12 x 10 x 5 mm
- Grey chert flake, 12 x 10 x 4 mm
- Grey fine grained volcanic flake, 22 x 22 x 6 mm

Existing disturbance to the site includes establishment of a vehicle track, some vegetation clearance, recreational use by campers, and use for stock/pastoral purposes. Exposure incidence across the site was approximately 50%, and visibility within these exposures was approximately 80%. Artefacts at this site were recorded within the established vehicle track, where visibility was greater (Figure 6.10).

There is a high potential for additional artefacts to occur. The soil profile consists of a silty sandy topsoil that appears to be at least 30 cm deep. There is moderate to high potential for subsurface artefacts, and it is predicted that areal incidence of artefacts will be moderate. The potential for *in situ* material is assessed to be moderate. The area of PAD covers an area approximately 310 x 100 m.

The artefact scatter is within the full supply level, and the associated PAD falls partially within the proposed augmented full supply level and extends an approximate 45 m to the northwest, and falls within the proposed works area for the Western Foreshore Road upgrade.

Figure 6.10 Exposure at CDAS6, looking east

Figure 6.11 CDAS6, looking south towards dam

CDAS7 Artefact Scatter and Potential Archaeological Deposit

CDAS7 and the associated PAD is located on an alluvial terrace associated with Silver Gully Creek (Figure 6.12).

The artefact scatter comprises three stone artefacts across an area approximately 10 x 2 m.

Artefact Descriptions:

- Green banded chert flake, snapped, proximal portion, 32 x 25 x 9 mm
- Green banded chert flaked piece, 27 x 12 x 8 mm
- Grey banded chert flake, 15 x 17 x 6 mm

Existing disturbance to this site includes sheet and rill erosion, fence construction, vegetation clearance and use for pastoral and grazing purposes. Artefacts were identified eroding out of a bank adjacent to a paddock fenceline (Figure 6.13). The exposure incidence across this site was approximately 40%, and visibility within these exposures was approximately 50%. Outside of these exposures visibility was generally low.

There is moderate to high potential for additional artefacts to occur in a subsurface context along the alluvial flats within this area. The soil profile at this site comprises a sandy loam of at least 50 cm depth in undisturbed areas. Potential for *in situ* material is considered to be low to moderate.

The area of PAD identified at this site extends for approximately 450 x 145 m, with the artefact scatter outside of the full supply level by approximately 60 m, and the area of PAD falling largely within the proposed augmented full supply level.

Figure 6.12 View of CDAS7 with exposure, facing southeast

Figure 6.13 CDAS7 with eroding bank and creekbed to the right, facing northwest

CDAS8 Artefact Scatter and Potential Archaeological Deposit

CDAS8 is located adjacent to a dry unnamed tributary of the Peel River, on a moderate gradient mid slope of a northeast facing spur crest (Figure 6.15).

The artefact scatter comprises five stone artefacts occurring in two concentrations. The first is approximately 30 x 15 m in the east containing four artefacts, and the second is a single artefact located to the west, adjacent to a large white box eucalyptus tree (Figure 6.14). The site has an area of associated potential archaeological deposit.

Artefact Descriptions

- Grey green flaked pebble hatchet preform, rejuvenation flaking at functional end, waterworn cortex, 110 x 35 x 26 mm
- Grey brown silicified sandstone river cobble, 60% waterworn cortex, wedge pitting on one margin, possible pitting on convex side, grinding and pitting on concave side, 200 x 134 x 65 mm
- Grey brown fine grained volcanic river pebble, concentrated pitting on one surface, flake detached from margin, 151 x 120 x 25 mm
- Dark grey fine grained volcanic manuport, 160 x 100 x 60 mm
- Grey volcanic anvil, 340 x 220 x 70 mm

Existing disturbance to the site includes sheet and rill erosion, vegetation clearance and use for pastoral and grazing purposes. Artefacts were identified within areas of sheet erosion. The exposure incidence across the site was approximately 40%, and visibility within these exposures was approximately 60%. Outside of these exposures, visibility was generally low.

There is moderate to high potential for additional artefacts to occur in a subsurface context. The soil profile at this site is a gravelly sandy loam of indeterminate depth. Potential for *in situ* material is low to moderate. The area of identified PAD is approximately 200 x 60 m.

The artefact scatter and associated PAD are largely within the proposed augmented full supply level, and extends approximately 30 m west of this.

Figure 6.14 View of CDAS8 with dam in background, facing east

Figure 6.15 View of CDAS8 towards creek bed, looking west

CDAS9 Artefact Scatter and Potential Archaeological Deposit

CDAS9 is located on a west facing descending spur crest midslope above the Peel River (Figures 6.16 and 6.17).

The artefact scatter comprises three stone artefacts occurring in two concentrations. The first is approximately 10 x 2 m in the south containing two artefacts, and the remaining artefact was located at the north of the scatter. The site has an area of associated potential archaeological deposit.

Artefact Descriptions:

- Grey green tuff flake, 30 x 45 x 12 mm
- Grey green tuff flake. 39 x 27 x 14 mm
- Grey tuff flaked piece, 77 x 56 x 32 mm

Existing disturbance to the site includes the establishment of a vehicle track, vegetation clearance and use for pastoral and grazing purposes. Artefacts were identified within the established vehicle track. The exposure incidence within this site was approximately 50%, and visibility within these exposures was approximately 70%. Outside of these exposures, visibility was generally low.

There is moderate potential for additional artefacts to occur. The soil profile consists of a sandy silt of indeterminate depth. There is high potential for subsurface artefacts, however it is predicted that areal incidence will be low to moderate. The potential for *in situ* material is assessed to be low. The area of identified PAD covers approximately 580 x 350 m.

The artefact scatter falls on the border of the full supply level, and the western 145 m portion of the PAD falls within the proposed augmented full supply level.

Figure 6.16 View of CDAS9 including exposure, looking south

Figure 6.17 View of CDAS9 towards Peel River, looking east

CDAS10 Artefact Scatter and Potential Archaeological Deposit

CDAS10 and associated PAD (CDPAD4) are located basal slopes associated with the Peel River valley (Figure 6.18).

The artefact scatter comprises two artefacts, potentially representing a flaking floor, over an area approximately 15 x 2 m.

Artefact Descriptions:

- Grey green tuff core, water worn cortex, thirteen negative scars, three platforms, 35 x 50 x 30 mm
- Grey green tuff flake, 15 x 14 x 4 mm.

Existing disturbance to the site includes establishment of a vehicle track, vegetation clearance and use for pastoral and grazing purposes. Artefacts were identified within area of vehicle track erosion. The exposure incidence across the site was approximately 20%, and visibility within these exposures was approximately 50%. Outside of these exposures visibility was generally low.

There is high potential for additional artefacts to occur in a subsurface context across the basal slopes. The soil profile at this site comprises a sandy loam of indeterminate depth. Potential for *in situ* material is low to moderate.

The area of PAD identified at this site is described above (Section 5.3). The artefact scatter falls within the proposed augmented full supply level, and the area of PAD falls within and extends approximately 120 m southeast of the proposed augmented full supply level.

Figure 6.18 View of CDAS10 and exposure, facing southwest

CDAS11 Artefact Scatter

CDAS11 is located on the basal slopes of a descending spur crest overlooking the Peel River valley.

The artefact scatter comprises two artefacts identified across an area approximately 30 x 10 m.

Artefact Descriptions:

- Grey chert core, 60% reef cortex, one platform, steep scraper on platform, 14 x 30 x 27 mm

- Grey fine grained volcanic flake, 17 x 19 x 4 mm

Existing disturbance to the sites includes development of vehicle tracks, vegetation clearance, use for recreational purposes, and use for grazing/pastoral purposes. The exposure incidence across this site was approximately 60%, and visibility within these exposures was approximately 50%. Outside of these exposures visibility was generally low.

This site falls within the proposed augmented full supply level.

CDAS12 (Formerly CDIF2) Artefact Scatter and Potential Archaeological Deposit

CDAS12 is located on alluvial flats adjacent to the Peel River (Figure 6.19).

This site includes previously recorded isolated find CDIF2 (Section 5.3) with the addition of an isolated black chert core, with two platforms, nine negative scars and evidence of platform preparation. The artefact measures 39 x 70 x 52 mm. The site has an area of associated potential archaeological deposit.

This site is largely disturbed as it is associated with alluvial gold mining workings. The exposure incidence across the site was approximately 40%, and visibility within these exposures was approximately 20%.

The site is associated with a portion of formerly identified CDPAD3, which has been further refined to cover an area approximately 420 x 250 m, falling between two tributaries of the Peel River. There is high potential for additional artefact to occur. There is moderate potential for subsurface artefacts, however it is predicted that areal incidence of artefacts will be low, and the potential for *in situ* artefacts almost zero, due to the disturbed nature of this area.

The artefact scatter is located on the edge of the proposed augmented full supply level, and the area of PAD falls largely outside of the full supply level.

Figure 6.19 View of CDAS19 towards Peel River, facing west

6.2.3 Quarry Sites

CDQ1 Potential Quarry

CDQ1 is located on the mid slope of a small knoll, situated between Hyde's Creek and the Peel River (Figure 6.20).

The site comprises a small outcropping of a basaltic volcanic rock, with a number of negative scars (Figure 6.21) on the *in situ* boulders and large detachment flakes discarded at the site.

The site falls on the boundary of the proposed augmented full supply level.

Figure 6.20 View of CDQ1 rocky outcrop, looking west

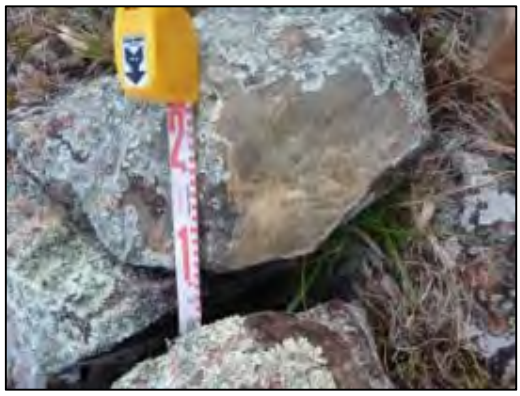

Figure 6.21 Example of negative scar on boulders at CDQ1

6.2.4 Potential Archaeological Deposits

CDPAD5

CDPAD5 is located on a descending spur crest of Goat Hill onto the Peel River valley, bordered by drainage lines (Figure 6.22). Soil deposits in this location appear to be at least 40 cm deep. The PAD is approximately 50 x 40 m in area.

Primary forms of existing disturbance at this site are associated with limited vegetation clearance and animal disturbance in the form of bioturbation and burrows. Visibility at this PAD is generally low, averaging less than 10%.

This location is predicted to have moderate potential for subsurface artefacts, and the potential for *in situ* material is predicted to be moderate.

The PAD falls within and extends approximately 15 m northeast of the proposed augmented full supply level.

Figure 6.22 View of CDPAD5, looking west

CDPAD6

CDPAD6 is located on the toe slope of a spur crest of Goat Hill with a southern aspect, onto the Peel River valley, and bordered by drainage lines (Figure 6.23). Soil deposits in this location appear to be at least 50 cm deep. The PAD is approximately 85 x 65 m in area.

Primary forms of existing disturbance at this site are associated with vegetation clearance and animal disturbance in the form of bioturbation and burrows. Visibility at this PAD is generally low, averaging less than 10%.

This location is predicted to have moderate to high potential for subsurface artefacts, and the potential for *in situ* material is predicted to be moderate.

The PAD falls within the proposed augmented full supply level.

Figure 6.23 View of CDPAD6, looking south

CDPAD7

CDPAD7 is located on a descending undulating spur crest of Goat Hill, and corresponds to the lower gradient portion of the spur associated with a number of drainage lines (Figure 6.24). The soil in this location is of indeterminate depth. The PAD is approximately 150 x 85 m.

Primary forms of existing disturbance at this site are associated with vegetation clearance and use for recreational purposes, as it is adjacent to the fishing club camp grounds. Visibility at this PAD is generally low, averaging less than 5%.

The PAD falls within the proposed augmented full supply level.

Figure 6.24 View of CDPAD7, facing west

CDPAD8

CDPAD8 is located on alluvial terraces associated with the confluence of a number of drainage lines (Figure 6.25). Soil deposits in this location appear at least 60 cm deep, but could extend below this. The PAD is approximately 150 x 100 m.

Primary forms of existing disturbance at this site are associated with vegetation clearance, use for recreational purposes including the construction of a camping ground and picnic facilities, and the establishment of the Dulegal Arboretum. Visibility at this PAD is generally low, averaging less than 15%.

The PAD falls within the proposed augmented full supply level.

Figure 6.25 View of CDPAD8, looking east

6.3 Inventory of Site Locations

Table 8.1 provides a summary inventory of all identified Aboriginal sites located in and around the proposed study area.

Table 8.1 Inventory of Site Locations [GPS references removed, refer Section 1.4.3]

Site Number	GPS Reference (GDA)	Site Type	Landform
Nundle/Woolomin 1		Isolated find	Mid slope
Chaffey A1		Artefact scatter	Basal slope
Chaffey A2		Isolated find	Creek bank
Chaffey A3		Artefact scatter	Colluvial flat
Chaffey A4		Artefact scatter	Spur
CDAS1		Artefact scatter	Mid slope
CDAS2		Artefact scatter	Basal slope
CDAS3		Artefact scatter	Mid slope
CDAS4		Artefact scatter	Alluvial terrace
CDAS5		Artefact scatter	Alluvial terrace
CDIF1		Isolated find	Gully
CDIF2		Isolated find	Mid slope
CDIF3		Isolated find	Mid slope
CDIF4		Isolated find	Mid slope
CDIF5		Isolated find	Basal slope
CDIF6		Isolated find	Drainage line
CDIF7		Isolated find	Mid slope
CDIF8		Isolated Find	Spur crest midslope
CDIF9		Isolated Find	Basal slope
CDIF10		Isolated Find	Spur crest basal slope
CDIF11		Isolated Find	Low gradient knoll
CDIF12		Isolated Find and PAD	Basal flats

Site Number	GPS Reference (GDA)	Site Type	Landform
CDIF13		Isolated Find and PAD	Spur crest midslope
CDIF14		Isolated Find	Spur crest basal slope
CDIF15		Isolated Find	Spur crest midslope
CDAS6		Artefact Scatter and PAD	Basal slope
CDAS7		Artefact Scatter and PAD	Alluvial terrace
CDAS8		Artefact Scatter and PAD	Spur crest midslope
CDAS9		Artefact Scatter	Spur crest midslope
CDAS10		Artefact Scatter and PAD	Basal slope
CDAS11		Artefact Scatter	Spur crest basal slope
CDAS12		Artefact Scatter and PAD	Alluvial flats
CQD1		Potential Quarry	Knoll
CDPAD1		PAD	Alluvial terrace
CDPAD2		PAD	Basal slopes
CDPAD3		PAD	Alluvial terrace
CDPAD4		PAD	Alluvial terrace
CDPAD5		PAD	Spur crest
CDPAD6		PAD	Spur crest
CDPAD7		PAD	Spur crest
CDPAD8		PAD	Alluvial terraces

* Resource Planning has not submitted site cards to the AHIMS register for these sites or recorded GPS references in their report – the locations on the figures are based on figures from their 1990 report.

6.4 Survey Coverage and Visibility Variables

The effectiveness of archaeological field survey is to a large degree related to the obtrusiveness of the sites being looked for and the incidence and quality of ground surface visibility. Visibility variables were estimated for all areas of comprehensive survey within the study area. These estimates provide a measure with which to gauge the effectiveness of the survey and level of sampling conducted. They can also be used to gauge the number and type of sites that may not have been detected by the survey.

Ground surface visibility is a measure of the bare ground visible to the archaeologist during the survey. There are two main variables used to assess ground surface visibility, the frequency of exposure encountered by the surveyor and the quality of visibility within those exposures. The predominant factors affecting the quality of ground surface visibility within an exposure are the extent of vegetation and ground litter, the depth and origin of exposure, the extent of recent sedimentary deposition, and the level of visual interference from surface gravels. Two variables of ground surface visibility were estimated during the survey:

- A percentage estimate of the total area of ground inspected which contained useable exposures of bare ground; and

- A percentage estimate of the average levels of ground surface visibility within those exposures. This is a net estimate and accounts for all impacting visual and physical variables including the archaeological potential of the sediment or rock exposed.

The obtrusiveness of different site types is also an important factor in assessing the impact of visibility levels.

The visibility across the Chaffey Dam Augmentation and Safety Upgrade study area was generally low as a result of pasture grass and other vegetation. Increased visibility was available along stock and vehicle track exposures, and areas of sheet erosion and rill erosion associated with creeklines.

6.5 Conclusions

Sixteen Aboriginal archaeological sites and four areas of potential archaeological deposit were identified during this investigation. This included a potential stone quarry. A large proportion of the site has been disturbed by stock grazing, mining activity or the dam.

It is reasonable to assume that small Aboriginal artefact scatters and isolated finds remain undetected in the study area. Subsurface cultural material may be present in the area, both associated with the recorded sites and in the identified areas of archaeological potential. The current investigation has allowed for previous areas of identified PAD to be refined.

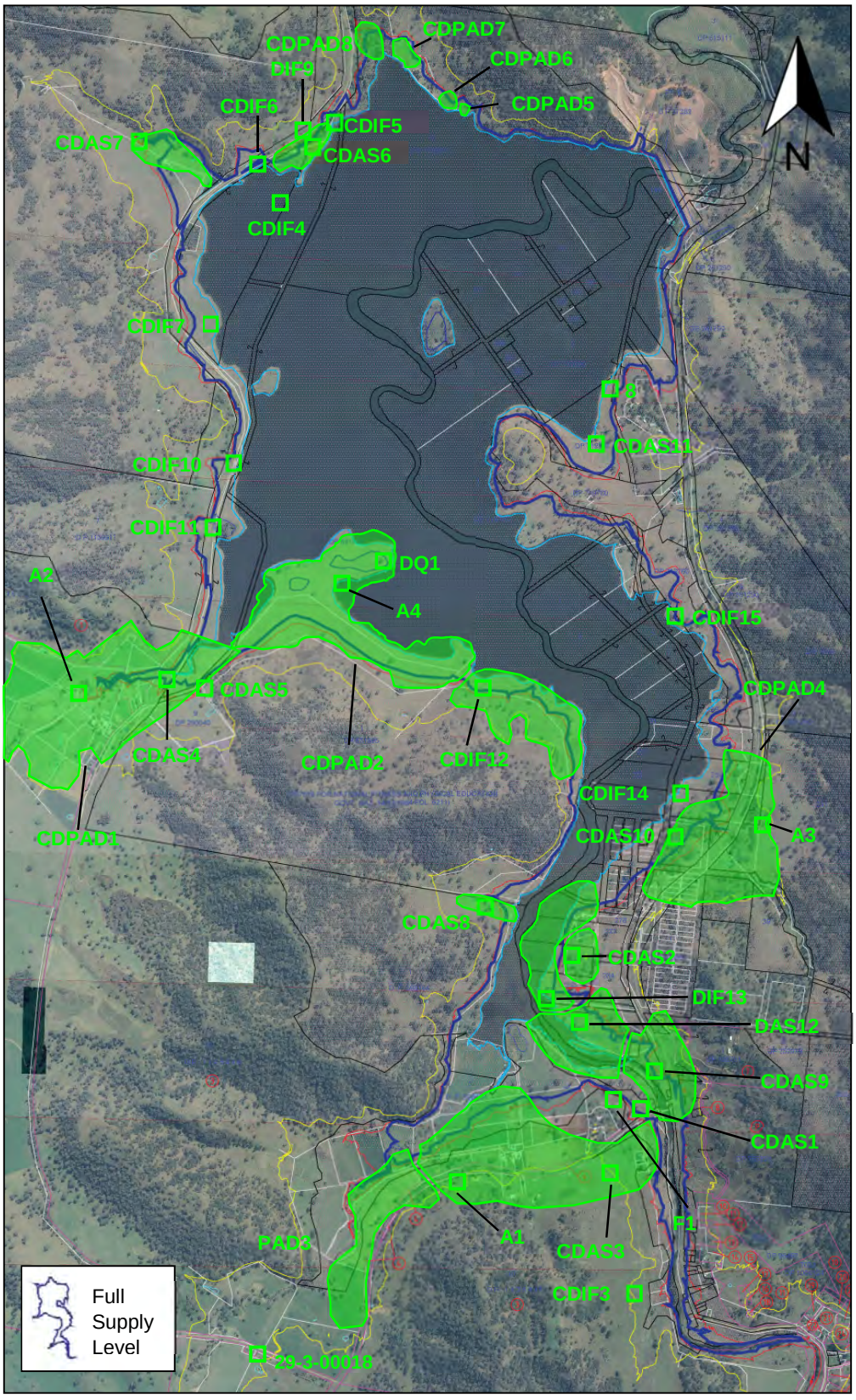

Figure 6.26 Site and PAD locations (green)
(Base image provided by State Water)

7. SIGNIFICANCE ASSESSMENT

7.1 Assessment Criteria

The Burra Charter of Australia defines cultural significance as 'aesthetic, historical, scientific or social value for past, present and future generations' (Aust. ICOMOS 1999). The assessment of the cultural significance of a place is based on this definition but often varies in the precise criteria used according to the analytical discipline and the nature of the site, object or place.

In general, Aboriginal archaeological sites are assessed using five potential categories of significance:

- significance to contemporary aboriginal people;
- scientific or archaeological significance;
- aesthetic value;
- representativeness; and
- value as an educational and/or recreational resource.

Many sites may be significant according to several categories and the criteria used to assess and establish significance will vary according to the nature and purpose of the evaluation. Cultural significance is a relative value based on variable references within social and scientific practice. The cultural significance of a place is therefore not a fixed assessment and may vary with changes in knowledge and social perceptions.

Cultural significance can be defined as the cultural values of a place held by and manifest within the local and wider contemporary Aboriginal community. Places of significance may be landscape features as well as archaeologically definable traces of past human activity. The significance of a place can be the result of several factors including: continuity of tradition, occupation or action; historical association; custodianship or concern for the protection and maintenance of places; and the value of sites as tangible and meaningful links with the lifestyle and values of community ancestors. Aboriginal cultural significance may or may not parallel the archaeological significance of a site.

Scientific significance can be defined as the present and future research potential of the artefactual material occurring within a place or site. This is also known as archaeological significance.

There are two major criteria used in assessing scientific significance:

1. The potential of a place to provide information which is of value in scientific analysis and the resolution of potential research questions. Sites may fall into this category because they: contain undisturbed artefactual material, occur within a context which enables the testing of certain propositions, are very old or contain significant time depth, contain large artefactual assemblages or material diversity, have unusual characteristics, are of good preservation, or are a constituent of a larger significant structure such as a site complex.

2. The representativeness of a place. Representativeness is a measure of the degree to which a place is characteristic of other places of its type, content, context or location. Under this criteria a place may be significant because it is very rare or because it provides a characteristic example or reference.

The value of an Aboriginal place as an educational resource is dependent on: the potential for interpretation to a general visitor audience, compatible Aboriginal values, a resistant site fabric, and feasible site access and management resources.

The principal aim of cultural resource management is the conservation of a representative sample of site types and variation from differing social and environmental contexts. Sites with inherently unique

features, or which are poorly represented elsewhere in similar environment types, are considered to have relatively high cultural significance.

The cultural significance of a place can be usefully classified according to a comparative scale which combines a relative value with a geographic context. In this way a site can be of low, moderate or high significance within a local, regional or national context. This system provides a means of comparison, between and across places. However, it does not necessarily imply that a place with a limited sphere of significance is of lesser value than one of greater reference.

The following assessments are made with full reference to the scientific, aesthetic, representative and educational criteria outlined above.

Reference to Aboriginal cultural values has also been made where these values have been communicated to the consultants. It should be noted that Aboriginal cultural significance can only be determined by the Aboriginal community, and that confirmation of this significance component is dependent on written submissions by the appropriate representative organisations.

7.2 The Study Area

The study area for the Chaffey Dam Augmentation and Safety Upgrade project includes the proposed augmented Full Supply Level, and works areas associated with road and bridge upgrades for the project. For this investigation a small buffer around this area, dependent on topography, was investigated during field survey.

The majority of sites identified within the study area are surface scatters of artefacts, many with moderate potential for associated potential archaeological deposits (Table 7.1). A few areas of PAD unassociated with surface indicators of sites have also been identified.

The significance of areas of potential archaeological deposits (**CDPAD1-CDPAD8**) cannot be determined prior to further investigation to clarify the nature, extent and integrity of the deposits.

Table 7.1 provides a summary of the archaeological (scientific) significance assessment of all sites within or in close proximity to the study area, including previously recorded sites.

As described in Section 4 during the site visit the registered Aboriginal stakeholders communicated that all Aboriginal objects within the project area have a cultural value to them as evidence of their past way of life and connection to the land. The registered Aboriginal stakeholders noted that this cultural value is of such significance as to require salvaging and relocating of the items.

The cultural significance of the sites relates more to the items (Aboriginal artefacts) themselves and their overall connection to “country” rather than to the sites as a “place”. In terms of cultural values moving an Aboriginal artefact to another area within the same landscape does not diminish its significance, as long as the connection to country is maintained.

No indication has been given by the Aboriginal community to date that there are any areas or landscapes of particular cultural interest within the study area.

Table 7.1 Archaeological Site Significance Assessment

Site	Significance
Nundle/Woolomin 1	Moderate archaeological significance at a local level
Chaffey A1	Moderate archaeological significance at a local level
Chaffey A2	Moderate archaeological significance at a local level
Chaffey A3	Moderate archaeological significance at a local level
Chaffey A4	Moderate archaeological significance at a local level
CDAS1	Moderate archaeological significance at a local level
CDAS2	Moderate archaeological significance at a local level
CDAS3	Moderate archaeological significance at a local level
CDAS4	Moderate archaeological significance at a local level
CDAS5	Moderate archaeological significance at a local level
CDIF1	Low archaeological significance at a local level
CDIF3	Low archaeological significance at a local level
CDIF4	Low archaeological significance at a local level
CDIF5	Low archaeological significance at a local level
CDIF6	Low archaeological significance at a local level
CDIF7	Low archaeological significance at a local level
CDIF8	Low archaeological significance at a local level
CDIF9	Low archaeological significance at a local level
CDIF10	Low archaeological significance at a local level
CDIF11	Low archaeological significance at a local level
CDIF12	Moderate to high archaeological significance at a local level
CDIF13	Low to moderate archaeological significance at a local level
CDIF14	Low archaeological significance at a local level
CDIF15	Low archaeological significance at a local level
CDAS6	Moderate to high archaeological significance at a local level
CDAS7	Moderate archaeological significance at a local level
CDAS8	Moderate archaeological significance at a local level
CDAS9	Moderate archaeological significance at a local level
CDAS10	Moderate archaeological significance at a local level
CDAS11	Moderate archaeological significance at a local level
CDAS12	Low to moderate archaeological significance at a local level
CQD1	Moderate to high archaeological significance at a local level

8. STATUTORY AND POLICY CONTEXT[1]

8.1 National Parks and Wildlife Amendment Bill 2010

The National Parks and Wildlife Amendment Bill 2010 (also known as the Omnibus Bill), was implemented on 1 October 2010 to amend the *National Parks and Wildlife Act 1974* (NPW Act). Existing offences relating to Aboriginal objects and places were replaced with new offences, including a strict liability offence, along with offence exemptions and defences.

Part 6 of the NPW Act provides specific protection for Aboriginal objects and declared Aboriginal places by establishing offences of harm. Harm is defined to mean destroying, defacing, damaging or moving an object from the land. There are a number of defences and exemptions to the offence of harming an Aboriginal object or place. One of the defences is that the harm was carried out under an Aboriginal Heritage Impact Permit (AHIP).

In practice, archaeologists use a methodology that groups 'Aboriginal objects' into various site classifications according to the nature, occurrence and exposure of archaeological material evidence. The archaeological definition of a site may vary according to survey objectives; however a site is not recognised or defined as a legal entity in the NPW Act.

It should be noted that even single and isolated artefacts are protected as Aboriginal objects under the NPW Act.

In 2010 the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* was adopted by clause 3A of the National Parks and Wildlife Regulation 2009 (NPW Regulation). The code allows for the subsurface test excavation of Aboriginal objects without the need for an AHIP. The code establishes the requirements for undertaking test excavation without an AHIP and establishes the requirements that must be followed when carrying out archaeological investigation in NSW where an application for an AHIP is likely to be made.

Additional amendments that commenced on 1 October 2010 include the introduction of new processes for AHIP applications, consultation guidelines to support the AHIP application process, and mechanical provisions such as the transfer and variations of conditions of AHIPs.

8.2 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) and its regulations, schedules and associated guidelines require that environmental impacts are considered in land use planning and decision making. Environmental impacts include impacts to cultural heritage. The EP&A Act was reformed by the *Environmental Planning and Assessment Amendment (Part 3A Repeal) Act 2011*.

State Significant Infrastructure, Part 5.1 of the Act

A specific assessment system has been created in the Environmental Planning and Assessment Act to consider projects classed as State significant development (SSD) and State significant infrastructure (SSI).

A range of development types such as mines and manufacturing plants as well as warehousing, waste, energy, tourist, education and hospital facilities are considered to be SSD if they are over a certain size or located in a sensitive environmental area.

[1] The following information is provided as a guide only. Readers are advised to seek qualified legal advice relative to legislative matters.

Major infrastructure proposals, in particular linear infrastructure such as roads, railway lines or pipes which often cross a number of council boundaries, will generally be considered as SSI.

Development which doesn't require consent but which could have a significant environmental impact, such as a port facility or major water supply system, is also likely to be considered as SSI.

The assessment system for State significant development and infrastructure introduced on 1 October 2011 provides for a consolidated assessment of these proposals in one application. The NSW Department of Planning and Infrastructure carries out a single, coordinated assessment of all issues with a proposal, rather than a wide range of State agencies making separate assessments.

Proposals assessed as State significant generally only require approval from the Minister for Planning and Infrastructure (or his delegate), following a comprehensive assessment by the Department of Planning and Infrastructure conducted in consultation with other government agencies and councils.

As a result the following authorisations are not required from other government agencies for State Significant Development (SSD) and State Significant Infrastructure (SSI):

- Aboriginal heritage permits under the *National Parks and Wildlife Act 1974,* s115ZG(1)(d).

9. CONCLUSIONS AND RECOMMENDATIONS

9.1 Impact Assessment

The proposed Chaffey Dam Augmentation and Safety Upgrade project would have some impacts on Aboriginal heritage items within and adjacent to the proposed augmented full supply level. Direct impacts may be the result of:

- Construction works at the dam wall to raise the height by 8.4 m
- Raising of the Morning Glory Spillway by 6.5 m
- Modification of the existing auxiliary spillway
- Inundation to the augmented full supply level
- Realignment of the intersection of Tamworth-Nundle Road and River Road
- Realignment of sections of Tamworth-Nundle Road and River Road
- Replacement of the Bowling Alley Point Bridge
- Realignment of Western Foreshore Road from Hyde's Creek to Silver Gully
- Modification to Hyde's Creek Bridge
- Modification to the existing culvert crossing at Silver Gully

Indirect impacts may occur in cases where the site itself will remain in-situ, but the landscape around the site will be significantly altered or masked.

9.2 Impacts at Aboriginal Sites

In terms of specific impacts at Aboriginal sites, the main risks relate to the construction phase, and consequent inundation of many of the sites. Direct impacts to sites will result from the inundation of the dam to the augmented full supply level, and construction and upgrade of roads and associated bridges. Indirect impacts to sites may occur where sites fall within proposed works areas. A summary of potential impacts of each site is provided below in Table 9.1.

All sites that are to be affected by permanent or semi-permanent inundation will destroy the sites by potentially moving or washing away any surface artefacts. This would significantly reduce the significance and integrity of the sites.

Potential archaeological deposits would also be affected by the disturbance of deposits, washing away of sediments and creation of lag deposits. This would have the potential to reduce the significance and integrity of any archaeological deposits that may be present within these areas of PAD.

All sites that are to be affected by the construction and realignment of roads will be destroyed by the moving away of any surface artefacts, and any subsurface deposits would be destroyed by earthworks, significantly reducing the significance and integrity of the sites.

Table 9.1 Impact Assessment

Site Number	Type of Harm	Degree of Harm	Consequence of Harm
Nundle/Woolomin 1	Not impacted	Nil	NA
Chaffey A1	Not impacted	Nil	NA
Chaffey A2	Not impacted	Nil	NA
Chaffey A3	Not impacted	Nil	NA
Chaffey A4	Inundation	directly impacted	potential destruction of whole or part of site
CDAS1	Inundation	directly impacted	potential destruction of whole or part of site
CDAS2	Not impacted	Nil	NA
CDAS3	Not impacted	Nil	NA
CDAS4	Inundation and Western Foreshore Rd	directly impacted	potential destruction of whole or part of site
CDAS5	Western Foreshore Rd	directly impacted	potential destruction of whole or part of site
CDAS6	Inundation and Western Foreshore Rd realignment	directly impacted	potential destruction of whole or part of site
CDAS7	Inundation	directly impacted	potential destruction of whole or part of site
CDAS8	Inundation	directly impacted	potential destruction of whole or part of site
CDAS9	Potential inundation	directly impacted	potential destruction of whole or part of site
CDAS10	Inundation	directly impacted	potential destruction of whole or part of site
CDAS11	Inundation	directly impacted	potential destruction of whole or part of site
CDAS12	Inundation	directly impacted	potential destruction of whole or part of site
CDIF1	Tamworth- Nundle Rd realignment	directly impacted	potential destruction of whole or part of site
CDIF2	Now part of CDAS12	-	-
CDIF3	Not impacted	Nil	NA
CDIF4	Already inundated*	Nil	NA
CDIF5	Already inundated*	Nil	NA
CDIF6	Inundation and Western Foreshore Rd	directly impacted	potential destruction of whole or part of site
CDIF7	Inundation and Western Foreshore Rd	directly impacted	potential destruction of whole or part of site

Site Number	Type of Harm	Degree of Harm	Consequence of Harm
CDIF8	Inundation	directly impacted	potential destruction of whole or part of site
CDIF9	Western Foreshore Rd realignment	directly impacted	potential destruction of whole or part of site
CDIF10	Inundation and Western Foreshore Rd	directly impacted	potential destruction of whole or part of site
CDIF11	Inundation and Western Foreshore Rd	directly impacted	potential destruction of whole or part of site
CDIF12	Inundation	directly impacted	potential destruction of whole or part of site
CDIF13	Inundation	directly impacted	potential destruction of whole or part of site
CDIF14	Inundation	directly impacted	potential destruction of whole or part of site
CDIF15	Inundation	directly impacted	potential destruction of whole or part of site
CDQ1	Potential inundation	indirectly impacted	potential destruction of whole or part of site
CDPAD1	Inundation	directly impacted	potential destruction of part of site
CDPAD2	Inundation	directly impacted	potential destruction of part of site
CDPAD3	Inundation	directly impacted	potential destruction of part of site
CDPAD4	Inundation	directly impacted	potential destruction of part of site
CDPAD5	Inundation	directly impacted	potential destruction of part of site
CDPAD6	Inundation	directly impacted	potential destruction of part of site
CDPAD7	Inundation	directly impacted	potential destruction of part of site
CDPAD8	Inundation	directly impacted	potential destruction of part of site

*These sites are within the existing dam area, they were identified in 2008 during a period of reduced water levels, and at the time of the 2012 survey were resubmerged.

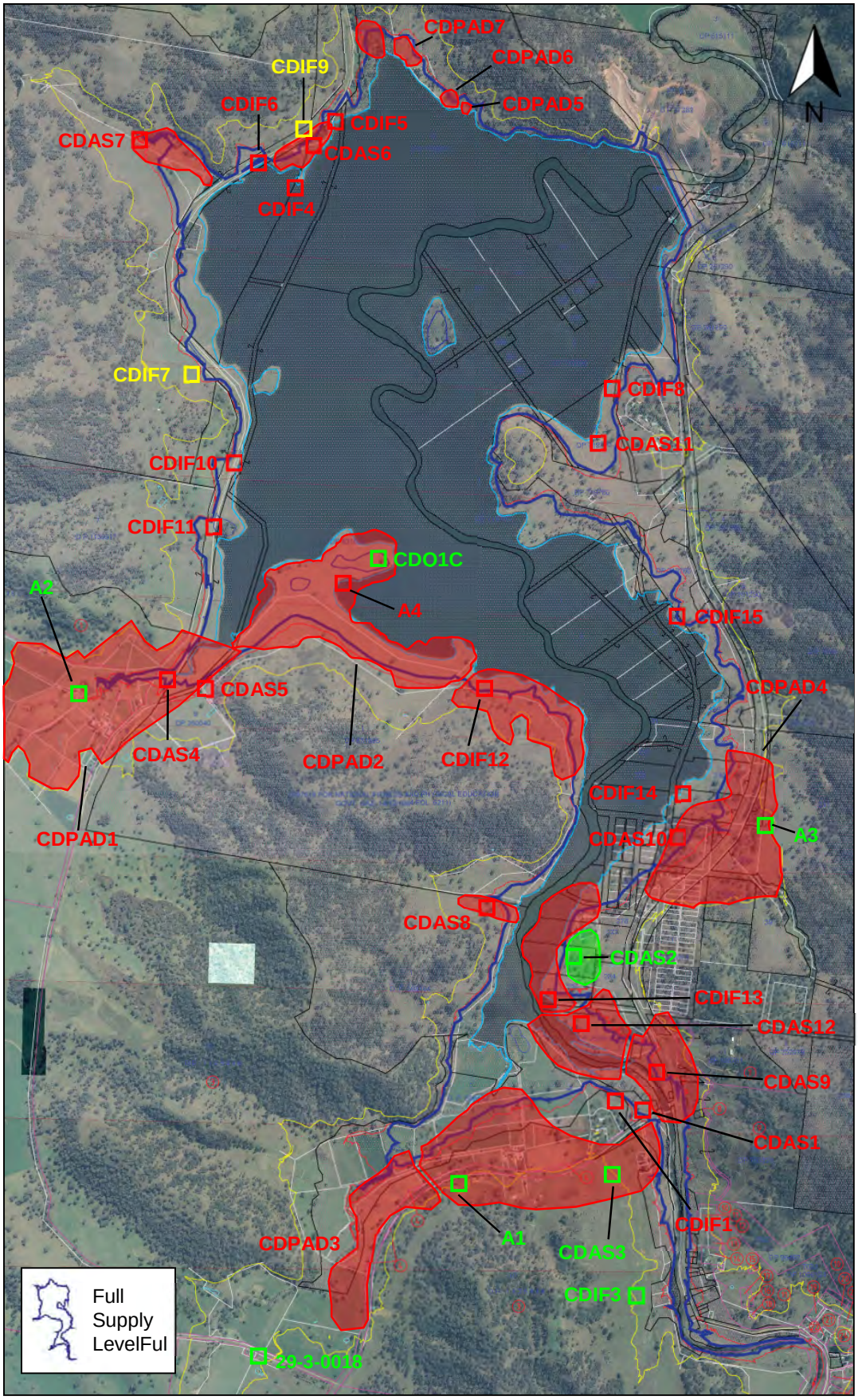

Figure 9.1 Potential impacts at sites: impacted sites (red), sites to be fenced during road upgrades (yellow), sites that will not be impacted (green) (Provided by State Water)

9.3 Recommendations

1. Surface salvage or relocation of all artefacts to be directly impacted should be undertaken. Surface salvage would entail the recording of each site by an Archaeologist and the collection of all visible artefacts.

2. Sites which fall on the border of the proposed inundation level (CDIF7 and CDIF9) should be fenced off during any construction works associated with the Tamworth-Nundle and Western Foreshore Roads and associated bridge realignments, to avoid indirect impacts during construction (see Figure 9.1);

3. A Stage one program of subsurface archaeological testing should be conducted within areas of proposed impacts to sites with associated PAD and areas of identified PAD.

   A stage one program would include targeted testing of representative landforms that will be impacted by the project. The results of this investigation will inform the need for further testing and/or salvage excavations.

   In accordance with Section 115ZG(1)(d) of the *Environmental Planning and Assessment Act 1979*, an Aboriginal heritage impact permit under Section 90 of the *National Parks and Wildlife Act 1974* is not required for approved State Significant Infrastructure.

4. A 'Back to Country' protocol should be developed that details the location and methodology to be used for the placement of all Aboriginal objects salvaged and excavated for the project in an area in close proximity to the study area. The area should be negotiated with the Aboriginal community and can be an area identified by the proponent. The location should be recorded by an Archaeologist and places on the NSW AHIMS as a new Aboriginal site.

5. The protocols for the unanticipated discovery of archaeological material and suspected human remains (presented in Appendix 4) be adopted and complied with during construction activities involving ground surface disturbance and excavation.

6. A copy of this report should be forwarded to all registered Aboriginal stakeholders.

10. REFERENCES

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APPENDIX 1

PUBLIC NOTICE

Advertisement in *Northern Daily Leader – 16 June 2012*

ABORIGINAL HERITAGE ASSESSMENT

Navin Officer Heritage Consultants Pty Ltd has been commissioned by WorleyParsons Services Pty Ltd to undertake a cultural heritage assessment of the Chaffey Dam Augmentation and Safety Upgrade project. The proponent for the project is State Water Corporation.

The investigation is required to assess the potential impact of the proposed development of these lands on Aboriginal cultural heritage values.

The area subject to investigation consists of increasing the Chaffey Dam storage capacity from 62 gigalitres to 100 gigalitres, by raising the dam wall 8.4 m, and the full supply level by 6.5 m. This upgrade will comply with modern day dam safety standards.

We are implementing the NSW Department of Environment, Climate Change and Water's Aboriginal cultural heritage consultation requirements for proponents 2010 for this project.

We invite Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of objects and places in the investigation area, to register an interest in a process of community consultation.

The purpose of this consultation is to assist the proponent and government authorities in the preparation and assessment of legislative requirements, permits and approvals.

Please forward expressions of interest to:

The Secretary
Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street
Kingston ACT 2604

The closing date for this registration of interest is the **30th June 2012.**

APPENDIX 2

RECORD OF ABORIGINAL CULTURAL HERITAGE CONSULTATION REQUIREMENTS FOR PROPONENTS 2010

Registrations of Interest

Bawurra Consultants

ABN: 69 936 638 575

Monday, 18th June 2012

The Secretary
Navin Officer Heritage Consultants Pty Ltd
4/Leichhardt Street
Kingston ACT 2604

The above company wishes to be placed on the Aboriginal Heritage Culture list to be consulted and be placed on the work roster for the Chaffey Dam Augmentation and Safety Upgrade Project.

Bawurra Consultants are fully insured and have skilled staff that is able to undertake all aspects of Aboriginal Heritage Culture work.

Yours truly

Kevin Sampson
Manager

ADDRESS: 1 Martyn Street, BREEZA NSW 2381 PH: 0447 220 757

BUNDA CONSULTANTS

ABN: 80718605244

Monday, 18th June 2012

The Secretary
Navin Officer Heritage Consultants Pty Ltd
4/Leichhardt Street
Kingston ACT 2604

The above company wishes to be placed on the Aboriginal Heritage Culture list to be consulted and be placed on the work roster for the Chaffey Dam Augmentation and Safety Upgrade Project.

Bunda Consultants are fully insured and have skilled staff that is able to undertake all aspects of Aboriginal Heritage Culture work.

Yours truly

Tammy Knox
Manager

Manager: Tammy Knox
Phone: 0402688031
Address: 23 Cunningham St Tamworth 2340
Email: Bundaconsultants@hotmail.com

Mr Tommy Taylor
Unit 1, 20 Rawson Ave
TAMWORTH NSW 2340

Mobile: 0402364489

The Secretary
Navin Officer Heritage Consultants Pty Ltd
4/7 Leichardt Street
KINGSTON ACT 2604

Dear Sir/Madam

I am writing to express my interest in assisting in the Aboriginal Heritage Assessment of the Chaffey Dam Augmentation and Safety Upgrade project.

Being a local Kamilaroi man I have lived and worked in this area for a large period of my 58 years and have extensive knowledge of the cultural significance of objects and places in the investigation area. My previous positions as the Coordinator of the local Nungaroo Aboriginal Land Council and the Northern Region Land Council have also added to my cultural knowledge of the area.

I may be contacted on the above phone number or address should you require any further information.

Regards

Tommy Taylor

27 June 2012

HEILAMON

CULTURAL CONSULTANTS

ABN: 83 364 806 356

Monday, 30 July 2012

Clifford Johnson

16B Mahogany Ave

MUSWELLBROOK, NSW, 2333

PH: 0478828745

EM: cliffj84@hotmail.com

The Secretary

Navin Heritage Consultants

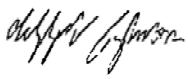
RE: Chaffey Jam Augmentation Safety Approval

Dear Sir/Madam,

I am a registered stake holder for the Gunnedah and Upper Hunter areas and I would like to express an interest in consultation and possible fieldwork for your project.

I have current workers comp and public liability insurance and have enclosed these letters of currency to you, if you would like any further information you can contact me on the above number.

Yours Sincerely



Clifford Johnson.

DESLEE TALBOTT CONSULTANT

2/19 South Street
Gunnedah NSW 2380

The Secretary
Navin Officer Heritage Consultants Pty ltd
4/71 Leichhardt Street
KINSTON ACT 2604

Friday, 27 July 2012

RE: Chaffey Dam Augmentation and Safety Upgrade Project

Dear Sir/Madam

My name is Deslee Matthews I am a Kamilaroi women with connections to the Wanaruah people through My Great Grandmother.

I would like to express an interest to be consultedion all matters including possible field work during the Aboriginal cultural heritage assessment for the Chafffey Dam Augmentation and Safety Upgrade project.

I have included copies of my public liability and workers comp policies for your records.

If you have any question please call or email me on the contacts I have provided.

Yours Sincerely

DESLEE MATTHEWS

Postal Address: PO Box 808 Muswellbrook NSW 2333

PH: 0431205336 EM: m-desley@hotmail.com ABN: 17 825 251 87

WUNDA CULTURAL CONSULTANTS

"Penryne"
Carol Road
BREEZA NSW 2381

PH: 0481191287
EM: travis_wundaCC12@hotmail.com

Sunday, 30 September 2012

The Secretary
Navin Officer Heritage Consultants Pty Ltd
4/17 Leichhardt Street
KINGSTON ACT 2604

RE: Chaffey Dam Augmentation and Safety Upgrade Project

Dear Sir/Madam

I am a registered stakeholder and a Kamilaroi man and would like to express an interest to be consulted on all matters including possible field work during the ACHA for the Chaffey Dam Augmentation and Safety Upgrade project.

I would like to add that I sent a representative to participate in the Aboriginal Stakeholder Site Inspection on Friday 28 September 2012 at Chaffey Dam.

If you have any further questions please contact me on by phone or email.

Yours faithfully

TRAVIS MATTHEWS
(WCC)

APPENDIX 3

AHIMS REGISTER SEARCH RESULTS

Office of Environment & Heritage

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : Chaffey2012
Client Service ID : 75934

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
29-3-0018	Nundle / Woolomin 1	AGD	56	320590	6524730	Open site	Valid	Artefact : -	Isolated Find	3495
	Contact	Recorders	Ms Jill Ruig					Permits		
29-3-0032	CDAS1	AGD	56	322761	6526075	Open site	Valid	Artefact : 6		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
29-3-0033	CDAS2	AGD	56	322417	6526865	Open site	Valid	Artefact : 4		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
29-3-0034	CDAS3	AGD	56	322073	6525742	Open site	Valid	Artefact : 4		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
29-3-0035	CDAS4	AGD	56	320291	6527996	Open site	Valid	Artefact : 2		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
29-3-0036	CDAS5	AGD	56	320324	6527971	Open site	Valid	Artefact : 13		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
29-3-0037	CDIF1	AGD	56	322669	6526182	Open site	Valid	Artefact : 1		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
29-3-0038	CDIF2	AGD	56	322528	6526462	Open site	Valid	Artefact : 1		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
29-3-0039	CDIF3	AGD	56	322740	6525258	Open site	Valid	Artefact : 1		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
29-3-0040	CDIF4	AGD	56	320975	6530524	Open site	Valid	Artefact : 1		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
29-3-0041	CDIF5	AGD	56	321262	6530813	Open site	Valid	Artefact : 1		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
29-3-0042	CDIF6	AGD	56	320878	6530707	Open site	Valid	Artefact : 1		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
29-3-0043	CDIF7	AGD	56	320668	6529883	Open site	Valid	Artefact : 1		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		

Report generated by AHIMS Web Service on 27/07/2012 for Deirdre Lewis-Cook for the following area at Datum :GDA, Zone : 56, Eastings : 318518 - 324877, Northings : 6523453 - 6532087 with a Buffer of 1000 meters. Additional Info : For an archaeological heritage assessment. Number of Aboriginal sites and Aboriginal objects found is 13

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Page 1 of 1

APPENDIX 4

UNANTICIPATED DISCOVERY PROTOCOLS

Protocol to be followed in the event that previously unrecorded Aboriginal object(s) (other than human remains) are encountered (modified from Navin Officer Heritage Consultants 2012)

In the event that one or more Aboriginal objects are encountered during construction works, the following protocol will be actioned:

1. All works must halt in the immediate area of the Aboriginal object(s) and any further disturbance to the area of the object(s) prevented.
2. The discoverer of the object(s) will notify machinery operators in the immediate vicinity of the object(s) so that work can be halted.
3. The object(s) will be reported to the site supervisor and the Principal/Project Manager.
4. The approximate extent, nature, associated archaeological potential and likely significance of the Aboriginal object(s) will be determined by an appropriately qualified person or persons (such as the project archaeologist), in consultation with sites officer(s) and/or representatives nominated by the registered Aboriginal stakeholders.
5. The appropriately qualified person(s) will determine if the object(s) belong to a previously recorded site or potential archaeological deposit. If the location of the object(s) is consistent with a previous recording, construction work can proceed provided that any required mitigative actions defined in an approved Management Plan which addresses cultural heritage impacts have been completed.
6. If the object(s) comprise a new site or potential archaeological deposit then the NSW Office of Environment and Heritage (OEH) will be notified and an appropriately qualified person or persons (such as the project archaeologist), accompanied by, and in consultation with the Aboriginal Focus Group representatives will record the object(s) and assess the likely significance of the object(s) and any associated deposits.
7. The new recording will be documented on an OEH site card and lodged with OEH.
8. The recording and assessment results will be reported to the Principal /Project Manager and an appropriate management strategy will be developed and instigated, in consultation with Aboriginal community representatives, OEH, and where appropriate the Department of Planning and Infrastructure. The management of the object(s) may involve:
    a. An archaeological salvage excavation with the aim of recovering a sufficient sample of the deposit to allow an analysis which is commensurate with the assessed potential of the deposit; or
    b. Collection of surface artefacts and any other required samples; and
    c. The temporary storage of recovered Aboriginal objects by the project archaeologist pending the completion of analysis.
9. In the event of the collection of Aboriginal artefacts from the project area:
    a. The artefacts will be appropriately recorded and collected.
    b. The location of the recovered artefacts will be recorded using a hand-held GPS, (if available and where necessary), or alternatively, by noting road project chainage intervals;
    c. The collected artefacts will be placed in a clear-plastic bag and placed in temporary secure storage at the site office;

d. Each bag should have the following information marked on it using a broad nib permanent spirit pen:

- The site location;
- The date (day/month/year);
- The collector's name;
- Any other relevant information (such as a GPS reference or description of contents); and
- Where necessary, the Principal is responsible for the temporary and secure storage of recovered Aboriginal objects prior to their long term management (refer step 10).

10. Following the completion of those construction works in which Aboriginal objects may potentially be revealed, the project archaeologist will analyse the data from collected artefacts, together with any data and finds from salvage excavations, (conduct any radiocarbon dating determinations, where appropriate) and prepare a report.

11. The post-analysis management of any recovered items will be the subject of discussion and a potential resolution(s) of the Aboriginal Focus Group, and liaison with and approval from OEH.

Protocol to follow in the event of the discovery of suspected human remains (modified from Navin Officer Heritage Consultants 2012)

In the event that suspected human material is encountered during construction works, the following protocol will be actioned:

1. All works must halt in the immediate area of the suspected human material find(s) and any further disturbance to the area of the find(s) prevented.
2. The discoverer of the find(s) will notify machinery operators in the immediate vicinity of the find(s) so that work can be halted.
3. The find(s) will be reported to the site supervisor and the Principal/Project Manager.
4. If there is substantial doubt regarding a human origin for the remains, then consider if it is possible to gain a qualified opinion within a short period of time. If feasible, gain a qualified opinion (this can circumvent proceeding further along the protocol for remains which are not human). If conducted, this opinion must be gained without further disturbance to the find(s) or the immediate area of the find(s). (Be aware that the site may be considered a crime scene that retains forensic evidence.) If a quick opinion cannot be gained, or the identification is positive, then proceed to the next step.
5. Immediately notify the following of the find(s):
    a. The local Police (this is required by law);
    b. An OEH archaeologist or Aboriginal Heritage Officer from the North West Branch EPRD Dubbo (02 6883 5330)
    c. Representative(s) from Aboriginal community; and
    d. The project archaeologist (if not already notified).
6. Co-operate and be advised by the Police and/or coroner with regard to further actions and requirements concerning the find area. If required, facilitate the definitive identification of the material by a qualified person (if not already completed).
7. In the event that the Police or Coroner instigates an investigation, construction works are not to resume in the designated area until approval in writing is gained from the NSW Police.
8. In the event that the Police and/or Coroner advise that they do not have a continuing or statutory role in the management of the finds then proceed with the following steps:
9. If the finds are not human in origin but are considered to be archaeological material relating to Aboriginal occupation then proceed with Unanticipated Discover Protocol for Aboriginal objects (other than human remains).
10. If the finds are Aboriginal or probably Aboriginal in origin:
    a. Ascertain the requirements of OEH, the Heritage Branch, the Principal/Project Manager, and the project archaeologist and the views of the Aboriginal Focus Group.
    b. Based on the above, determine and conduct an appropriate course of action. Possible strategies could include one or more of the following:
        - Avoiding further disturbance to the find and conserving the remains insitu;
        - Conducting archaeological salvage of the finds following receipt of any required statutory approvals;

- Scientific description (including excavation where necessary), and possibly also analysis of the remains prior to reburial;
- Recovering samples for dating and other analyses; and/or
- Subsequent reburial at another place and in an appropriate manner determined by the Aboriginal community.

11. If the finds are non-Aboriginal in origin:

    a. Ascertain the requirements of the Heritage Branch, Principal/Project Manager, and the views of any relevant community stakeholders and the project archaeologist.

    b. Based on the above, determine and conduct an appropriate course of action. Possible strategies could include one or more of the following:

        - Avoiding further disturbance to the find and conserving the remains insitu;
        - Conducting archaeological salvage of the finds following receipt of any required statutory approvals;
        - Scientific description (including excavation where necessary), and possibly also analysis of the remains prior to reburial;
        - Recovering samples for dating and other analyses; and/or
        - Subsequent reburial at another place and in an appropriate manner determined in consultation with the Heritage Office and other relevant stakeholders.

12. Construction related works in the area of the designated area may not resume until the Principal/Project Manager receives written approval from the relevant statutory authority:

    c. from the Police or Coroner in the event of an investigation;

    d. from OEH in the case of Aboriginal remains outside of the jurisdiction of the Police or Coroner; and

    e. from the Heritage Branch in the case of non-Aboriginal remains outside of the jurisdiction of the Police or Coroner.