URBIS

ABORIGINAL CULTURAL HERITAGE ASSESSMENT

754-770 & 784-786 MAMRE ROAD, KEMPS CREEK

Prepared for
THE GPT GROUP
3rd September 2021

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EXECUTIVE SUMMARY

Urbis Pty Ltd (Urbis) has been engaged by The GPT Group (the proponent) to produce an Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 & 784-786 Mamre Road, Kemps Creek (Lots 59 & 60 DP 259135) (hereafter referred as the 'subject area'). The ACHA informed the preparation of the attached Aboriginal Cultural Heritage Assessment Report (ACHAR), which will accompany State Significant Development (SSD) application for a warehousing and distribution centre within the subject area. This Archaeological Technical Report (ATR) has been prepared to accompany the ACHAR.

This ATR is intended to detail the methodology and results of test excavation. Refer to Section 1.2 of the ACHAR for detailed information regarding the proposed development at the subject area.

This ATR has been prepared in accordance with the following statutory guidelines:

- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) (CoP).

Test excavation was undertaken in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) to understand the nature, extent, integrity and research significance of the Aboriginal archaeological resource. The test excavation also aimed to sample the various landscape features for any potential sub-surface archaeological deposits.

The test excavation included:

- The Stage 1 and Stage 2 test excavation undertaken in the subject area (Lot 59 and 60 DP 259135) recovered 370 Aboriginal objects, all stone artefacts, from a total of 344 excavated test units (TUs) and expansion units (EUs).
- The highest densities of artefacts were located in Areas B and E (Lot 59 DP 259135).
- Area B contained 138 artefacts out of 129 excavated test pits and accounted for 37 % of the total subsurface assemblage.
- Area E contained 219 artefacts out of 91 excavated test pits and accounted for 59 % of the total subsurface assemblage.
- The remaining Areas A, C, D, F and G contained very low artefact densities
- All excavated material was wet sieved through a 5mm metal sieve station.

The predictive model formulated for the ACHAR anticipated that artefact scatters, PADs and isolated finds had moderate-high potential to occur in areas of low historical ground disturbance, on the basis of the distribution of artefact sites in the region as well as the landscape features present – including elevated ground/terraces associated with waterways and crests/spurs.

The results of the test excavation confirmed:

- Artefacts found during the test excavation program were predominantly concentrated adjacent to the waterway running through the subject area, specifically in Areas B and E. The entirety of the subsurface assemblage was situated within the alluvial terraces/lower slopes in proximity to the water course.
- Distance from water correlated with reduced artefact density. The crest landform portion of the subject area excavated (Area G) contained zero subsurface assemblage.
- The evidence gathered during the archaeological Stage 1 and Stage 2 test excavations indicates that Areas E and B contain evidence of a long term or repeat camp sites. The archaeological test excavations conducted at Open Areas B and E have identified moderate density, relatively intact subsurface deposits.
- Areas B and E of the 784-786 Mamre Road Subsurface Assemblage are considered to represent moderate scientific significance because of the moderate to high density of artefacts, reduction sequence and tool types.
- The remainder of 784-786 Mamre Road Subsurface Assemblage is considered to represent low scientific significance. Low density subsurface assemblage, common artefact types produced from local silcrete

resources. Distribution of artefacts was across the landscape and evident on all landforms predicted to contain subsurface deposits.

- Isolate Find 01 (IF-1) is considered to represent low scientific significance. Common artefact and site type in the Cumberland Plain discovered in a disturbed context.
- Feedback from the RAPs received has been positive and in support of the methodology utilised, assessment undertaken to date and recommendations made by the current ACHAR and associated ATR.
- Numerous groups (KYWG, A1 Indigenous Services Pty Ltd, Yurrandaali Pty Ltd and Barraby Cultural Services) have identified that the Kemps Creek area, including the current subject area, is of high cultural significance and confirm the high potential for Aboriginal archaeological sites within the subject area.

The project can proceed in accordance with the following recommendations:

Recommendation 1 - Archaeological salvage excavation at Open Area B, Open Area E and Test Unit E66 post-SSDA approval and prior to construction

It is recommended that salvage excavation be conducted for Open Area B, Open Area E and Test Unit E66 to recover sub-surface artefacts which will be impacted as a part of the proposed development. The purpose of the salvage excavation is to provide conclusive data on the artefact typology, material type and subsurface density/extent.

It is recommended that this be undertaken as a condition of the SSDA approval and prior to construction.

The additional salvage report will be produced following the completion of the salvage excavation and provided as an addendum report.

Recommendation 2 - Surface Collection post-SSDA approval and prior to construction

Following SSDA approval and prior to construction surface collection of the isolated surface artefact IF1 must be undertaken in accordance with the Code of Practice and with the involvement of the Registered Aboriginal Parties.

Isolated Find 01 (IF-1) – GPS coordinates 0295424E, 6253350N

Recommendation 3 - Repatriation or Deposition in Keeping Place

Through consultation with the RAPs a decision will be made as to the destination for the artefacts recovered during both the test excavation and surface collection programs.

Care and Control of Artefacts

Through the ACHA process a determination must be made in consultation with the RAPs the final keeping place of the artefacts collected during the project. All project artefacts will be sorted and packaged in accordance with Australian Museum Standards.

The general options are:

Option 1: Deerubbin LALC enters into a Care and Control agreement and the artefacts are then stored at their designated keeping place (Old Parramatta Gaol).

Option 2: Repatriation of artefacts to 'Country'. Following construction the artefacts would be reburied within the subject area and the location registered on AHIMS.

Option 3: Designation of alternative keeping place such as local museum, Australian Museum or with other RAP group.

Recommendation 4 – Aboriginal Cultural Heritage Induction

It is recommended that induction materials be prepared for inclusion in site inductions for any contractors working at the subject area. The induction material should include an overview of the types of sites to be aware of (i.e. artefact scatters or concentrations of shells that could be middens), obligations under the NPW Act, and the requirements of an archaeological finds' procedure (refer below). This process should be included in the Construction Environmental Management Plan (CEMP) and any site management plans.

The induction material may be paper based, included in any hard copy site management documents; or electronic, such as "PowerPoint" for any face-to-face site inductions.

Recommendation 5 - Archaeological Chance Find Procedure

Although considered highly unlikely, should any archaeological deposits be uncovered during any site works, a procedure must be implemented. The following steps must be carried out:

- 1. All works stop in the vicinity of the find. The find must not be moved 'out of the way' without assessment.
- 2. Site supervisor, or another nominated site representative must contact either the project archaeologist (if relevant) or DPC to contact a suitably qualified archaeologist.
- 3. The nominated archaeologist examines the find, provides a preliminary assessment of significance, records the item and decides on appropriate management, in conjunction with the RAPs for the project. Such management may require further consultation with DPC, preparation of a research design and archaeological investigation/salvage methodology and preparation of AHIMS Site Card.
- 4. Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required, and further archaeological investigation undertaken.
- 5. Reporting may need to be prepared regarding the find and approved management strategies. Any such documentation should be appended to this ACHAR and revised accordingly.
- 6. Works in the vicinity of the find can only recommence upon relevant approvals from DPC.

Recommendation 6 - Human Remains Procedure

In the unlikely event that human remains are uncovered during any site works, the following must be undertaken:

- 1. All works within the vicinity of the find immediately stop.
- 2. Site supervisor or other nominated manager must notify the NSW Police and DPC.
- 3. The find must be assessed by the NSW Police, and may include the assistance of a qualified forensic anthropologist.
- 4. Management recommendations are to be formulated by the Police, DPC and site representatives.
- 5. Works are not to recommence until the find has been appropriately managed.

Recommendation 7 - RAP consultation

A copy of the final ACHAR was provided to all Project RAPs on 30 August 2021. Ongoing consultation with RAPs should occur as the project progresses, to ensure ongoing communication about the project and key milestones, and to ensure the consultation process does not lapse, particularly with regard to consultation should the CFP be enacted.

1. INTRODUCTION

Urbis Pty Ltd (Urbis) has been engaged by The GPT Group (the proponent) to produce an Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 & 784-786 Mamre Road, Kemps Creek (Lots 59 & 60 DP 259135) (hereafter referred as the 'subject area') to accompany the State Significant Development Application (SSDA) for a warehousing and distribution centre within the subject area.

1.1. SITE DESCRIPTION

The subject area is within the City of Penrith Local Government Area (LGA). The subject area covers approximately 330,000 m² and is bounded by Mamre Road and Lot 61 DP 259135 to the west, Lot 1 DP 104958 to the north, Lots 56-58 DP 259135 to the south and Lots 34-37 DP 258949 and Lot 40 DP 708347 to the east. The immediate surrounds comprise predominantly semi-rural properties.

1.2. PROPOSED DEVELOPMENT

The proposed development includes site preparation works, construction and use of five (5) warehouse and distribution buildings, retaining walls, stormwater and associated works, internal road network, associated carparking, signage and landscaping (Figure 3).

The development is proposed to comprise a first stage of works, to be commenced by 2022. The first stage will comprise site preparation works, including bulk earthworks, services and associated landscaping, as well as the construction of two (2) warehouses. Construction of a further three (3) warehouses will be subject to future DAs.

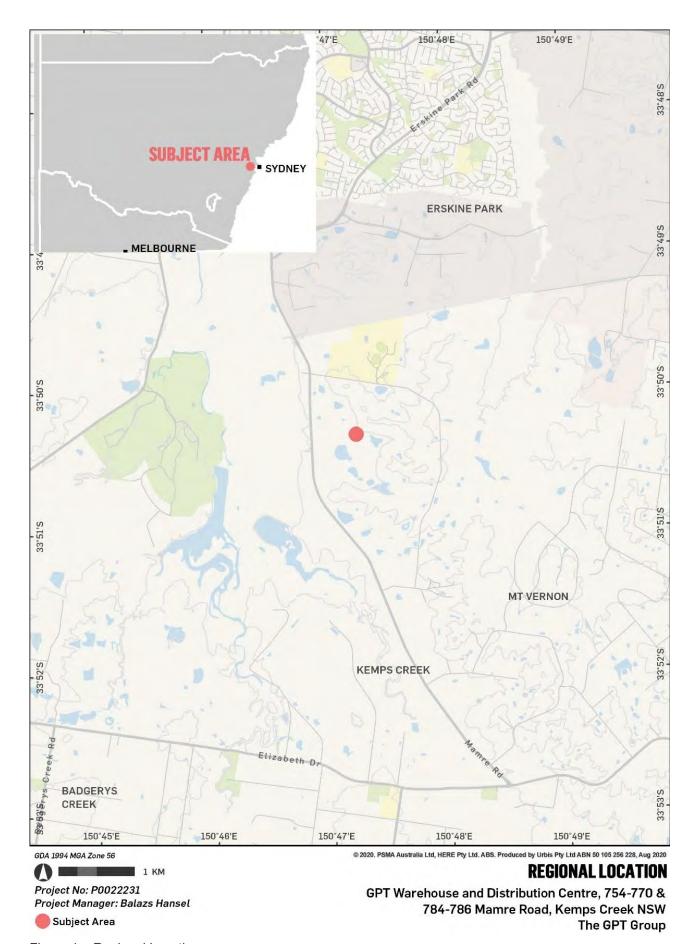


Figure 1 – Regional Location



Figure 2 – Location of the Subject Area



Figure 3 – Proposed SSDA Masterplan Source: GPT Group

1.3. RESPONSE TO SEARS

The ACHAR has been guided by the Secretary's Environmental Assessment Requirements (SEARs) for SSD-10272349.

The SEARs require preparation of an ACHAR in accordance with the *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (DECCW, 2011) and *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW* (OEH, 2010). Any Aboriginal objects recorded as part of the Aboriginal Cultural Heritage Assessment must be documented and notified to the Aboriginal Heritage Information Management System (AHIMS) within Heritage NSW of the Department of Premier and Cabinet.

The specific requirements of the SEARs are identified in Table 1 with the corresponding section of this ACHAR.

Table 1 – SEARs requirements for SSD 10272349 and relevant report sections

Requirement No.	Requirement	Report Section
-	Identify and describe the Aboriginal cultural heritage values that exist across the development and document in an Aboriginal Cultural Heritage Assessment Report (ACHAR)	This report. Section 2 and Section 4
-	Consultation with Aboriginal people must be undertaken and documented in ACHAR	Section 3
-	A description of the impacts on Aboriginal cultural heritage values and associated mitigation measures must be included in the ACHAR.	Sections 5, 6 and 7

1.4. STATUTORY CONTROLS

Management of Aboriginal objects is under the statutory control of the *National Parks and Wildlife Act* 1974 (NPW Act) further regulation of the process is outlined in the *National Parks and Wildlife Regulations* 2009 (NPW Reg). This ACHA has been carried out in accordance to Part 6 of the NPW Act and Part 8A of the NPW Reg. The ACHAR was prepared the statutory guidelines under the NPW Act including:

- Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines).
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010).
- The Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013 (Burra Charter.

The ACHA is to accompany the State Significant Development Application (SSDA) for a warehousing and distribution centre within the subject area. The ACHA is to be carried out in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011)*.

1.4.1. State Environmental Planning Policy (Western Sydney Employment Area) 2009

The subject area is subject to the *State Environmental Planning Policy (Western Sydney Employment Area)* 2009, Schedule 5 of which provides relevant information on locally listed heritage items.

A search of the *State Environmental Planning Policy (Western Sydney Employment Area) 2009* was undertaken on 15 July 2020. The subject area is not listed on the *State Environmental Planning Policy (Western Sydney Employment Area) 2009*, nor are any of the adjoining lots.

1.4.2. NSW State Heritage Register (SHR)

The State Heritage Register (SHR) lists items that have been assessed as being of State heritage significance to New South Wales. Items appearing on the SHR are granted protection under s.60 of the *Heritage Act* 1977 (Heritage Act).

A search of the SHR was completed on 18 December 2020. The search did not identify any heritage or archaeological items within the curtilage or in the vicinity of the subject area.

1.4.3. State Government Agency Conservation (Section 170) Registers

Section 170 of the Heritage Act requires that State Government Agencies establish and maintain a Heritage Conservation Register for heritage items located on land under their control or ownership. Items listed on the s.170 Register are listed on the State Heritage Inventory (SHI) and bound by the regulations of the Heritage Act

A search of the SHI was completed on 18 December 2020. The search did not identify any heritage or archaeological items within the curtilage or in the vicinity of the subject area.

1.4.4. Australian Heritage Database

The Australian Heritage Database contains information about more than 20,000 natural, historic and Indigenous places including: places in the World Heritage List, Places in the National Heritage List, places in the Commonwealth Heritage list; and places in the Register of the National Estate (non-statutory). The list also includes places under consideration, or that may have been considered for any one of these lists.

A search of the Australian Heritage Database was completed on 18 December 2020. The search did not identify any heritage or archaeological items within the curtilage or in the vicinity of the subject area.

1.4.5. Penrith Development Control Plan 2014

As legislated by the EP & A Act, each LGA is legally obliged to produce a Development Control Plan (DCP). Not all LGAs provide information regarding Aboriginal cultural heritage and specific development controls to protect Aboriginal cultural heritage.

Section 7.2 of the Penrith Development Control Plan 2014 addresses Aboriginal cultural heritage. This section identifies the following objective:

To preserve items and sites of Aboriginal archaeological significance located within the City of Penrith.

The following controls relating to Aboriginal cultural heritage are stated in Section 7.2C of the Penrith DCP 2014:

- 1. If the development, including subdivision, but not strata subdivision, is on land identified as potentially archaeologically sensitive, an archaeological investigation is required with the development application. The Office of Environment and Heritage should be contacted for advice on survey needs and requirements.
- 2. Despite (a) above, an archaeological assessment is required if the site area is 5 hectares or more. The archaeological assessment should determine whether or not Aboriginal archaeological resources are present on the site, and where appropriate, identify management principles to be implemented.
- 3. The requirements stated in (a) and (b) above will not apply to developments where there is no: a) disturbance of the soil, or b) construction works on the land. For the purposes of this section, any internal or external works to an existing building is not deemed to be construction work.

The present report is prepared to determine whether or not Aboriginal archaeological resources are present within the subject area and, if appropriate, identify management principles to be implemented, in fulfilment of the controls of Section 7.2C of the Penrith DCP 2014.

1.4.6. Mamre Road Precinct – Draft Development Control Plan (November 2020)

The Objectives of the Mamre Road Precinct DCP are:

- (a) To manage Aboriginal heritage values to ensure enduring conservation outcomes.
- (b) To ensure areas identified as archaeologically or culturally significant are managed appropriately.

The Controls of the draft DCP are:

- 1. Sites of known Aboriginal Heritage and areas of high and moderate—high Aboriginal archaeological potential are identified (Figure 12 below).
- 2. In order to ensure that a person undertaking any development or activities on land does not harm Aboriginal objects, development applications must identify any areas of Aboriginal heritage value that are within or adjoining the area of the proposed development, including any areas within the development site that are to be retained and protected (and identify the management protocols for these).
- 3. Any ground disturbance proposed in areas where cultural material has not been identified and/or is considered of low potential to occur should be subject to a due diligence investigation in accordance with DPIE and/or best practice guidelines (e.g. Due Diligence Code of Practise for the Protection of Aboriginal Objects in NSW). The findings of the due diligence should guide future assessment and approval requirements for the activity (if any).
- 4. Developments or other activities that will impact on Aboriginal heritage may require consent from the Heritage NSW, DCP under the National Parks and Wildlife Act 1974 (NPW Act) and consultation with the relevant Aboriginal communities.
- 5. Any development application that is within or adjacent to land that contains a known Aboriginal cultural heritage site, as indicated on Figure 5, must consider and comply with the requirements of the NPW Act. An Aboriginal Heritage Impact Permit (AHIP) issued under Part 6 of the NPW Act is required for any works which directly affect these sites.
- 6. Where the necessary consents have already been obtained from Heritage NSW, the development application must demonstrate that the development will be undertaken in accordance with any requirements of that consent.

Notes: Applicants should consult with Heritage NSW to determine requirements for assessment and approval where developments or other works are to be carried out on or near Aboriginal heritage sites. Council or Heritage NSW may require additional investigations to be undertaken as part of a development application to confirm the presence of Aboriginal cultural heritage on the land.

Where works uncover items that may be of Aboriginal cultural heritage, the developer is to consult with Heritage NSW to determine an appropriate course of action.

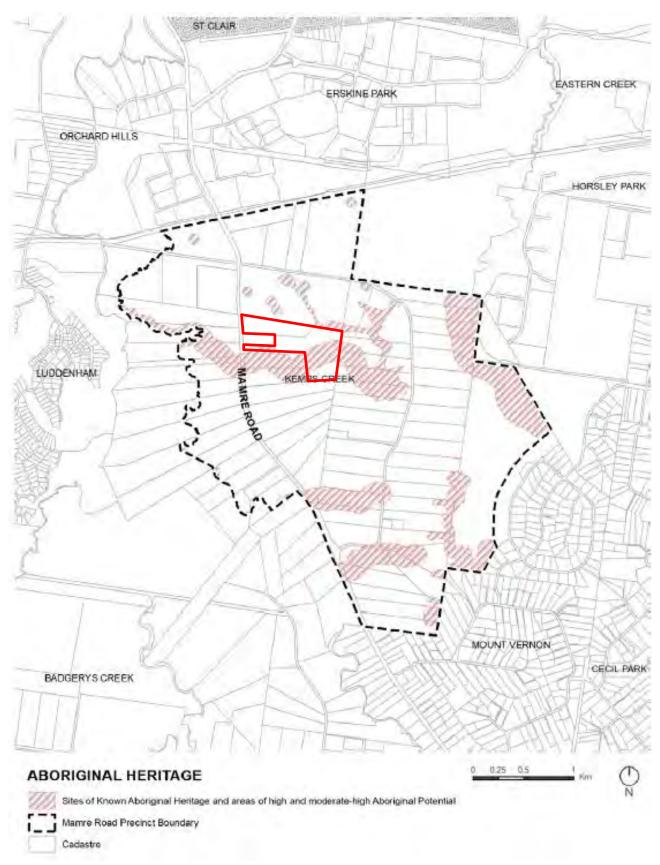


Figure 4 – Reproduction of figure showing areas of high and moderate Aboriginal archaeological potential within the Mamre Road Precinct. Subject area red polygon.

Source: Mamre Road Precinct Draft Development Control Plan 2020



Figure 5 – Historical Heritage Items in the vicinity of the Subject Area.

1.5. **OBJECTIVES**

The objectives of this ACHAR are to:

- Investigate the presence, or absence, of Aboriginal objects and/or places within and in close proximity to the subject area, and whether those objects and/or places would be impacted by the proposed development.
- Investigate the presence, or absence, of any landscape features that may have the potential to contain Aboriginal objects and/or sites and whether those objects and/or sites would be impacted by the proposed development.
- Document the nature, extent and significance of any Aboriginal objects and/or place and sites that may located within the subject area.
- Document consultation with the Registered Aboriginal Parties (RAPs) with the aim to identify any spiritual, traditional, historical or contemporary associations or attachments to the subject area and any Aboriginal objects and/or places that might be identified within the subject area.
- Provide management strategies for any identified Aboriginal objects and/or places or cultural heritage values.
- Provide recommendations for the implementation of the identified management strategies.
- Prepare a final Aboriginal Cultural Heritage Assessment Report (ACHAR) to be accompany SSD-10272349.

1.6. **AUTHORSHIP**

This ACHA has been prepared by Aaron Olsen, Urbis Assistant Archaeologist, Alexandra Ribeny, Urbis Consultant Archaeologist and Andrew Crisp, Urbis Senior Archaeologist, with review and quality control undertaken by Balazs Hansel, Urbis Associate Director Archaeology.

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ARCHAEOLOGICAL ASSESSMENT

ABORIGINAL ARCHAEOLOGICAL CONTEXT 2.1.

This section comprises the summary of the archaeological background research for Aboriginal cultural heritage resources. This includes the search of the Aboriginal Heritage Information Management System (AHIMS) previous archaeological investigations pertinent to the subject area and broader region.

2.1.1. Regional Archaeological Context

The archaeological record provides evidence of the long occupation of Aboriginal people in Australia and the Sydney region. The oldest generally accepted date for a site in the Sydney basis is 17,800 years before present (BP), recorded in a rock shelter at Shaw's Creek (Nanson et al 1987), near Castlereagh (approximately 25km north-west of the present subject area). Radiocarbon dating of charcoal samples from sand sheet contexts in proximity to the Cooks River have suggest occupation as early as 40,000 years BP (JMCHM 2005). Older occupation sites along the now submerged coastline would have been flooded around 10,000 years BP, with subsequent occupation concentrating along the current coastlines and Cumberland Plain (Attenbrow 2010).

Due to the absence of written records, it is difficult to infer what Aboriginal life was like prior to the arrival of European settlers. Much of our understanding of Aboriginal life pre-colonisation is informed by the histories documented in the late 18th and early 19th century by European observers. These histories provide an inherently biased interpretation of Aboriginal life both from the perspective of the observer but also through the act of observation. The social functions, activities and rituals recorded by Europeans may have been impacted by the Observer Effect, also known as the Hawthorne Effect. The Observer/Hawthorne Effect essentially states that individuals will modify their behaviour in response to their awareness of being observed. With this in mind, by comparing/contrasting these early observations with archaeological evidence is possible to establish a general understanding of the customs, social structure, languages, beliefs and general of the Aboriginal inhabitants of the Sydney Basin (Attenbrow 2010).

Given the early contact with Aboriginal tribes in the Sydney region, more is known about these groups than those which inhabited regional areas. At the time of European contact, it is believed that the Darug (also spelt as Dharug or Daruk) people inhabited areas from the mouth of the Hawkesbury River west to Mount Victoria, taking in areas around Campbelltown, Liverpool, Camden, Penrith and Windsor (Tindale, 1974). Included within these territories is Kemps Creek and the present subject area. The Darug are considered to have been a woodland people whose diet consisted primarily of hunted land animals, such as kangaroos and emus, and also yams and other roots (Flynn 1997; Tench 1791).

The archaeological record is limited to materials and objects that were able to withstand degradation and decay. As a result, the most common type of Aboriginal objects remaining in the archaeological record are stone artefacts. Archaeological analyses of these artefacts in their contexts have provided the basis for the interpretation of change in material culture over time. Technologies used for making tools changed, along with preference of raw material. Different types of tools appeared at certain times, for example ground stone hatchets are first observed in the archaeological record around 4,000 BP in the Sydney region (Attenbrow 2010:102). The archaeological record attests to the use of ground edge stone axes by the Darug people in general vicinity of the present subject area (e.g. AHIMS ID# 45-5-5186).

The Aboriginal population in the greater Sydney region at the time of European contact is estimated to have been between around 4000 and 8000 people. After European contact, Aboriginal people of the Cumberland Plain continued to manufacture tools, sometimes with new materials such as bottle glass or ceramics. There are several sites in Western Sydney where flaked glass has been recorded, for example at Prospect (Ngara Consulting 2003).

Based on the above background, it is possible that similar evidence of Aboriginal occupation is present within original and/or intact topsoils throughout the Cumberland plain, including within the present subject area.

Kohen, J. L. 1985, an Archaeological Survey of Industrial Land in the City of Blacktown. Report for Blacktown City Council

This assessment involve an analysis of archaeological surveys of industrial zoned land around the Blacktown City Council Area. Kohen acknowledged a distinct absence of archaeological information for the area at the time owing to limited interest in the Cumberland Plain prior to the introduction of legislative requirements for archaeological assessments in developments. Kohen established that the vast majority of Aboriginal sites within the area that demonstrate intensive occupation are located along creeks and streams which eventuate at the Hawkesbury River, or on ridges sub-parallel to these waterways. Kohen also stated

that extremely poor surface visibility factors inhibit the identification of artefacts, with sites almost always located in areas of erosion or exposure usually associated with creeks or disturbance. This concept has informed subsequent predictive models for the wider Cumberland Plain. Kohen argued that site density reflected the activity undertaken, with less dense sites likely reflective of one-off activities such as of tool repair.

Smith, L., 1989. Liverpool Release Areas: Archaeological Site Survey and Planning Study **Liverpool Survey Report**

Archaeological assessment of the Liverpool Release Areas. In this assessment Smith aimed to establish a spatial predictive model for the southern Cumberland Plain and to test whether the conclusions drawn for the northern Cumberland Plain apply. The 5 day survey program identified 26 previously unrecorded archaeological sites, with 19 scatters, 5 isolated finds and 2 scarred trees. Smith hypothesised that artefacts would be located within 50m of water sources and in lower densities than in the northern Cumberland Plain. Smith effectively surveyed 0.63% of the subject area on foot, once visibility conditions were accounted for (incidentally, Smith viewed visibility conditions as a primary factor in the locating of archaeological sites). Smith determined artefact scatters and isolated finds were located on almost all topographic features within the study area, with the exception of slopes. Smith found that 62% of sites occurred within 50m of a water source, with 53% within 10m and only 2 sites located at a distance greater than 100m. This assessment informed early predictive models for the Cumberland Plain and was formative in the development of Jo McDonald's (1992) predictive model widely applied today.

Jo McDonald Cultural Heritage Management (JMCHM), 1992. Archaeological Investigation of Project 12603, Cowpasture Rd, Hoxton Park, NSW Hoxton Park Archaeological Report

Archaeological assessment intended to investigate the archaeological potential within Precinct 4 of Hoxton Park Stage II Release Area, establish the archaeological significance of the site and determine any threats to areas of archaeological significance proposed by the development. This assessment was also used as an opportunity to test the predictive model established by Smith and Kohen. This assessment resulted in the recording of 147 artefacts in total, with silcrete the dominant raw material. The spatial location and density of artefacts recovered from these excavations, with highest density approximately 80-90m from the creek on higher ground, disputed previous claims about spatial distribution of sites within the Cumberland Plain region and led to the development of the currently accepted predictive model.

Australian Museum Business Services (AMBS), 1997. Cumberland Plain Regional Archaeological Study: Stage 1

In this assessment, AMBS identified their aims as to examine and assess the concept of representativeness for Aboriginal sites on the Cumberland Plain, to critically assess the planning framework and to produce quidelines on the recognition of silcrete artefacts. AMBS argued that the earlier developed predictive models were not adequately tested and further that there has been a serious issue with the identification of silcrete artefacts – in that items identified as silcrete artefacts at Plumpton Ridge were instead naturally fractured silcrete gravels. AMBS argue for a more scientific and analytical method of analysis and site predictive modelling, with the valid acknowledgement that lack of scientific method complicates the comparison of results and information. AMBS also argue that the nature of the conservation framework - where sites considered representative are afforded higher protections - is problematic due to subjectivity, with this issue also addressed through creating a more scientific and comparable method of analysis. AMBS advocate for more interpretative research designs rather than descriptive predictive models in archaeological approaches to the Cumberland Plain.

2.1.2. Previous Aboriginal archaeological investigations

Previous archaeological investigations may provide invaluable information on the spatial distribution, nature and extent of archaeological resources in a given area. While there are no readily available assessments of the subject area itself, there have been numerous archaeological investigations carried out in and around Kemps Creek. A summary of findings of the most pertinent to the subject area is provided in Table 3 below.

EMM Consulting (2020) - Mamre Road Precinct Aboriginal Heritage Study

EMM Consulting Pty Ltd (EMM) was engaged by the Department of Planning, Industry and Environment (DPIE) to prepare an Aboriginal Heritage Study (AHS) for the Mamre Road Precinct (Figure 6), within Western Sydney Employment Area (WSEA). The AHS will inform planning for the development of the Mamre Rd Precinct based on the final structure plan and provide inputs to the Development Control Plan (DCP) being prepared for the whole precinct. The AHS has been undertaken in broad accordance with DPIE Aboriginal heritage guidelines with some modifications to meet project timeframes and to more suitably address the early planning nature of the project. The AHS is currently on public exhibition.

The desktop and field survey investigations (Figure 8) for the EMM (2020) AHS demonstrated that the precinct is comparable with the wider cultural landscape of the Cumberland Plain. Archaeological evidence suggests that people utilised a wide range of resources across the region, and especially the silcrete raw materials from the Blacktown, Riverstone and Plumpton Ridge areas. These materials were moved along the major river systems across much of the Sydney Basin. Foci of occupation also appears to be primarily associated with the major river systems, although a transient use of all environments was known to occur. While a range of archaeological sites types are found across the Cumberland Plain reflecting these activities, much of the landscape constrains cultural material to stone artefacts located on the surface and/or in the upper soil profile. With specific reference to the study area, it is situated between two of the major river systems connecting the northern and southern parts of the Cumberland Plain, including Ropes Creek, Kemps Creek and South Creek. Previous investigations both within and near the study area confirm these wider models, which demonstrate a focus of past occupation along these waterways, and especially on elevated land near these resources.

A review of previously recorded sites in the region, show that 20 are documented within the Mamre Road Precinct. Of these, nine are erroneously located and situated in Erskine Park to the north, leaving 11 remaining in the Mamre Road Precinct (Figure 7). These are primarily situated along the edges of the main creek systems and/or on a ridgeline in the north of the Mamre Road Precinct (within the current subject area). With one exception, #45-5-5188 - a high density artefact scatter on South Creek - the sites are all characterised as isolated objects and/or low-density artefact scatters (usually consisting of <10 artefacts). Excavations of several of these suggest that they are primarily found in shallow duplex and/or fabric contrast soil profiles commonly <30 cm deep, with rare examples extending to 60-80 cm.

EMM conducted a limited field investigation (which did not include the current subject area) due to access restrictions, identified a further two previously unidentified sites, MPR-01 (#45-5-0316) and MPR-02 (#45-5-0315), both consisting of low numbers of artefacts in the vicinity of Kemps Creek and Ropes Creek, respectively, and validating some of the previously documented sites.

In addition to the identified Aboriginal sites and objects, areas of archaeological potential were also identified. These included a 200m buffer around Ropes Creek, and a 100m buffer around Kemps Creek, South Creek and second order tributaries - the reduction in these latter areas relating to the local topography and significant disturbance in these locales. In all cases, it is considered that elevations, such as levees, terraces, etc, have a greater potential within these buffers for significant cultural material to be present (Figure 9). In addition, a number of ridgelines were also identified as having potential based on the AHS' findings and Aboriginal community feedback.

Based on the findings of the EMM (2020) AHS, the following recommendations were made:

- The exhibited structure plan does not require amendment based on the findings of this AHS. While cultural materials are identified within the study area and may be harmed as a result of the rezoning, areas identified as containing significant archaeological and cultural value would be largely unaffected.
- The Development Control Plan developed from the structure plan should include appropriate management requirements for Aboriginal heritage based on the findings of this study. These should include:
 - (i) Any ground disturbance proposed in greas where cultural material has not been identified and/or is considered of low potential to occur should be subject to a due diligence investigation in accordance with DPIE and/or best practice guidelines (e.g. Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW). The findings of the due diligence should guide future assessment and approval requirements for the activity (if any) (Figure 10).
 - (ii) Any ground disturbance proposed in areas where cultural material has been identified and/or is considered to have potential for them to occur (the current subject area) should be subject to an Aboriginal cultural heritage assessment or equivalent in accordance with DPIE and/or best practice guidelines (eg Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in

- NSW). The findings of the assessment should guide future assessment and approval requirements for the activity (if any) (Figure 10).
- (iii) Any activity should undertake interpretive, educational and/or recognition opportunities to promote local Aboriginal culture, society and people.
- This AHS identified several Aboriginal objects and sites that are erroneously positioned within the Mamre Road Precinct in the DPIE Aboriginal Heritage Information Management System (AHIMS) database (45-5-3028 - 45-5-3036 inclusive). The AHIMS database should be notified and these sites correctly positioned to avoid future management issues for the precinct.
- If re-location of any element of the re-zoning, land release and/or development are proposed outside the area assessed in this study, further assessment of the additional area(s) should be undertaken to identify and appropriately manage Aboriginal objects/sites/places that may be in this additional area(s).
- A copy of the EMM (2020) report should be lodged with DPIE's AHIMS database, and each of the RAPs.

Of relevance to the proponent the sites erroneously registered within the current subject area are presented in Table 4 below.

Table 2 – AHIMS sites erroneously recorded within the current subject area.

AHIMS ID#	Site Name	Location	Site Type	Description
45-5-3029	EPTA4	Lot 60 DP 259135	Artefact scatter	This site has been erroneously positioned within AHIMS. Located ~1.5-2 km north of the registered AHIMS location, on land near Lenore Land at Erskine Park, outside the current project area (Navin Officer 2005).
45-5-3031	EPTA6	Lot 60 DP 259135	Artefact scatter	This site has been erroneously positioned within AHIMS. Located ~1.5-2 km north of the registered AHIMS location, on land near Lenore Land at Erskine Park, outside the current project area (Navin Officer 2005).
45-5-3034	EP-I 1	Lot 59 DP259135	Artefact site (undefined)	There is little data available in relation to this site. However, it is listed as an isolated object on an Aboriginal Heritage Impact Permit associated with 45-5-3028 to 45-5-3033 inclusive. As such, it is considered likely to be erroneously positioned and is situated on land within the Erskine Park region and/or destroyed.
45-5-3035	EP-I 2	Lot 60 DP259135	Artefact site (undefined)	There is little data available in relation to this site. However, it is listed as an isolated object on an Aboriginal Heritage Impact Permit associated with 45-5-3028 to 45-5-3033 inclusive. As such, it is considered likely to be erroneously positioned and is situated on land within the Erskine Park region and/or destroyed.

Source: Partial reproduction of Table 5.2 (EMM 2020)

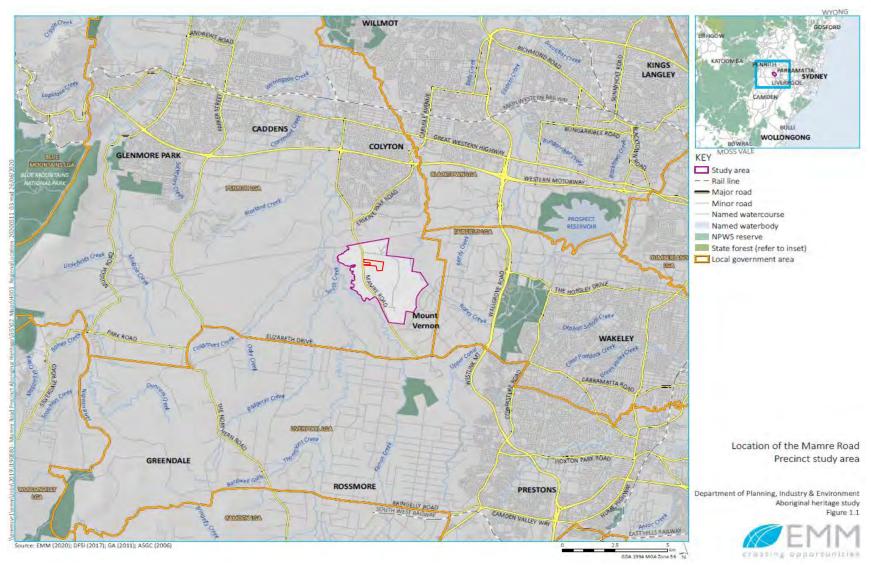


Figure 6 – EMM (2020) figure showing the location of the Mamre Road Precinct with the current subject area in red.

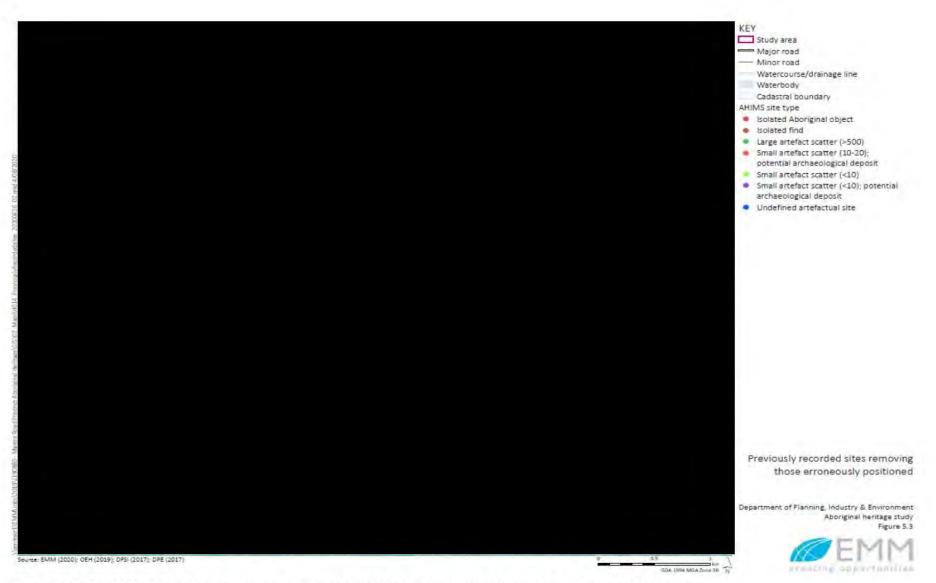


Figure 7 - EMM (2020) figure with erroneously positioned AHIMS sites removed, the current subject area is in red.

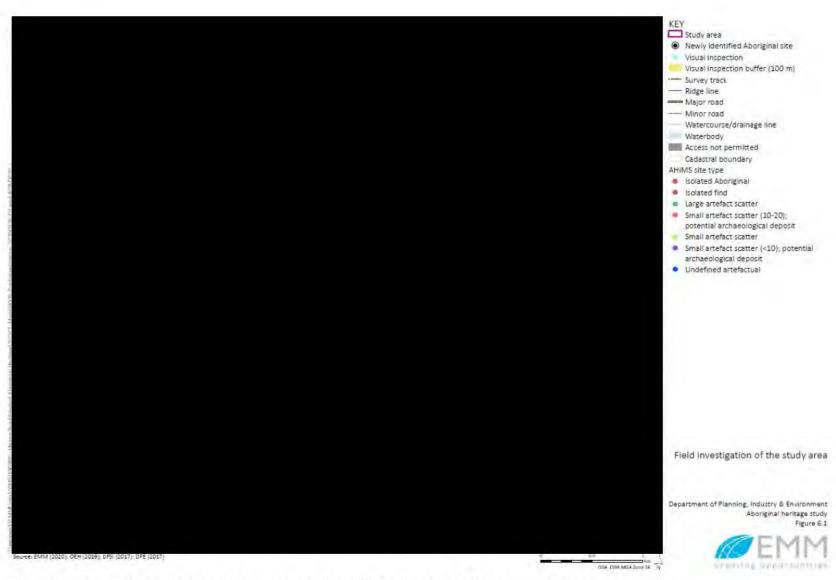


Figure 8 - EMM (2020) figure showing the location of the EMM field inspection, the current subject area is in red.

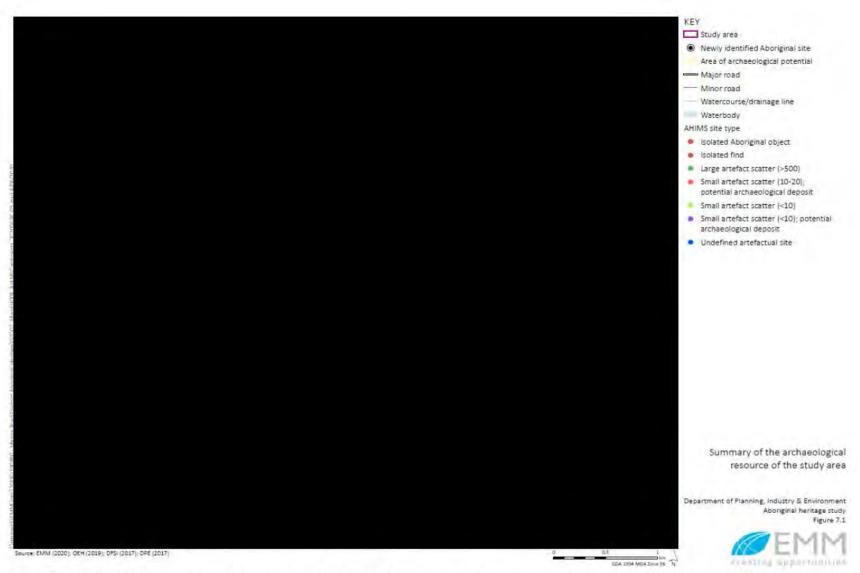


Figure 9 - EMM (2020) figure showing the summary of Aboriginal archaeological resources within the Mamre Road Precinct. The current subject area is in red.

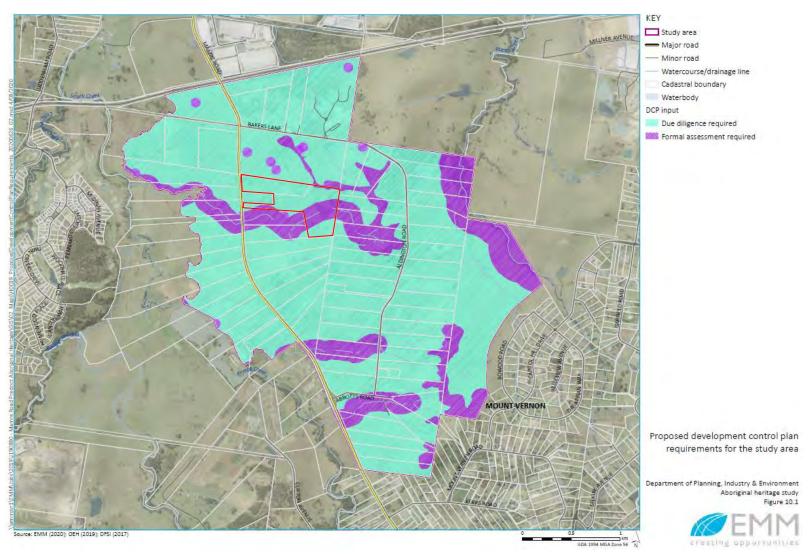


Figure 10 - EMM (2020) figure showing the proposed DCP Aboriginal archaeological requirements within the Mamre Road Precinct. The current subject area is in red.

2.1.2.1. Previous Aboriginal Archaeological Assessments

Table 3 – Summary of previous Aboriginal archaeological assessments

Report	Summary	Relevance to Subject Area
Biosis 2019. First Estate Access Road: Aboriginal Cultural Heritage Due Diligence Assessment, Final Report.	Aboriginal due diligence for 657-769 Mamre Road, Kemps Creek, approximately 870m north of the present subject area. The land use history of the site is consistent with that of the current subject area, being a semirural property, cleared of the majority of native vegetation and with a number of medium to large dams and low density residential and farm structures. Site surveys identified two artefact scatters and an isolated find within similar exposures to that found within the current subject area (associated with dams and similar surface disturbances). Three areas of archaeological potential were also identified in the western portion of the study area adjacent to South Creek and the north-eastern portion of the study area across a low rise adjacent to an open depression. Test excavations identified subsurface deposits in all three areas of potential, including a number of backed artefacts (dated to approx. 4,000-1,000 years before present). Archaeological assemblages were found a significant distance (over 500 m) from South Creek and high density subsurface archaeological deposits were associated with raised ground in proximity to a perennial water source.	 In the vicinity of the present subject area. Surface archaeological expression may not correlate with subsurface deposits. Archaeological deposits may be retained in land with a history of agricultural use. Test excavation may be required to determine the level, significance and extent of archaeological deposits. Archaeological deposits may be associated with waterways and elevated ground.
Biosis 2016. Mamre West Precinct Orchard Hills: Aboriginal Cultural Heritage Assessment Report.	Aboriginal Cultural Heritage Assessment for the Mamre West Precinct, Orchard Hills, approximately 1.1km north of the present subject area. A survey identified a new artefact scatter and areas of archaeological potential. Subsequent test excavation identified four artefact scatters, consisting of flakes, flaked pieces and cores. The primary raw material was silcrete, with a lesser amount of chert. Elevated portions of the area in close proximity to water sources were considered to have high cultural significance.	 In the vicinity of the present subject area. Aboriginal objects associated with elevated ground and waterways. Silcrete identified as a common raw material in the area.

Dominic Steele Consulting Archaeology (DSCA) 2010.

Aboriginal and non-Aboriginal Cultural Heritage Impact Assessment, LOGOS Kemps Creek Logistics Project.

Dominic Steel Consulting Archaeology (DSCA) prepared a combined Aboriginal and non-Aboriginal Cultural Heritage Impact Assessment for PJEP Environmental Planning on Behalf of LOGOS Property for a proposed future industrial development of an approximate 52 ha parcel of land (Lot 1 DP 104958) located at 708 Mamre Road, Kemps Creek (the current subject area). The assessment was in response to the issued Department of Planning Director-General's Requirements (DGR's) for the site.

The conclusions of the Aboriginal assessment were:

- Prior to the investigation there were no previously documented sites within the study area.
- The coordinates for a number of AHIMS sites incorrectly placed them within the subject area but were confirmed to be located to the north and beyond the subject area.
- A small number of isolated finds and open scamp sites were identified in exposures within the subject area (45-5-4102, 45-5-4103, 45-5-4104, 45-5-4105).
- The archaeological potential associated with the four identified artefact sites was considered low by DSCA despite the statement "...it may be expected that further artefacts may occur in the locality, it is unlikely that they will be in situ but would rather be identified in eroded and/or disturbed recovery contexts."
- · A tree within the subject area was noted by Aboriginal stakeholders as being a possible scarred tree. Independent advice provided by a qualified arborist suggests the tree is highly unlikely to display Aboriginal scarification on the basis maximum age of the tree (160 years old), the age of the scar (up to 50 years old) and the frequency of wounds of this shape on similar tree specimens.
- Archaeological investigations within the catchment between Kemps and Ropes Creek have revealed low-density distributions of Flaked stone artefacts.

- Adjacent the present subject area.
- The contemporary approach to Aboriginal Cultural Heritage Assessments is more robust and conservative than assessments such as that undertaken by DSCA (2010).
- The assessment by DSCA (2010) failed to appropriately address the Aboriginal archaeological heritage constraints within the subject area. This is a direct result of the legislative framework around Aboriginal sites that archaeological investigations must address are artefact based rather than context/disturbance based.
- Four separate surface archaeological sites were identified in addition to the statement that further subsurface assemblages may be present within the site.
- Based on the DSCA report (2010) Urbis recommends that subsurface archaeological investigation is warranted to determine the extent and nature of the archaeological assemblage within the subject area.

DSCA 2004. Aboriginal Heritage Conservation Action Plan, Application for a S90 Heritage Impact Permit Consent with Salvage & Collection, Twin Creeks Estate, Luddenham Road, Luddenham, New South Wales.	Aboriginal Heritage Conservation Action Plan and application for s.90 Heritage Impact Permit for Twin Creeks Estate, Ludenham Road, Luddenham. This assessment involved salvage and collection of previously identified sites. Different conservation zones were identified on the basis of archaeological resources and proposed works/level of impact. Within Zone A, for example, where proposed impact was low, conservation measures involved the construction of temporary barriers, with conservation of original landform and existing vegetation. In other areas, where impact would be higher (for example in Zones D and E), conservation measures included the collection of artefacts.	 Approximately 3.5km north-west of the present subject area. Identified zones of conservation on the basis of resource and level of impact. Proposed the retention of landform and vegetation in high-sensitivity areas.
Appleton, J 2002. The archaeological investigation of Lot 2, DP 120673, the site of a proposed new clay and shale extraction area, Old Walgrove Road, Horsley Park, west of Sydney, NSW.	Archaeological assessment involving survey at Old Walgrove Road, Horsley Park, approximately 2.5km north east of the current subject area. The study identified two previously unknown sites, both isolated stone artefacts, and a PAD associated with one of the sites. Two areas were also identified as Potentially Archaeological Sensitive and further investigation of these areas was recommended.	 Isolated artefact sites may occur near permanent or semi-permanent creeks. Sites may survive in disturbed contexts.
Jo McDonald Cultural Heritage Management 2000. Archaeological Survey for Aboriginal Sites: Proposed Light Industrial Subdivision, "Austral Site" – Mamre Road, Erskine Park, NSW.	Archaeological survey report for the "Austral Brick Company" site, approximately 1km north of the present subject area. The survey identified six new artefact scatters and three isolated artefacts within or adjacent to the subject area. All sites were within 150m of a waterway and were dominated by silcrete artefacts. Aboriginal objects were found in areas of disturbance due to vegetation clearance, erosion, vehicle activity, livestock activity and bulldozing for dam construction.	 In the vicinity of the present subject area. Aboriginal objects are frequently associated with waterways. Silcrete is the dominant raw materia used for stone artefacts in the area. Sites may survive in disturbed contexts.
DSCA 1999. Archaeological Survey Report for Land Between Luddenham &	Survey report for a 350ha study area generally bounded by South Creek and Luddenham Road, but also extending to the east of South Creek within approximately 1km of the present subject area. The survey identified five previously unidentified attefact scatters and one	In the vicinity of the present subject area. Aboriginal objects are frequently associated with waterways and high

The survey identified five previously unidentified artefact scatters and one

isolated find. The sites were generally located in association with

associated with waterways and high

ground.

Mamre Roads, Luddenham, New South Wales	waterways and ridges. The artefacts were dominated by silcrete, with chert, mudstone and quartz and quartzite also present. Aboriginal objects were found in areas of disturbance due to animal and vehicle traffic and erosion. Aboriginal objects were found in areas of disturbance due to animal and vehicle traffic.	 Silcrete is the dominant raw material used for stone artefacts in the area. Sites may survive in disturbed contexts.
Dallas, M 1988. Preliminary archaeological study: Luddenham Equestrian Centre, Luddenham Road, Erskine Park, NSW	Archaeological report for a 354ha study area in Erskine Park bounded by South Creek and Luddenham Road, approximately 1.5km west of the present subject area. A survey identified 12 artefact scatter sites located within the study area. The sites were located in association with Cosgrove Creek or South Creek, or on the ridge to the west of South Creek. The artefacts were dominated by silcrete, with chert, mudstone and quartz and quartzite also present. Aboriginal objects were found in areas of disturbance due to animal and vehicle traffic and erosion.	 In the vicinity of the present subject area. Aboriginal objects are frequently associated with waterways and high ground. Silcrete is the dominant raw material used for stone artefacts in the area. Sites may survive in disturbed contexts.

2.1.3. Aboriginal Heritage Information Management System

The AHIMS database comprises previously registered Aboriginal archaeological objects and cultural heritage places in NSW and it is managed by the Department of Planning, Industry and Environment (DPIE) under Section 90Q of the National Parks and Wildlife Act 1974 (NPW Act), Aboriginal objects are the official terminology in AHIMS for Aboriginal archaeological sites. From this point in the assessment forward the terms of 'Aboriginal sites', 'AHIMS sites' or 'sites' will be used to describe the nature and spatial distribution of archaeological resources in relation to the subject area.

The Extensive search of the AHIMS was carried out on the 2nd July 2020 (Client Service ID: 517484) for an area of approximately 4km by 4km. Altogether 79 Aboriginal objects and no Aboriginal places were identified within the Extensive AHIMS search area. Figure 15 identifies the spatial location of sites across the search area.

There are four registered Aboriginal sites (AHIMS ID# 45-5-3029, 45-5-3031, 45-5-3034 and 45-5-3035) within the subject area, all of which are listed as 'valid' in the AHIMS report (Figure 15). There are also four registered Aboriginal sites (AHIMS ID# 45-5-3030, 45-5-3036, 45-5-4102 and 45-5-5186) in close proximity to the subject area, all of which are listed as 'valid' in the AHIMS report (Figure 15). These sites are discussed in detail below.

AHIMS ID# 45-5-3029, 3030, 3031, 3034, 3035 & 3036

AHIMS ID# 45-5-3029 (EPTA4), 45-5-3030 (EPTA5) and 45-5-3031 (EPTA6), 45-5-3034 (EP-I 1), 45-5-3035 (EP-1 2) or 45-5-3036 (EP-1 3) were all recorded by Navin Officer Heritage Consultants Pty Ltd. According to the AHIMS report, they are located within the subject area or within Lot 1 DP 104958 immediately to north of the subject area (Figure 15).

The site cards for AHIMS ID# 45-5-3029, 45-5-3030 and 45-5-3031 indicate that they are artefact scatters. No site cards or Aboriginal heritage reports are available through the AHIMS website for AHIMS ID#45-5-3034, 45-5-3035 or 45-5-3036. Communication via email with David Gordon, Senior Heritage Information Officer (Aboriginal) with the NSW Department of Premier and Cabinet, has established the following regarding the missing AHIMS site data:

"The electronic record for these cards show they were completed in 2005. Back at that time it was common that sites were recorded with little or no information as to create site numbers in AHIMS for the production of Permits or the destruction of those sites. This is the case in this request." (David Gordon pers. comms. 2019).

Each of the six sites is subject to a Section 90 'Consent to carry out the destruction of an Aboriginal object/place' (Consent #2188). Consent #2188 was issued to CSR Limited for the then proposed industrial development of 'CSR Lands, Erskine Park' (Figure 11) dated 23rd August 2005. Consent #2188 indicates that AHIMS ID#45-5-3034 (EP-I 1), 45-5-3035 (EP-I 2) or 45-5-3036 (EP-I 3) are isolated finds.

The co-ordinates of the six sites indicated in the AHIMS report match the co-ordinates recorded in Consent #2188. However, a map of the CSR land in Erskine Park for which Consent #2188 was requested indicate that it is approximately 1km north of the present subject area, placing the six sites well-outside the subject area. A report produced by Dominic Steel Consulting Archaeology (DSCA 2010, p. 48-49) notes the discrepancy and concludes that the co-ordinates of the six sites are registered incorrectly with AHIMS:

Following a subsequent review of all DECCW AHIMS information that was gathered in May and June 2010, it became apparent that all of these sites noted above had been recorded by Navin Officer Heritage Consultants during ongoing (and various) works undertaken during

This consultancy firm was subsequently contacted by DSCA in early June 2010 to best determine the nature of these previous Aboriginal site recordings and their location.

This revealed that the site coordinates were in error, and in fact related to sites previously recorded during archaeological excavation works undertaken to the north of the Sydney Water pipeline and were therefore located a kilometre or so north of the LOGOS Estate site (current subject area).

Based on the information available, it is clear that the coordinates of AHIMS ID# 45-5-3029 (EPTA4), 45-5-3030 (EPTA5), 45-5-3031 (EPTA6), 45-5-3034 (EP-I 1), 45-5-3035 (EP-I 2) and 45-5-3036 (EP-I 3) are incorrectly registered. These six sites fall within the CSR lands indicated in Figure 11, approximately 1km

north of the present subject area. Accordingly, there are no correctly recorded Aboriginal sites within the subject area. The corrected site locations are indicated in Figure 15.

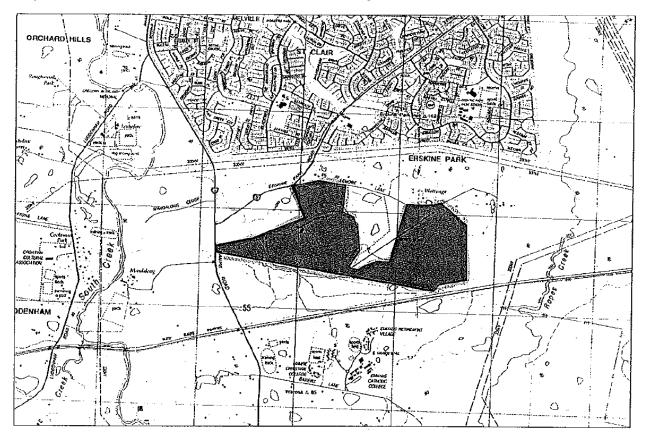


Figure 11 - Erskine Park CSR lands for which Section 90 Consent to Destroy #2188 was requested (dark polygon). Source: Consent #2188

AHIMS ID# 45-5-4102

AHIMS ID# 45-5-4102 is identified as an isolated find and has been given the site name 'Kemps Creek IF1'. The AHIMS report indicates that this site is 'valid'. The site comprises a single mottled grey quartzite flaked piece (16mm x 8mm x 4mm) on the bank of a small agricultural dam. AHIMS ID# 45-5-4102 is located outside the subject area, in the south-eastern corner of 708 Mamre Road, Lot 1 DP 104958 (Figure 15).

AHIMS ID# 45-5-5186

AHIMS ID# 45-5-5186 is identified as an artefact scatter with an associated potential archaeological deposit (PAD) and has been given the site name 'Mamre Road Artefact Scatter 1901 (MAM AS1901)'. The AHIMS report indicates that this site is 'valid'. The artefact scatter comprises a ground edge axe, nine silcrete flakes, a mudstone flake, a quartzite flake and a chert flake. The artefacts were eroding out of a gentle slope on the edge of a dam. The site card notes that there is potential for further artefacts to be uncovered in the surrounds and subsurface.

The artefact scatter is located outside the subject area, at the rear of 788-804 Mamre Road, Lot 58 DP 259135 (Figure 15). The PAD encompasses two separate areas within Lots 56, 57 and 58 DP 259135, both of which are abutting the boundary of the subject area (Figure 12 and Figure 15). The PAD is located on the mid- to lower-slope of the raised area next to the first order drainage line of South Creek.

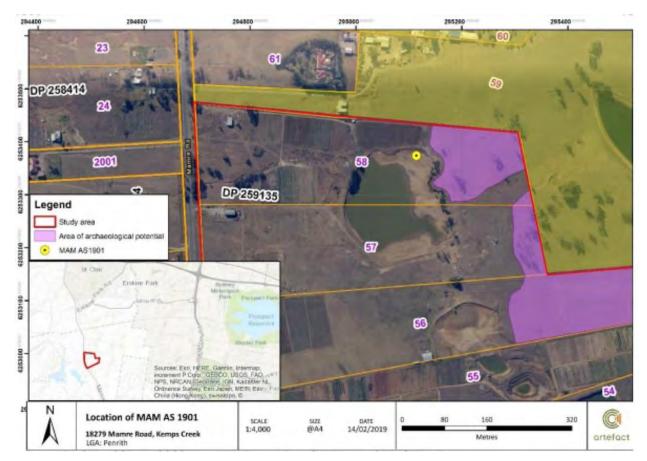


Figure 12 - Location of AHIMS ID# 45-5-5186 artefact scatter (MAM AS1901) and associated PAD. The current subject area is indicated by the yellow shading.

Source: AHIMS ID# 45-5-5186 site card

Figure 13 and Table 4 identify the breakdown of site types within the broader search area. Identified sites are all open context sites, reflecting a lack of rock overhangs in the area. The most common site types identified in the search area are artefact scatters, which comprised 65% (n=51) of search results, and isolated finds, which comprised 29% (n=23) of search results. The densities of the artefact scatters vary from small scatters of as a few as two objects up to hundreds of objects. Spatially, objects within the search area tend to be located primarily within proximity of South Creek and its tributaries.

These results reinforce the generic predictive model for the Cumberland Plain, which suggests that Aboriginal objects are anticipated to occur in higher frequency and density within 200m of high order streams. Aboriginal objects are also anticipated within 200m in context of lower order streams, but these are generally low density, background scatters and generally reflective of less prolonged, transitional use of the landscape.

Table 4 - AHIMS search results (Client Service ID: 517484)

Site Type	Context	Number	Percentage
Artefact Scatter	Open	51	65%
Isolated Find	Open	23	29%
Not Recorded	Open	3	4%
Artefact Scatter with PAD	Open	1	1%
Artefact Scatter with Scarred Tree	Open	1	1%
Total	N/A	79	100

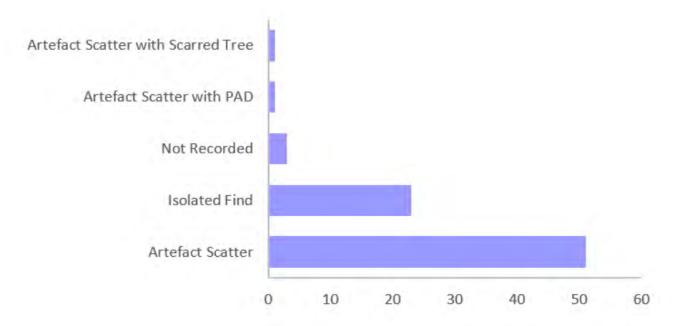


Figure 13 - Graph showing the results of AHIMS Search for Client Service ID: 517484

It should be noted that the AHIMS register does not represent a comprehensive list of all Aboriginal objects or sites in a specified area as it lists recorded sites only identified during previous archaeological survey effort. The wider surroundings of the subject area have been the subject of various levels and intensity of archaeological investigations during the last few decades. Most of the registered sites have been identified through targeted, pre-development surveys for infrastructure and maintenance works, with the restrictions on extent and scope of those developments.

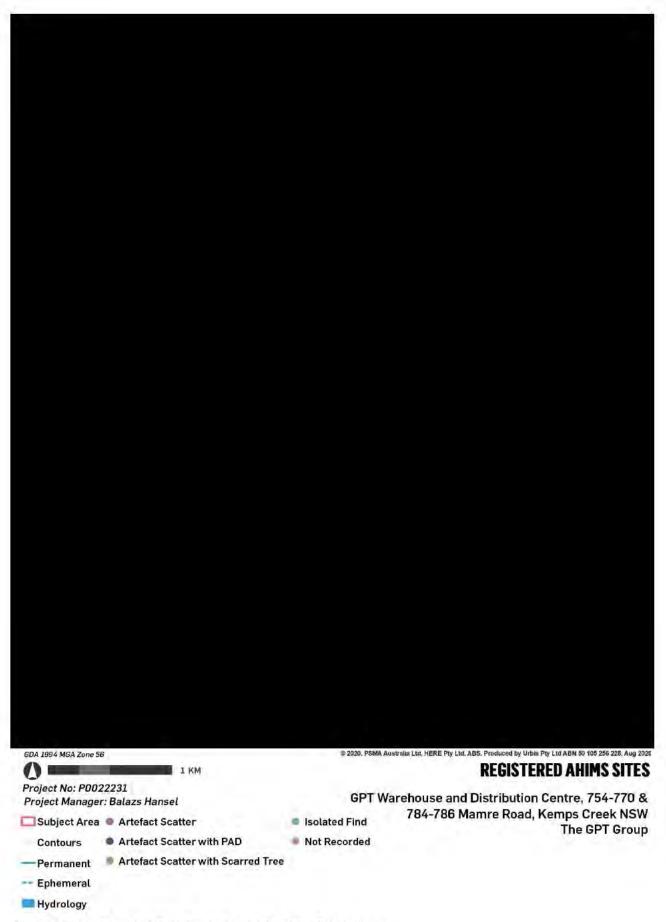


Figure 14 - Registered AHIMS sites in the vicinity of the Subject Area



Figure 15 - Corrected AHIMS site locations

2.1.5. Summary

The conclusions drawn from the archaeological background information, including AHIMS results and previous pertinent archaeological investigations are the following:

- There are four Aboriginal sites registered within the subject area and a further four registered as being located in close proximity to the subject area.
- Each of the four sites within the recorded in the AHIMS register as being within the subject area and two of those recorded as being in close proximity to the subject area have incorrect GPS coordinates and, according to the details of the sites, are located approximately 1 km to north, well outside of the subject area.
- There are two correctly registered Aboriginal sites in the immediate vicinity of the subject area: an isolated find (AHIMS ID# 45-5-4102) and an artefact scatter with an associated PAD (AHIMS ID# 45-5-5186).
- The subject area should be considered archaeologically sensitive as a result of registered Aboriginal sites and the landform within (ridge line, number of low rises adjacent to open depressions) and the registered sites in the vicinity.
- Archaeological sites can be found across a variety of landforms in the Cumberland Plain with more frequency in the vicinity of permanent water. Of particular archaeological potential are lower slopes and river terraces.
- Previous archaeological investigation within the subject area was insufficient in identifying the significance/extent as well as the appropriate management approach to both identified and potential archaeological sites.
- Recent archaeological investigations immediately adjacent to the subject area have identified a complex subsurface archaeological assemblage across a number of landforms despite minimal surface archaeological expressions such as isolated finds and scatters.

2.2. LANDSCAPE ANALYSIS

2.2.1. Geology and Soils

The subject area is located within the Sydney Basin, upon the Cumberland Plain. The Cumberland Plain lies on Triassic shales and overlain by Hawkesbury sandstone. The region consists of mostly low rolling hills and wide valleys.

There are two soil landscapes identified within the subject area (Figure 7), the Luddenham soil landscape and the Blacktown soil landscape.

The Luddenham Soil Landscape is present in the eastern portion of the subject area. This soil landscape is described as residing upon Wianamatta Group Ashfield Shale and Bringelly Shale formations. The Ashfield Shale consists of laminite and dark grey shale. Bringelly Shale consists of shale, calcareous claystone, and laminite. Between these two shale members is the Minchinbury Sandstone consisting of fine to mediumgrained lithic quartz sandstone. Soils are described as shallow (<100m) dark podzolic soils (Dd3.51) or massive earthy clays (Uf6.71) on crests; moderately deep (70-150cm) red podzolic soils (Dr2.11, Dr2.41, Dr3.11) on upper slopes; moderately deep (<150cm) yellow podzolic soils (Dy4.22) and prairie soils (Gn3.26) on lower slopes and drainage lines. Dominant soil materials include Friable dark brown loam, Hard setting brown clay loam, whole coloured strongly pedal clay, mottled grey plastic clay and apedal brown sandy clay.

The Blacktown Soil Landscape is present in the western portion of the subject area. This is described as residing upon gently undulating rises on Wianamatta Group shales and Hawkesbury shale. Soils are described as shallow to moderately deep (<100 cm) Red and Brown Podzolic Soils (Dr3.21, Dr3.11, Db2.11) on crests, upper slopes and well-drained areas; deep (150-300 cm) Yellow Podzolic Soils and Soloths (Dy2.11, Dy3.11) on lower slopes and in areas of poor drainage. Dominant soil materials include friable brownish-black loam, hard setting brown clay loam, strongly pedal mottled brown light clay, and light grey plastic mottled clays.

The depth of natural soils is relevant to the potential for archaeological materials to be present, especially in areas where disturbance is high. In general, as disturbance increases, archaeological potential decreases. Historic land use activities are discussed in Section 2.6 of this report, however in general disturbance is determined to be low across the subject area with the land primarily used for agricultural processes. There is high potential that the soil profile remains intact.

2.2.2. Vegetation and Resources

Vegetation within the Luddenham Soil Landscape is typified by extensively cleared open forest (dry sclerophyll forest). Dominant tree species include Eucalyptus maculate (spotted gum) and E. moluccana (grey box). Lesser occurrences of E. fibrosa (broad-leaved ironbark), E. crebra (narrow-leaved ironbark), E. tereticornis (forest red gum) and E. longifolia (woollybutt) occur. Understorey shrub species include Bursaria spinosa (blackthorn), Breynia oblongifolia (coffee bush), Allocasuarina torulosa (forest oak), Acacia implexa (hickory) and Clerodendrum tomentosum (hairy clerodendrum).

Vegetation within the Blacktown Soil Landscape is typified by almost completely cleared open-forest and open-woodland (dry sclerophyll forest). The original woodland and open-forest were dominated by Eucalyptus tereticornis (forest red gum), E. crebra (narrow-leaved ironbark), E. moluccana (grey box) and E. maculata (spotted gum).

2.2.3. Hydrology

The subject area contains one tributary of South Creek, which runs through the west of the subject area. The subject area is also approximately 200m north of another tributary of South Creek, which itself runs approximately 1.2km to the west. The subject area straddles the two catchments of South Creek (approximately 1.5km to the west) and Ropes Creek (approximately 1.5km to the east). (Figure 16).

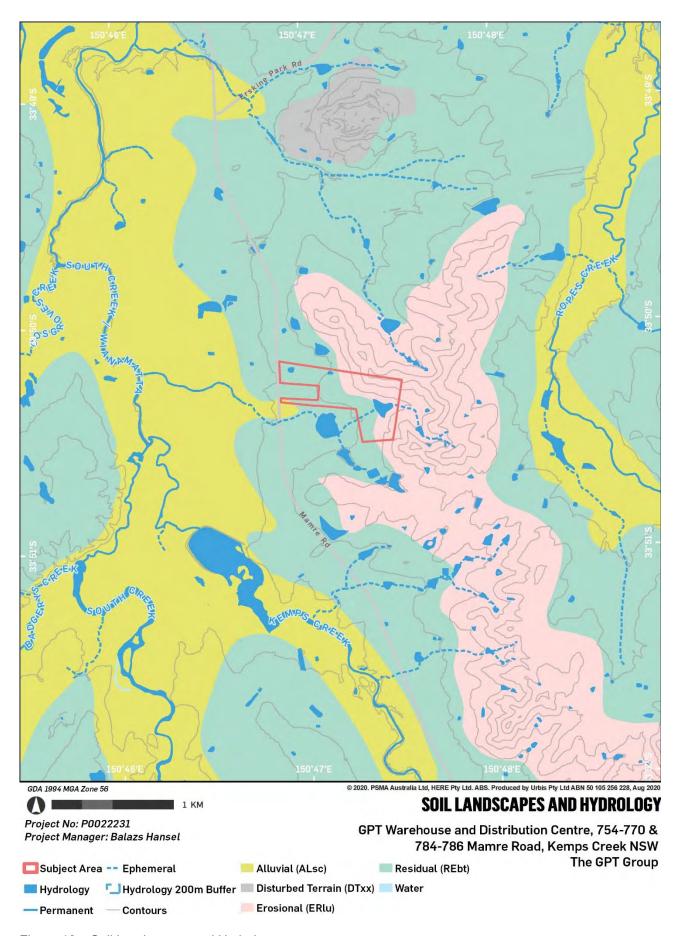


Figure 16 - Soil Landscapes and Hydrology

2.2.4. Landform

There are varying morphological types of Landform elements (see Figure 17 and Figure 18). The Australian Soil and Land Survey Field Handbook (CSIRO, 2009) identifies ten landform element types. These types are described in Table 5 below.

The landform within the eastern portion of the subject area comprises a south-westerly open depression. A tributary of South Creek runs through this depression and, by post-settlement damming of that watercourse, has partly modified the landform. The depression is flanked by southerly and westerly slopes, which have a maximal upper slope and waning lower slope. The western portion of the subject area comprises a slight westerly crest.

Table 5 - Landform Definitions

Туре	Definition
Crest (C)	Landform element that stands above all, or almost all, points in the adjacent terrain. It is characteristically smoothly convex upwards in downslope profile or in contour, or both. The margin of a crest element should be drawn at the limit of observed curvature.
Hillock (H)	Compound landform element comprising a narrow crest and short adjoining slopes, the crest length being less than the width of the landform element.
Ridge (R)	compound landform element comprising a narrow crest and short adjoining slopes, the crest length being greater than the width of the landform element.
Simple Slope (S)	Slope element adjacent below a crest or flat and adjacent above a flat or depression.
Upper Slope (U)	Slope element adjacent below a crest or flat but not adjacent above a flat or depression.
Mid Slope (M)	Slope element not adjacent below a crest or flat and not adjacent above a flat or depression.
Lower Slope (L)	Slope element not adjacent below a crest or flat but adjacent above a flat or depression.
Flat (F)	planar landform element that is neither a crest nor a depression and is level or very gently inclined (<3% tangent approximately).
Open Depression (vale) (V)	Landform element that stands below all, or almost all, points in the adjacent terrain. A closed depression stands below all such points; an open depression extends at the same elevation, or lower, beyond the locality where it is observed. Many depressions are concave upwards and their margins should be drawn at the limit of observed curvature.
Closed Depression (D)	Landform element that stands below all, or almost all, points in the adjacent terrain. A closed depression stands below all such points; an open depression extends at the same elevation, or lower, beyond the locality where it is observed. Many depressions are concave upwards and their margins should be drawn at the limit of observed curvature.

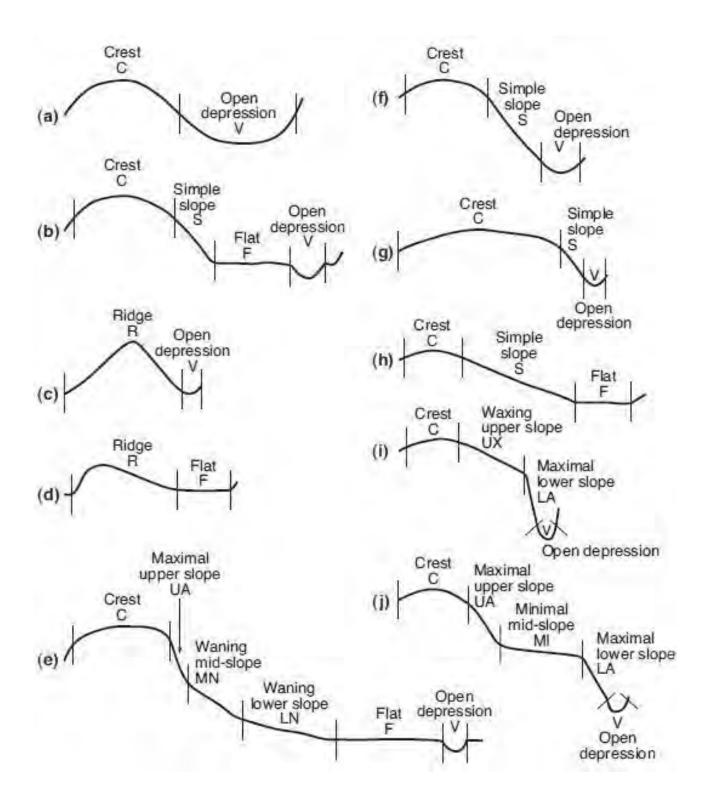


Figure 17 – Landform types Source: CSIRO, 2009

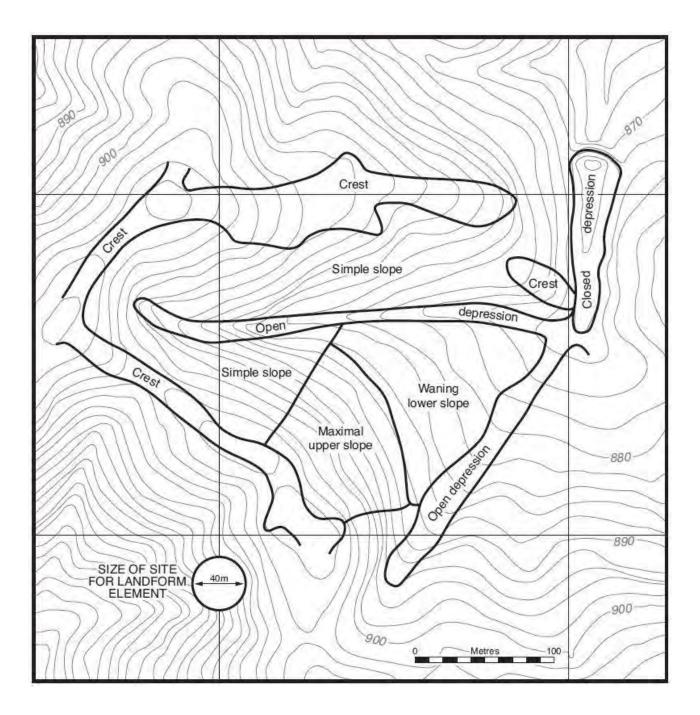


Figure 18 – Landform Patterns. *Source: CSIRO*, 2009

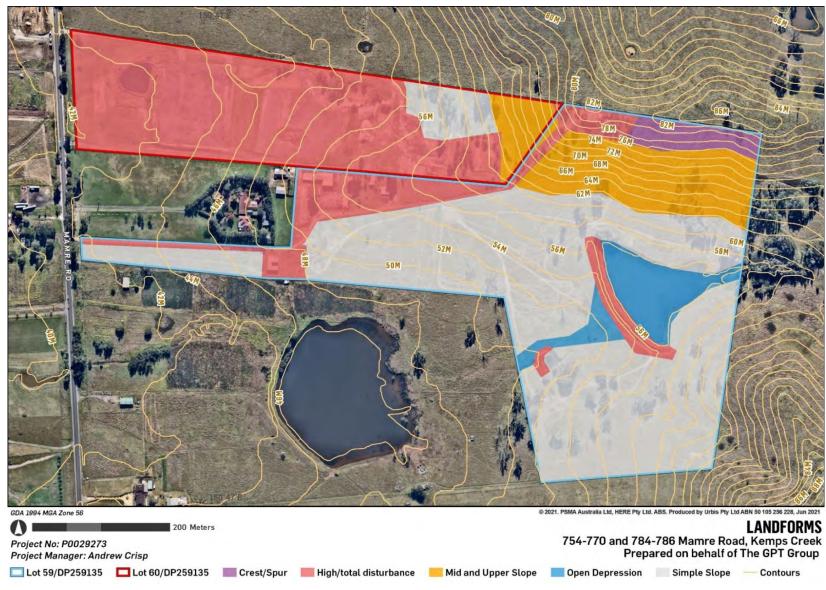


Figure 19 – Landforms and areas of disturbance within the subject area

2.3. HISTORICAL LAND USE

The subject area has historically been used for agricultural purposes (Biosys 2018). It is located on part of 300 acres granted to Richard Fitzgerald, a former convict who arrived in Sydney in 1791 on the Third Fleet ship William and Ann (MacLaurin 1966) (Figure 20).

Historic aerial images from 1961, 1978, 1994 and 2020 were analysed to develop an understanding of disturbance (see Figure 21) and is included in Table 6. Historical development of the subject area has caused localised moderate to high levels of ground disturbance (dam and building construction), while the majority of the subject area has been subject to low levels of physical impact (vegetation clearance and pastoral uses).

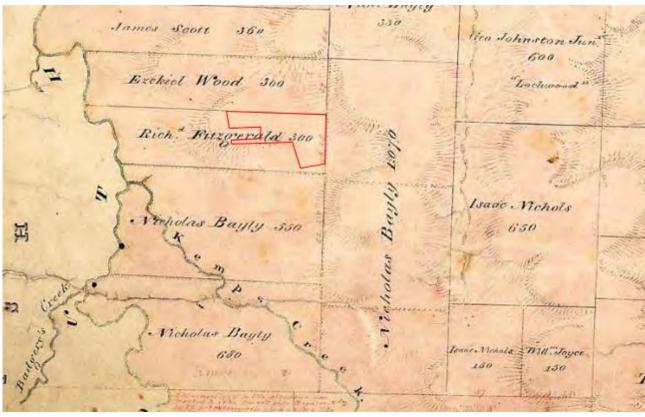
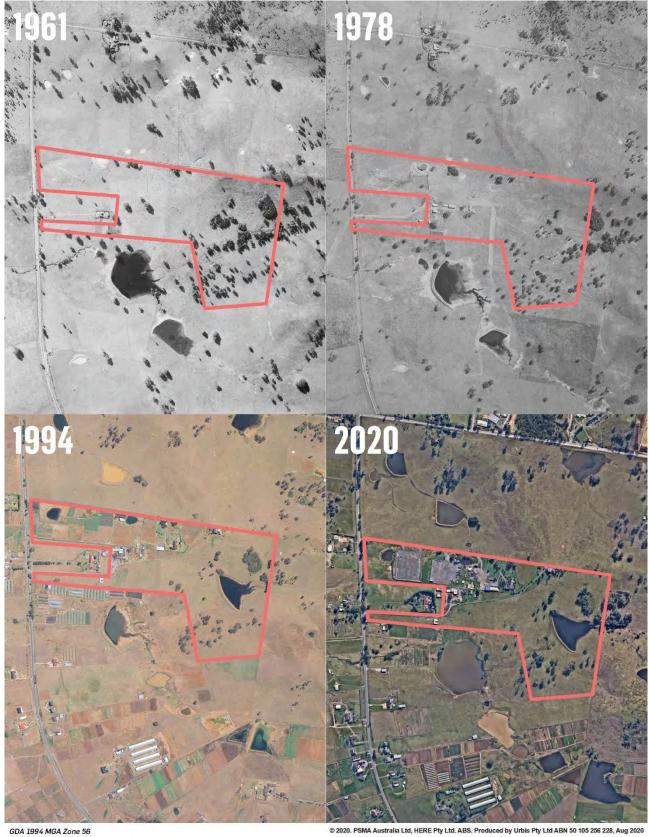


Figure 20 - Excerpt of a ca. 1870 map of the Parish of Melville including Richard Fitzgerald's "Restitution Farm"; Mamre Road is yet to be constructed (subject area indicated by red polygon). Source: NSW Land Registry Services (Map No. 14060401)

Table 6 – Analysis of historical aerials

Year	Observation
1961	By 1961, the subject area has been largely cleared of vegetation, with only scattered trees remain in the western portion of the subject area. However, more trees remain in the eastern portion, mainly along the watercourse running through that part of the subject area. A large, undisturbed cluster of trees remains in the north-eastern corner of the subject area. A small watercourse in the western portion has been dammed at the northern boundary of the subject area. A rectilinear area at the southern boundary of the western portion may be small-scale agriculture associated with buildings in the adjacent lot.
1978	A number of buildings have also been constructed in the western portion of the subject area, along with associated roads. An additional small dam has been built along the northern boundary of the subject area.
1994	By this stage, the watercourse running through the eastern portion of the subject area has been dammed. More vegetation has been cleared downstream of this dam, likely associated with its construction. However, the large cluster of trees in the north-eastern corner of the subject area remains. A further dam has been built in in the north-western portion of the subject area, with evidence for cultivated fields for small-scale farming also present in this area. A number of additional buildings have also been constructed in the northern portion of the subject area.
2020	The cultivated north-west portion of the subject area by this date has been converted into hardstand/laydown areas of asphalt/concrete. The eastern portion of the subject area appears largely unchanged from the 1994 aerial imagery.



400 M Project No: P0022231 Project Manager: Balazs Hansel

Figure 21 – Historical Aerial Imagery

Subject Area

HISTORICAL AERIAL PHOTOGRAPHS

GPT Warehouse and Distribution Centre, 754-770 & 784-786 Mamre Road, Kemps Creek NSW The GPT Group

PREDICTIVE MODEL 2.4.

The Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales requires that an appropriate predictive model be used when undertaking an ACHA. A predictive model is used to estimate the nature and distribution of evidence of Aboriginal land use in a subject area. The results produced by a predictive model can be used to identify potential archaeological deposits (PADs).

A predictive model should consider variables that may influence the location, distribution and density of sites, features or artefacts within a subject area. Variables typically relate to the environment and topography, such as soils, landscape features, slope, landform and cultural resources. The following predictions for the subject area have been formulated on the basis of previous assessments, regional models and the AHIMS data provided in Section 2.1.3.

There are several site types which are known to occur within New South Wales. These site types and their likelihood to occur within the subject area are evaluated in Table 8 below.

The general process archaeologists employ to determine the likelihood of any particular site type (artefact scatter, shelter, midden etc) to occur within a given subject area requires the synthetises of information for general distribution of archaeological sites within the wider area including:

- Detailed analysis of previous archaeological investigations within the same Region.
- Presence or absence of landscape features that present potential for archaeological resources (human occupation, use) such as raised terraces adjacent to permeant water,
- Analysis of the geology and soil landscape within the subject area which allows for a determination to be made of the type of raw material that would have been available for artefact production (silcrete, tuff, quartz etc) and the potential for the accumulation of archaeological resource within the subject area.
- Investigation of and determination of the level of disturbance/historical land use within the subject area which may impact on or remove entirely any potential archaeological material.

The combination of these would give us an indication of various levels of possibility of finding archaeological resource within a given area. Please refer to Table 7 below for an example of the indicative process of determining the likelihood of a given site occurring within a subject area.

Table 7 – Indicative process of determining the likelihood of a given site occurring within a subject area

Likelihood	Indicative subject area context	Indicative action
High	Low level of disturbance, presence of one or more archaeologically sensitive landforms (raised terrace adjacent to permanent water, sand dunes, rock shelter etc), presence of archaeologically sensitive soil landscape (Tuggerah, Blacktown, South Creek etc), presence of previously recorded archaeological site(s) and/or identification of previously unrecorded archaeological site(s) within the subject area	Detailed archaeological investigation including but not limited to survey, test excavation and potentially (depending on density and/or significance of archaeological deposit) salvage excavation.
Moderate	Moderate level of disturbance, presence of one or more archaeologically sensitive landforms (raised terrace adjacent to permanent water, sand dunes, rock shelter etc), presence of archaeologically sensitive soil landscape (Tuggerah, Blacktown, South Creek etc), presence of previously recorded archaeological site(s) and/or identification of previously unrecorded archaeological site(s) within the subject area	Detailed archaeological investigation including but not limited to survey, test excavation and potentially (depending on density and/or significance of archaeological deposit) salvage excavation.

Likelihood	Indicative subject area context	Indicative action
Low	High level of disturbance, presence of one archaeologically sensitive landforms (raised terrace adjacent to permanent water, sand dunes, rock shelter etc), presence of archaeologically sensitive soil landscape (Tuggerah, Blacktown, South Creek etc).	Employ chance finds procedure and works can continue without further archaeological investigation.
Nil	Complete disturbance, complete removal of natural soil landscape, zero archaeologically sensitive landform, geological or soil features. Zero previously recorded archaeological sites.	Employ chance finds procedure and works can continue without further archaeological investigation.

Table 8 - Predictive Model

Site Type	Description	Likelihood	Justification
Artefact Scatters	Artefact scatters represent past Aboriginal subsistence and stone knapping activities and include archaeological remains such as stone artefacts and hearths. This site type usually appears as surface scatters of stone artefacts in areas where vegetation is limited, and ground surface visibility increases. Such scatters of artefacts are also often exposed by erosion, agricultural events such as ploughing, and the creation of informal, unsealed vehicle access tracks and walking paths. These types of sites are often located on dry, relatively flat land along or adjacent to rivers and creeks. Camp sites containing surface or subsurface deposit from repeated or continued occupation are more likely to occur on elevated ground near the most permanent, reliable water sources. Flat, open areas associated with creeks and their resource-rich surrounds would have offered ideal camping areas to the Aboriginal inhabitants of the local area.	Moderate to high	 The subject area contains archaeologically sensitive landforms (raised terraces, hill-slopes adjacent to watercourse). The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. The level of historical land disturbance within the majority of the subject are is low, increasing the potential that these site types would remain in situ.
Isolated Finds	Isolated finds represent artefactual material in singular, one off occurrences. Isolated finds are generally indicative of stone tool production, although can also include contact sites. Isolated finds may represent a single item discard event or be the result of limited stone knapping activity. The presence of such isolated artefacts may indicate the presence of a more extensive, in situ buried archaeological deposit, or a larger deposit obscured by low ground visibility. Isolated artefacts are likely to be located on landforms associated with past Aboriginal activities, such as ridgelines that would have provided ease of movement through the area, and level areas with access to water, particularly creeks and rivers.	Moderate to high	 The subject area contains archaeologically sensitive landforms (raised terraces, hill-slopes adjacent to watercourse). The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. The level of historical land disturbance within the majority of the subject are is low, increasing the potential that these site types would remain in situ.

Site Type	Description	Likelihood	Justification
PAD	Potential Archaeological Deposits (or PADs) are areas where there is no surface expression of stone artefacts, but due to a landscape feature there is a strong likelihood that the area will contain buried deposits of stone artefacts. Landscape features which may feature in PADs include proximity to waterways, particularly terraces and flats near 3rd order streams and above; ridge lines, ridge tops and sand dune systems.	Moderate to high	 The subject area contains archaeologically sensitive landforms (raised terraces, hill-slopes adjacent to watercourse). The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. The level of historical land disturbance within the majority of the subject are is low, increasing the potential that these site types would remain in situ.
Scarred Trees	Tree bark was utilised by Aboriginal people for various purposes, including the construction of shelters (huts), canoes, paddles, shields, baskets and bowls, fishing lines, cloaks, torches and bedding, as well as being beaten into fibre for string bags or ornaments (sources cited in Attenbrow 2002: 113). The removal of bark exposes the heart wood of the tree, resulting in a scar. Trees may also have been scarred in order to gain access to food resources (e.g. cutting toeholds so as to climb the tree and catch possums or birds), or to mark locations such as tribal territories. Such scars, when they occur, are typically described as scarred trees. These sites most often occur in areas with mature, remnant native vegetation. The locations of scarred trees often reflect an absence of historical clearance of vegetation rather than the actual pattern of scarred trees. Carved trees are different from scarred trees, and the carved designs may indicate totemic affiliation (Attenbrow 2002: 204); they may also have been carved for ceremonial purposes or as grave markers.	Nil	Historical vegetation clearance is reasonably extensive, however, in the eastern and northern portions of the subject area there are stands of mature trees which may have potential for human modification.

Site Type	Description	Likelihood	Justification
Axe Grinding Grooves	Grinding grooves are the physical evidence of tool making or food processing activities undertaken by Aboriginal people. The manual rubbing of stones against other stones creates grooves in the rock; these are usually found on flat areas of abrasive rock such as sandstone. They may be associated with creek beds, or water sources such as rock pools in creek beds and on platforms, as water enables wet-grinding to occur.	Nil	It is unlikely that the exposed sandstone outcrops required for this site type would occur within the subject area.
Bora/Ceremonial	Aboriginal ceremonial sites are locations that have spiritual or ceremonial values to Aboriginal people. Aboriginal ceremonial sites may comprise natural landforms and, in some cases, will also have archaeological material. Bora grounds are a ceremonial site type, usually consisting of a cleared area around one or more raised earth circles, and often comprised of two circles of different sizes, connected by a pathway, and accompanied by ground drawings or mouldings of people, animals or deities, and geometrically carved designs on the surrounding trees.	Nil	Historical land-use in the subject area is likely to have destroyed any bora grounds or ceremonial sites.
Burial	Aboriginal burial of the dead often took place relatively close to camp site locations. This is due to the fact that most people tended to die in or close to camp (unless killed in warfare or hunting accidents), and it is difficult to move a body long distance. Soft, sandy soils on, or close to, rivers and creeks allowed for easier movement of earth for burial; and burials may also occur within rock shelters or middens. Aboriginal burial sites may be marked by stone cairns, carved trees or a natural landmark. Burial sites may also be identified through historic records or oral histories.	Low	 The subject area is not situated on soft, sandy soils. The subject area does not include any rock shelters.
Contact site	These types of sites are most likely to occur in locations of Aboriginal and settler interaction, such as on the edge of pastoral properties or towns. Artefacts located at such sites may involve the use of introduced materials such as glass or ceramics by Aboriginal people or be sites of Aboriginal occupation in the historical period.	Low	 Contact sites in the area are possible due to early European settlement. Historical land-use in the subject area reduces the potential for these sites.

Site Type	Description	Likelihood	Justification
Midden	Midden sites are indicative of Aboriginal habitation, subsistence and resource extraction. Midden sites are expressed through the occurrence of shell deposits of edible shell species often associated with dark, ashy soil and charcoal. Middens often occur in shelters, or in eroded or collapsed sand dunes. Middens occur along the coast or in proximity to waterways, where edible resources were extracted. Midden may represent a single meal or an accumulation over a long period of time involving many different activities. They are also often associated with other artefact types.	Nil to low	 The subject area is not situated near the coast. The lower order tributary within the subject area is not conducive to this type of site.
Art	Art sites can occur in the form of rock engravings or pigment on sandstone outcrops or within shelters (discussed below). An engraving is some form of image which has been pecked or carved into a rock surface. Engravings typically vary in size and nature, with small abstract geometric forms as well as anthropomorphic figures and animals also depicted (DECCW, 2010c). In the Sydney region engravings tend to be located on the tops of Hawkesbury Sandstone ridges where vistas occur. Pigment art is the result of the application of material to a stone to leave a distinct impression. Pigment types include ochre, charcoal and pipeclay. Pigment art within the Sydney region is usually located in areas associated with habitation and sustenance.	Nil to low	 The subject area does not include any shelters. It is unlikely that the exposed sandstone outcrops required for this site type would occur within the subject area.
Shelters	Shelter sites are places of Aboriginal habitation. They take the form of rock overhangs which provided shelter and safety to Aboriginal people. Suitable overhangs must be large and wide enough to have accommodated people with low flooding risk. Due to the nature of these sites, with generic rock over hangs common particularly in areas with an abundance of sandstone, their use by Aboriginal people is generally confirmed through the correlation of other site types including middens, art, PAD and/or artefactual deposits.	Nil	 The subject area does not include any shelters. It is unlikely that the exposed sandstone outcrops required for this site type would occur within the subject area.

2.5. RESEARCH DESIGN AND SAMPLING STRATEY

The purpose of a research design is to provide and direct a reasonable foundation for management decisions of an archaeological or cultural heritage site or place as well as satisfying regulatory requirements through a standardised process. All related future archaeological studies and analyses stand to benefit if guided by clear linkage of study goals, relevant theory, data and methods. Application of a research design is international best practice and plays a vital role in the planning process.

This research design follows a test excavation under the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010). The purpose of the test excavation is to obtain information about nature and extent of subsurface artefacts and any archaeological features at this location. This information will be used to better to understand the significance of the archaeology at this location and to better guide its management.

The below Archaeological Research Design (ARD) has been developed to provide a framework to investigate the nature and origin of the potential archaeological resource within the subject area.

This ARD has been designed based on the results of the Aboriginal Cultural Heritage Assessment Report (ACHAR), particularly the results of the archaeological background research and predictive model.

This ARD has been prepared to cover the following objectives:

- Investigate the nature, spatial and stratigraphical extent, condition and integrity of any archaeological deposits that may be present.
- If archaeological deposits are identified, apply relevant research questions to interpret the finds and results in context of local and regional archaeological modelling.

In order to fulfil the objectives of the ARD, the following indicative research questions have been formulated:

- 1. Is there a subsurface archaeological deposit present?
- 2. If an archaeological deposit present, how can it be interpreted?
 - What is the spatial and vertical extent of the deposit?
 - What is the integrity and condition of the deposit?
 - What are the physical attributes and compositions of the deposit (eg. stone artefacts, features, remains of original environment, contact period artefacts)?
 - What are the characteristics of the stone artefact assemblage? What types of artefacts are present and what specialisation if any can be detected in the assemblage?
 - Does the archaeological deposit have evidence of intra-site patterning or various occupational periods?
 - Should faunal and/or shell material be located, what species present were utilised by Aboriginal people?
- 3. Can the archaeological deposit be interpreted in a local context?
 - Are there similarities or differences with nearby archaeological sites?
 - Is there evidence of connection to nearby sites in terms of raw material, composition and nature of the assemblage?
- 4. Can the archaeological deposit be interpreted in the regional context?
 - Where did the raw materials originate from?
 - Is there any indication of trade in connection of raw material procurement?
 - How does the assemblage compare to other archaeological sites within the region?
- 5. Do the results if the archaeological excavation changes the scientific and cultural significance of the site?
 - What is the scientific and cultural value of the assemblage?
 - How do the Aboriginal stakeholders view the cultural value of the deposit and assemblage?

2.6. TEST EXCAVATION METHODOLOGY

The test excavations will be undertaken in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) in order to understand the nature, extent, integrity and research significance of the Aboriginal archaeological resource. The test excavation will also aim to sample the various landscape features located within the subject area for any potential sub-surface archaeological deposits.

This section presents the methodology for the proposed test excavation programs. According to the Code of Practice "test excavations should be sufficiently comprehensive to allow characterisation of the Aboriginal objects present without having a significant impact on the archaeological value of the subject area".

The test excavation will include:

- The initial approach to testing will include the excavation of 50 cm by 50 cm test pits in various transects on a 10m grid system. The exact location of the transects and test pits have been informed by the results of the archaeological survey and the predictive model of the ACHAR.
- The location and number of transects and test pits will be further adjusted by on-site observation of localised disturbance and in consultation with the Aboriginal officers on site.
- All excavated material will be wet sieved through a 5mm metal sieve station.

2.6.1. Test Excavation Stage 1

- The test pits shall be excavated by hand (inclusive of trowels, spades and other hand tools) along each transects at intervals of 10m.
- The first test pit within each transect and/or landform shall be excavated in 5cm spits to establish the depth and nature of soil and any stratigraphy present. Subsequent test pits conducted within the same transect and/or landform and/or potential archaeological deposit shall then be excavated in either 10cm spits or stratigraphic units (whichever is smaller) to the base of Aboriginal object-bearing units being the removal of the A-horizon soil deposit down to the sterile clay layer (B-horizon).
- All test pits will be excavated using the above methods in each transect before any further adjustment is made to the transect or additional pits are excavated.
- All excavated soil will be sieved through 5mm nested sieves using wet sieving method.

2.6.2. Test Excavation Stage 2

- Following the completion of Stage 1, the Excavation Director (Andrew Crisp) will make the decision whether it is necessary to excavate additional 50cm by 50 cm test pits in order to identify the spatial extent of identified archaeological resources, or existing pits will be expanded to further excavate those pits that yielded archaeological material or features to better understand the nature, extent and integrity of the identified archaeological resources.
- Test pits may be expanded into a 1m x 1m square or other arrangements in line with the Code of Practice at the discretion of the Excavation Director. The additional pits would be excavated in 50cm x 50cm test pit units, to further understand the archaeological resource.
- Additional 50cm x 50cm test pits may be placed at an interval of 5 or 10m (or other justifiable and regular spacing appropriate to the scale of the area being tested) from the test pits that yielded archaeological resource to test further the immediate area for artefact concentrations and/or archaeological features, or to define a site boundary. These additional test pits would be excavated using the same methodology outlined above.
- Expansion test pits may be combined and excavated as necessary in 50cm x 50cm units for the purposes of further understanding site characteristics. Note that under the Code of Practice, the maximum area that can be excavated in any one continuous area is 3m².

2.6.3. General Procedures

- The Code of Practice dictates that the maximum surface area of all test excavation units must be no greater than 0.5% of the PAD or landform unit area being investigated.
- All excavated soil shall be sieved in 5 mm sieves using wet sieving method.

- Artefacts will be collected, bagged and tagged with a unique identification number according to test pit location, spit or context number.
- Each test pit shall be recorded using standard archaeological procedure, including standardised recording forms, coordinates collected using a GPS, photographic recording with scale and stratigraphic / soil profile for each test pit shall be recorded in scale drawings as required by Code of Practice recording requirements.
- Test excavation units shall be backfilled as soon as practicable, to be organised by the proponent. Alternatively, if manual collapse of the test pits is deemed appropriate this will be agreed to prior to the test excavation program.
- An AHIMS site card shall be prepared and submitted to the AHIMS Registrar for any new sites identified during test excavations.
- An AHIMS Site Impact Recording form shall be completed and submitted to the AHIMS Registrar for any sites impacted during test excavations.
- In the unlikely event that suspected human remains are identified works will immediately cease and the NSW Police and DPC will be notified.
- Test excavations shall cease when enough information* has been recovered to adequately characterise the objects/assemblage(s) present with regard to their nature and significance.

*Enough information is defined by DPC as meaning "that the sample of excavated material clearly and selfevidently demonstrates the deposit's nature and significance. This may include things like locally or regionally high object density: presence of rare or representative objects; presence of archaeological features: or locally or regionally significant deposits stratified or not" (DECCW 2010a).

2.7. POST-EXCAVATION ANALYSIS

All collected materials shall be temporarily held at the Urbis office, where they shall be analysed and catalogued by Urbis archaeological staff using the standard artefact curation protocol of the Australian Museum. Selected artefacts or representative samples will be photographed and included and further analysed in detail in the report. The collection shall be analysed using A Record in Stone (Holdaway & Stern 2004) and other contemporary methods.

2.7.1. Care and control

A strategy for management of Aboriginal artefacts recovered from the site shall be developed through consultation with the RAPs. The RAPs are invited to provide comment on the long-term management of artefacts.

Artefacts identified and collected during test excavations will be temporarily held in a lockable, secure location at the Urbis Sydney office (ANGEL PLACE, LEVEL 8, 123 PITT STREET SYDNEY, NSW 2000, AUSTRALIA) where they shall be catalogued and analysed by an Urbis archaeologist / artefact specialist.

Following completion of artefact cataloguing and analysis any artefacts recovered during test excavations and subsequent salvage excavations (if necessary) will be moved to the agreed long-term keeping place as soon as practicable in accordance with:

Requirement 26 "Stone artefact deposition and storage" in the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (24 September 2010.



Figure 22 - The subject area with indicative location of test pit (TP) transects overlaying identified landform type (Red - disturbed, Purple - Ridge/upper slope, Yellow - mid slope, Green - lower slope and flat). The test pit transects with the white boarder are discretionary extra transects. Whether these are required will be determined in the field based on subsurface densities and would be subject to discussion with GPT Group.

ARCHAEOLOGICAL SURVEY RESULTS 2.8.

A field survey of the subject area was undertaken on 19th October 2020 by Urbis Senior Archaeologist Andrew Crisp and Urbis Consultant Archaeologist Aaron Olsen, with three RAP site officers in attendance. Representatives are listed in Table 9 below.

Table 9 - RAP survey attendees

RAP Group	Representative	
Deerubbin Local Aboriginal Land Council (DLALC)	Steven Randall	
Deerubbin Local Aboriginal Land Council (DLALC)	Kevin Meredith	
Deerubbin Local Aboriginal Land Council (DLALC)	David Whitlam	

The study area was walked on foot with opportunistic inspection of areas of surface exposure. Landforms identified as having a potential for containing a subsurface archaeological deposit were identified. The archaeological survey was undertaken in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010a).

In accordance with the Code of Practice the study area was surveyed according to survey units, landforms, and landscapes. All survey units are described in Table 10, shown in Figures 22 and 23 with sampled landform areas described in Table 11.

The field survey was undertaken in generally clear, sunny conditions with some cloud present in the morning. The field survey was undertaken via pedestrian transects with individuals distanced at approximately 5-10m where possible, and archaeologists with GPS trackers on either end of the group.

The coverage of the field survey as shown by GPS data is represented in Figure 22 below.

Generally, visibility was low across the subject area due to grass and vegetation coverage, with visibility limited to areas of exposure resulting from disturbance including paths and tracks, dam embankments and edges, and localised erosion scours at the base of mature trees (caused by cattle movement/impacts).

No new Aboriginal sites were identified during the survey.

Table 10 - Field Survey Data - Survey Coverage

Survey Unit	Landform	Unit Area (m²)	Visibility %	Exposure %	Effective Coverage (m ²)	Effective Coverage %
1	Lower Hillslope	50760	20	20	2030.4	4
2	Upper Hillslope/Ridge	18630	20	10	372.6	2
3	Lower Hillslope	27060	20	20	1082.4	4
4	Lower Hillslope	75330	20	10	1506.6	2
5	Lower Hillslope	60300	20	20	2412	4

During the course of the survey disturbance was noted and areas of potential were recorded. The test excavation will target undisturbed landforms within close proximity to freshwater, locations of erroneously recorded AHIMS sites and areas considered to be moderately to highly disturbed (control area). No previously unidentified sites were recorded as a result of the survey.

Table 11 - Field Survey Data - Landform Summary

Landform	Landform Area (m²)	Area Effectively Surveyed (m ²)	Percentage of Landform Effectively Covered	Number of Aboriginal Sites	Number of Artefact Features
Lower Hillslope	213450	2030.4	0.951229796	*	-
Upper Hillslope/Ridge	18630	372.6	2	-	-

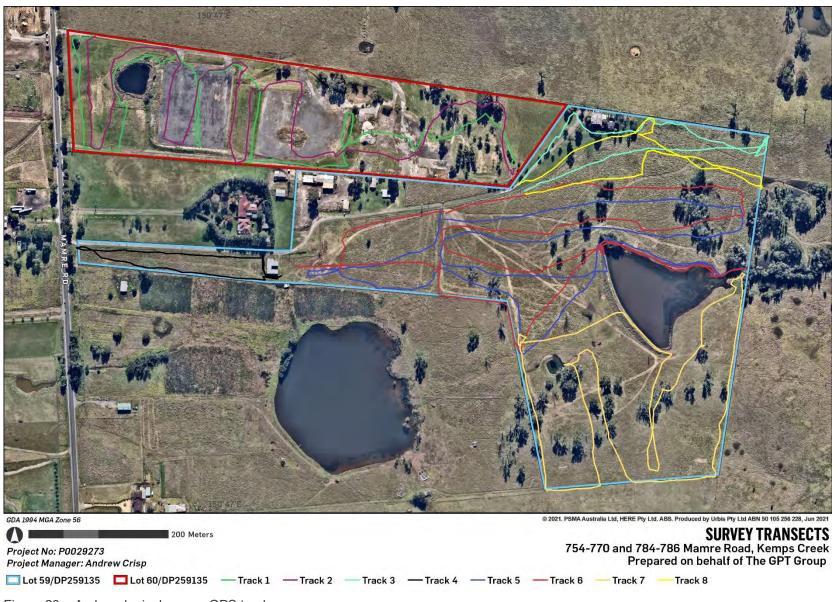


Figure 23 – Archaeological survey GPS tracks



Figure 24 – Archaeological Survey Units

2.8.1. Survey Unit 1

Survey Unit 1 (SU1) incorporates the majority of Lot 60 DP 259135.

The eastern most portion of SU1 is a contains lower hillslope landform with low density residential dwelling. The entirety of the remainder of SU1 contains truncated and artificially terraced simple slope in addition to low density industrial use/warehouse/sheds.

SU 1 was heavily grassed with some sparce regrowth and planted vegetation and trees. Visibility in SU1 was low, at approximately 20%. Exposures were associated with the areas of disturbance including the dam embankments, unsealed tracks, livestock impacts at the base of trees and in association truncation of the natural landform.

No Aboriginal sites were identified in SU1.



Figure 25 - Survey team, SU1. Aspect west



Figure 27 – Erosion exposure within embankment between hardstands. Aspect south



Figure 29 - lower hillslope adjacent to dwelling in eastern portion of SU1. Aspect south



Figure 26 -Dam within SU1. Aspect east



Figure 28 - Extant shed complex. Aspect south-east



Figure 30 – Lower hillslope to rear (east of dwelling). Aspect north

2.8.2. Survey Unit 2

Survey Unit 2 (SU2) incorporates the eastern most portion of Lot 60 DP 259135 and the north eastern portion of Lot 59 DP 259135.

SU2 contains mid hillslope rising to the east into upper hillslope and ridge landform. Atop the ridge is a lowdensity residential dwelling and garden.

SU2 was heavily grassed with some sparce regrowth and planted vegetation and trees. Visibility in SU2 was low, at approximately 20%. Exposures were associated with the areas of disturbance including livestock impacts at the base of trees and in association with vehicle movements.

No Aboriginal sites were identified in SU2.



Figure 31 – Western portion of SU2. Aspect west



Figure 33 – Garden and dwelling on ridge in SU2



Figure 35 – View along ridge from north-east corner of subject area. Aspect west



Figure 32 – View east from mid hillslope



Figure 34 – Ridge top in north-east of subject area. Aspect east



Figure 36 – View south toward tributary

2.8.3. Survey Unit 3

Survey Unit 3 (SU3) incorporates the central portion of Lot 59 DP 259135 to the north of the low order tributary (now dammed).

SU3 entirely consisted of lower hillslope landform utilised as pastural land, with small stands of native vegetation a large dam the most significant historic impact.

SU3 was heavily grassed with small stands of native trees, predominantly regrowth. Visibility in SU3 was low, at approximately 20%. Exposures were associated with the areas of disturbance including the dam embankments, unsealed tracks, and livestock impacts at the base of trees and areas or repeat movement (near gates, fence lines).

No Aboriginal sites were identified in SU3.



Figure 37 - Northern bank of dam. Aspect west



Figure 39 – stand of regrowth native trees



Figure 41 – View east along lower hillslope



Figure 38 - Western bank of dam. Aspect south



Figure 40 – survey team traversing lower hillslope landform. Aspect north



Figure 42 – View west toward SU4

2.8.4. Survey Unit 4

Survey Unit 4 (SU4) incorporates the western portion of Lot 59 DP 259135.

The eastern most portion of SU4 is a contains an artificially terraced simple slope in addition to established livestock barn/shed. The remainder of SU4 is gently westerly sloping paddock down toward Mamre Road easement.

SU4 was heavily grassed with some sparce native trees. Visibility in SU4 was low, at approximately 20%. Exposures were associated with the areas of disturbance including unsealed tracks, livestock impacts at the base of trees and in association truncation of the natural landform.

No Aboriginal sites were identified in SU1.



Figure 43 – Structure in eastern portion of SU4



Figure 45 – Felled mature native tree in SU4



Figure 47 – Remnant mature native tree in SU4



Figure 44 - Erosion in eastern portion of SU4



Figure 46 – Survey team traversing SU4. Aspect north



Figure 48 – View eastward along SU4

2.8.5. Survey Unit 5

Survey Unit 5 (SU5) incorporates the southern portion of Lot 59 DP 259135 to the south of the low order tributary (now dammed).

SU5 entirely consisted of lower hillslope landform utilised as pastural land, with small stands of native vegetation a large dam the most significant historic impact.

SU5 was heavily grassed with small stands of native trees, predominantly regrowth. Visibility in SU3 was low, at approximately 20%. Exposures were associated with the areas of disturbance including the dam embankments, unsealed tracks, and livestock impacts at the base of trees and areas or repeat movement (near gates, fence lines).

No Aboriginal sites were identified in SU5.



Figure 49 – Survey team traversing through stand of native trees. Aspect north-east



Figure 50 – View north toward tributary



Figure 51 – Indicative erosion cause by cattle movement



Figure 52 - View east along southern boundary of subject area



Figure 53 – View north along eastern boundary of subject area



Figure 54 – View along southern bank of dam. Aspect west

2.9. TEST EXCAVATION RESULTS

The archaeological test excavation of the subject area was undertaken was conducted in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010). The archaeological excavation of the subject area was undertaken in two field programs (Table 12).

Table 12 - Test excavation schedule

Portion of subject area	Notification of excavation to DPC under Requirement 15c	Date of excavation program
60 DP 259135	10 th November 2020	Stage 1 Test Excavation 24th, 25th and 26th November 2020
59 DP 259135	12 th March 2021	Stage 1 Test Excavation 17th-23rd May, 24th-28th May & 31st May-4th June 2021. Stage 2 Test Excavation 7-9th June 2021.

2.10. STAGE 1 TEST EXCAVATION RESULTS – LOT 60 DP 259135

The following section presents a transect-by-transect summary of the test excavation results. The general locations of the test pits are shown by each package in Figure 55 and Figure 64. Stage 1 test excavation was undertaken in accordance with the methodology and sampling strategy provided to Heritage NSW on 12th March 2021 under Requirement 15C. The excavation team is provided below and incorporated participants from the Registered Aboriginal Parties (RAPs) and Urbis archaeologists.

Excavation team included:

- Excavation Director/Senior Archaeologist, Urbis Andrew Crisp
- Consultant Archaeologist Aaron Olsen
- Deerubbin Local Aboriginal Land Council Site Officer Steven Knight
- Deerubbin Local Aboriginal Land Council Site Officer Tevita Tai

A total of twenty-three (23) 50cm by 50cm test units (TUs) were excavated within the subject area (Figure 54). Six TUs were excavated in Transect A with seventeen (17) TUs excavated in the Northbound portion.

Zero Aboriginal artefacts were identified in TUs excavated within the Lot 60 DP 259135 portion of the subject area.

Transect A 2.10.1.

High levels of disturbance were identified across the entirety of Transect A which included shallow deposit (10cm-30cm) of archaeologically sterile mixed basal/levelling clay and topsoil.



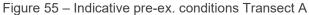




Figure 56 - Indicative post-ex TU in Transect A

2.10.2. **Transect B**

Transect B presented a largely natural soil profile of between approximately 20cm-40cm in depth. A light grey-brown humic deposit gradually transitioned into a firm basal clay.



Figure 57 – Indicative pre-ex. conditions Transect B



Figure 58 – Indicative post-ex TU in Transect B

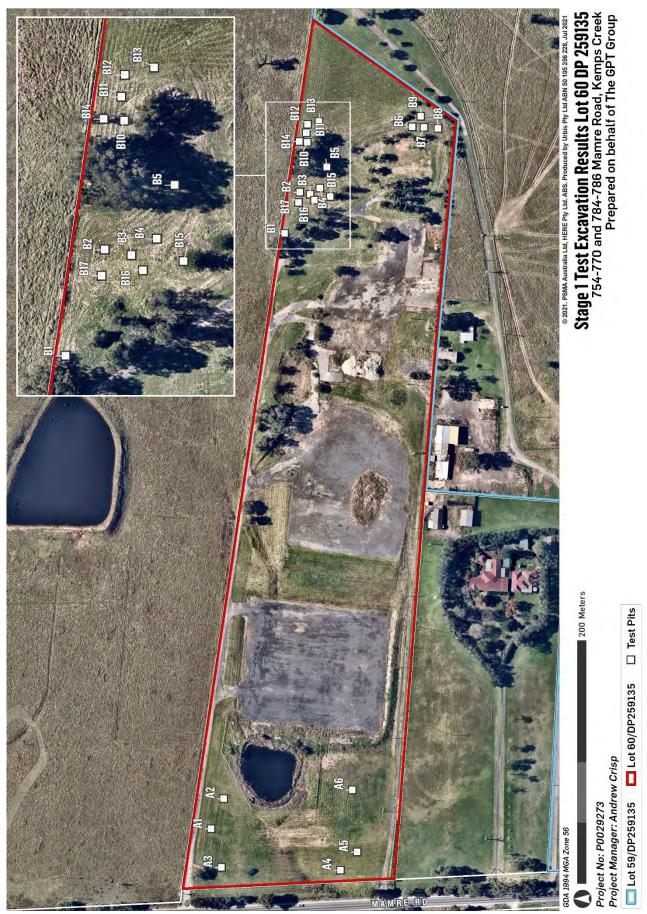


Figure 59 - Stage 1 Test Excavation Results Lot 60 DP 259135

2.11. STAGE 1 TEST EXCAVATION RESULTS – LOT 59 DP 259135

The following section presents a transect-by-transect summary of the Stage 1 test excavation results within Lot 59 DP 259135. The locations of the test pits are shown below (Figure 60 to Figure 65).

Test excavation was undertaken in accordance with the methodology and sampling strategy provided to Heritage NSW under Requirement 15C. The excavation team is provided below and incorporated participants from the Registered Aboriginal Parties (RAPs) and Urbis archaeologists.

The excavation team included:

- Excavation Director/Senior Archaeologist, Urbis Andrew Crisp
- Consultant Archaeologist Owen Barrett
- Consultant Archaeologist Meggan Walker
- Wailwan Aboriginal Group Site Officer Phil Boney
- Wailwan Aboriginal Group Site Officer Braydon MacDougall
- Wailwan Aboriginal Group Site Officer Joshua MacDougall
- Wailwan Aboriginal Group Site Officer Joseph Hampton
- Wailwan Aboriginal Group Site Officer Kyleiah Caldeel
- Kamilaroi Yankuntjatjara Working Group Site Officer Jamie Currell
- Kamilaroi Yankuntjatjara Working Group Site Officer Kadibulla Khan
- Kamilaroi Yankuntjatjara Working Group Site Officer Grant Fenton
- Kamilaroi Yankuntjatjara Working Group Site Officer Ralph Hampton
- Kamilaroi Yankuntjatjara Working Group Site Officer -Belinda Jackson

The study area was defined by property boundaries which spanned approximately 1 km east from Mamre rd. at Kemps Creek. While narrow at its street frontage, approximately 80 meters, it became wider at its eastern end to a width of approximately 500 m. This eastern portion was bounded by a high, roughly semicircular ridgeline which forms an upper catchment area which currently provides water to large and small dams within, and adjacent to, the study area. Prior to European occupation and subsequent land clearing and dam construction the study area was likely to have consisted of ephemeral water holes and swampy areas attracting native fauna and providing resources for Aboriginal people.

A total of two hundred and sixty-eight (268) 50cm by 50cm test units (TUs) were excavated within the subject area A low level background artefact scatter was identified in areas B and E. TU B58 and TU E33, with the highest artefact counts of 5 were expanded under Stage 2 of the test excavation program to refine an understanding of artefact distribution in these two areas. TU E47 approximately twenty (20) metres north of TU E33 also had five (five) artefacts and TU E66 approximately forty (40) metres south east of TU E33 was later found to have fourteen (14) artefacts however this was not discovered until the final days of the excavation program.

Table 13 - Stage 1 Artefact Count and Types from Areas A to G

Area	Number of Artefacts	Core	Distal Fragment	Flake	Flake Tool	Flaked Piece	Medial Flake	Other	Proximal Flake
Α	3	0	1	1	0	1	0	0	0
В	39	4	8	3	0	0	1	15	8
С	4	1	2	0	0	0	0	1	0
D	5	1	0	3	0	0	0	0	1
Е	45	5	2	8	2	0	0	18	10
F	2	0	0	1	0	0	0	1	0
G	0	0	0	0	0	0	0	0	0

Stage 1 archaeological test excavation was undertaken at five prominent landforms within the study area. These were divided into areas designated A to G; however, areas E, D and F formed a continuous stretch of lower slopes at varying distances from the original creek line.

Areas A and C: Moderate slopes on the southern and northern flanks, respectively, of the large dam in the eastern part of the study area within the upper catchment area surrounded by high ridgelines. Vegetation consisted of scattered mature eucalypts and casuarina groves with exotic grass and weed species. Twentyseven (27) Test units (TUs) were excavated at area A labelled A1 - A27. Twenty-seven TUs were also excavated at area C labelled C1-C27.and C. Area A returned three (3) artefacts and Area C returned four (4) artefacts.

Areas B and E: Located west and down slope of the afore mentioned large dam consisted of slightly raised areas north and south, respectively, of the original creek line and current swampy low-lying land forms and a small dam. Broad spurs rising from these areas to the upper catchment ridgeline may have provided a travel route to the lower lying flood plains. A low density artefact scatter was identified in these two locations. Vegetation in areas B and E consisted of sparse eucalypts and exotic grass and weed species. A small grove of casuarinas was located next to the small dam adjacent to area B. Under Stage 1 of the test excavation program one hundred (100) TUs were excavated at area B and sixty-seven (67) TUs were excavated at area E. Area B returned thirty-nine (39) artefacts and Area E returned forty-five (45) artefacts.

Areas D and F: These areas were a continuation of broad gentle slopes continuing west from area E towards Mamre Rd. These two areas were separated by cut and filled land on which a shed had been situated. Vegetation at areas D and F consisted of sparse living and dead eucalypts and exotic grass and weed species. Area D returned five (5) artefacts and area F returned two (2) artefacts.

Area G: Upper crest of the catchment area in the north-east of the study area. Vegetation in this area consisted of exotic grass species. Area G returned no artefacts.

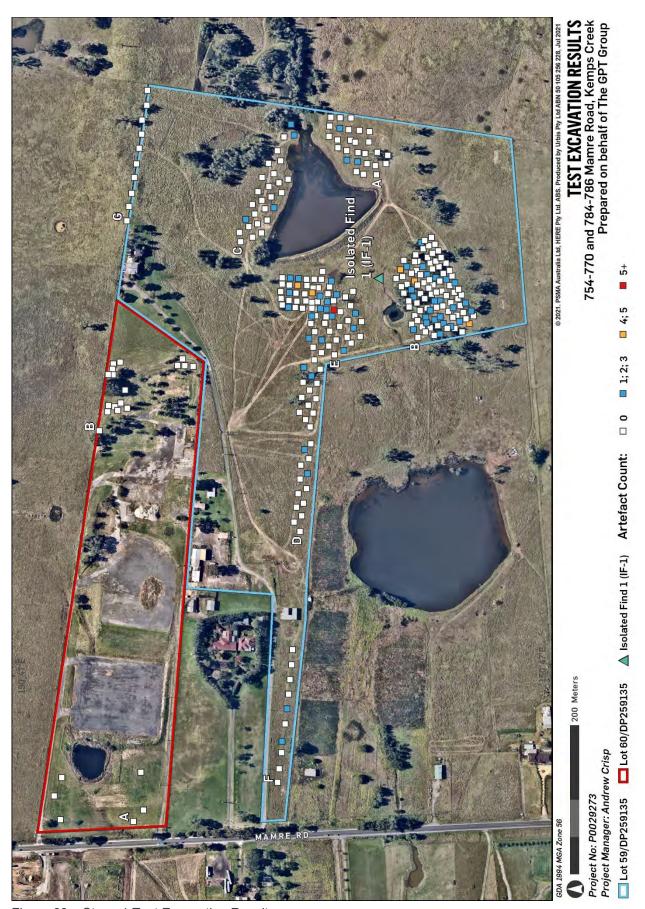


Figure 60 – Stage 1 Test Excavation Results



Figure 61 – Lot 59 Stage 1 Test Excavation Results, Transect A and Transect C

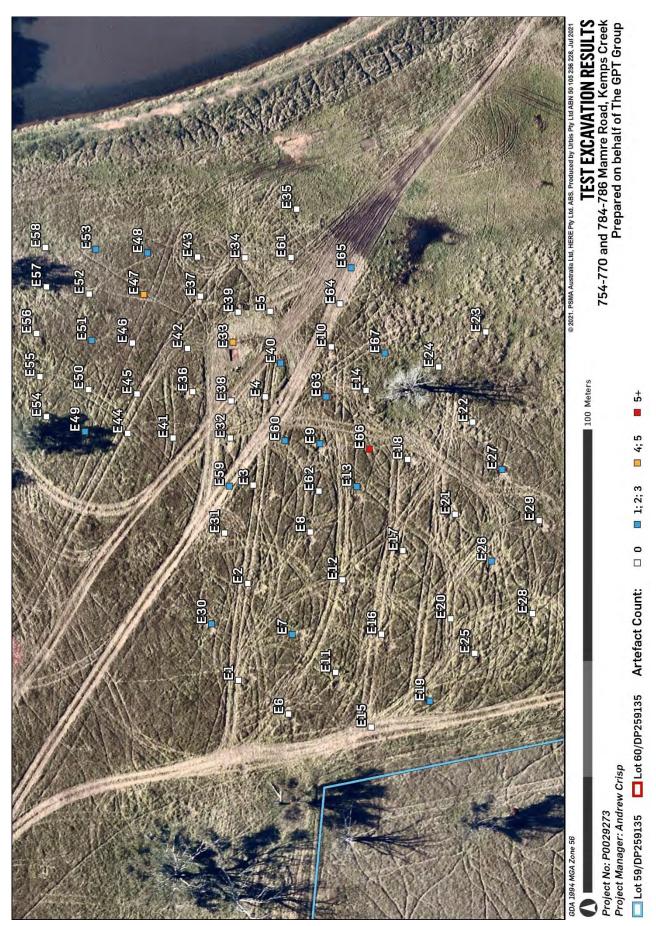


Figure 62 – Lot 59 Stage 1 Test Excavation Results, Transect E

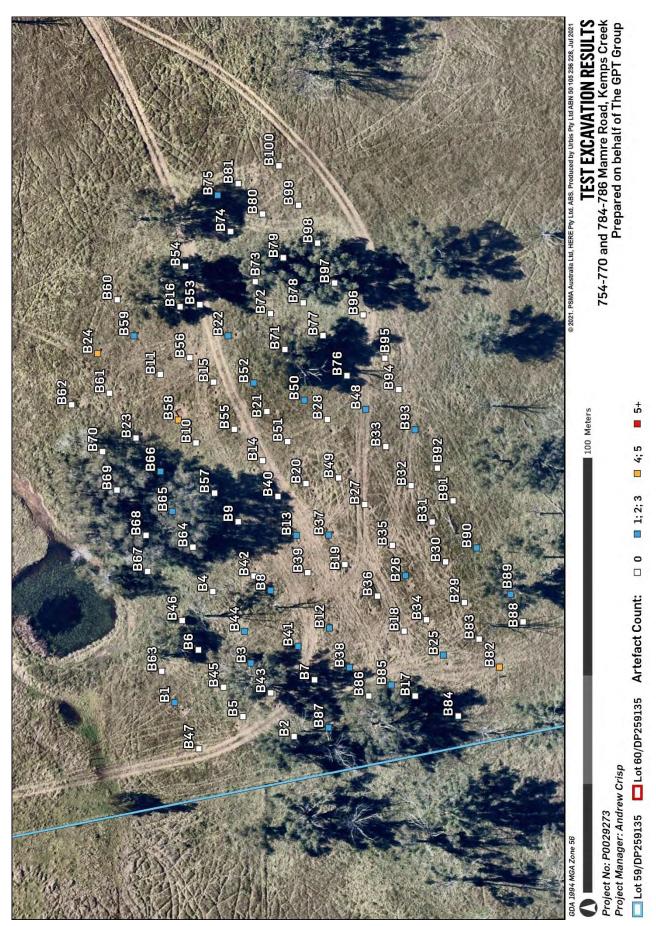


Figure 63 – Lot 59 Stage 1 Test Excavation Results, Transect B

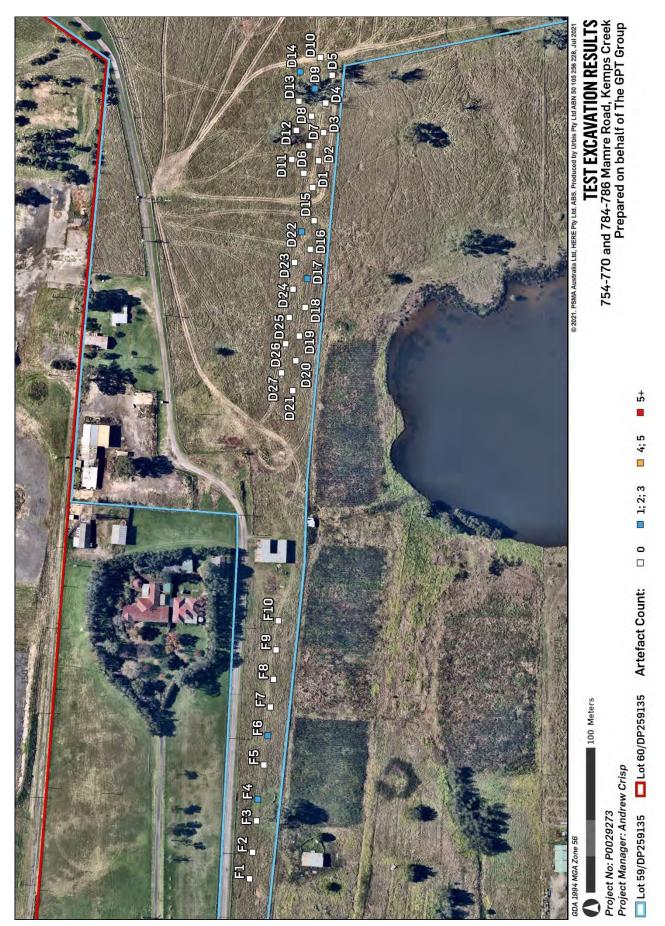


Figure 64 - Lot 59 Stage 1 Test Excavation Results, Transect D and Transect F

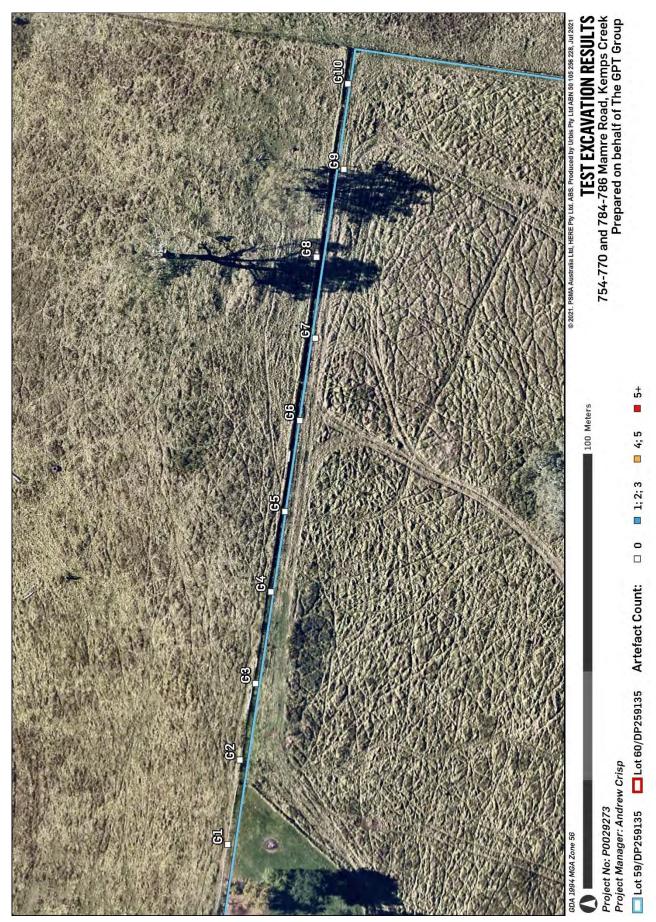


Figure 65 – Lot 59 Stage 1 Test Excavation Results, Transect G

2.11.1. Area A

Area A consisted of moderate slopes on the southern flank of the large dam in the eastern part of the study area within the upper catchment area surrounded by high ridgelines. Vegetation consisted of scattered mature eucalypts and casuarina groves with exotic grass and weed species.

Twenty-seven (27) Test units (TUs) were excavated at area A at 20m intervals on 6 transects spaced 10m apart. These were labelled A1-A27.

Soil profiles at area A displayed considerable variation in depth and levels of disturbance. Soils had an average depth of 15cm, and a depth range of 15cm to 30cm. The shallowest TUs showed signs of truncation and mechanical disturbance. The deeper TUs appeared to have intact soil profiles.



Figure 66 – Area A view north-west. Lower slopes adjacent to dam. Area C (lower slopes) and area G (ridge line) in background. Test pit A1 location in foreground.



Figure 67 – Area A view south-east. Gentle slopes rising to upper catchment ridgeline in east of study area. Location of Test pit A2 in foreground.

A typical undisturbed soil profile in Area A such as at A4 consisted of:

- I. 0-25cm: Dark brown silty clay loam; scattered baked clay and charcoal; few inclusions. Munsell 5YR 3/3. pH 6.5.
- II. 25cm to base: increasingly clayey bioturbated transition to:
- III. Base: yellowish to reddish silty clay. Munsell 5YR 4/4. pH 6.



Figure 68 – TU A4. Typical soil profile



Figure 69 – TU A17. Truncated and disturbed soil profile.

2.11.2. Area B

Area B was located west of the large dam in the east of the study area. It consisted of a slightly raised area south of the original creek line and current swampy low-lying land forms and a small dam. A broad spur rising from this area to the upper catchment ridgeline may have provided a travel route to the lower lying flood plains. A low-level artefact scatter was retrieved from Area B. Vegetation in area B consisted of sparse eucalypts and exotic grass and weed species. A small grove of casuarinas was located next to the small dam adjacent to Area B.

One hundred (100) TUs were excavated at area B and were labelled B1-B100. Initially test pits were placed at 20m intervals on multiple transects spaced 10m apart. A low-level artefact scatter was found across the landform with no clear focus, therefore further test pits were excavated to create a 10m grid covering the landform. This revealed a slightly higher concentration at TU B58 (five artefacts). TU58 was therefore flagged for expansion under Stage 2 to examine the nature and extent of the archaeological deposit in this location.

Soil profiles in area B showed considerable variation in depth and levels of disturbance. Soils had an average depth of 21cm and a depth range of 10cm to 45cm. As was the case in Area A, this variation was partially due to disturbance and erosion evident in some test units.



Figure 70 – Area B view south. Lower slopes below spur leading to upper catchment ridgeline. Location or TU B8 in foreground.



Figure 71 – Area B view north. Small dam and drainage line in background. Location of TU B58 in foreground.

A typical soil profile at Area B such as at B1 consisted of:

- 0-20cm: Reddish brown silty clay loam with few inclusions. Varying degrees of insect/ earthworm/tree root bioturbation. Munsell 7.5YR 3/3. pH 5.5.
- 11. 20cm -base: Bioturbated transition to:
- III. Base: reddish brown silty clay. Munsell 2.5YR 3/6.pH 6.



Figure 72 – Typical soil profile in Area B. TU B7.



Figure 73 – Truncated and disturbed soil profile. TU B32.

2.11.3. Area C

Area C consisted of moderate slopes on the northern flank of the large dam in the eastern part of the study area within the upper catchment area surrounded by high ridgelines. Vegetation consisted of one large mature eucalypt and casuarina groves with exotic grass and weed species.

Twenty-seven (27) Test units (TUs) were excavated at area C at 20m on four transects spaced 10m apart. These were labelled C1 - C27.

Soil profiles at area C displayed considerable variation in depth and levels of disturbance. Soils had an average depth of 23.5cm, and a depth range of 8cm to 48cm. The shallowest TUs showed signs of truncation and mechanical disturbance. The deeper TUs appeared to have intact soil profiles.



Figure 74 – Area C view west. Moderate to gentle slopes adjacent to dam. Location of TU27 in foreground.



Figure 75 – Area C view east towards upper catchment area. TU C16 in foreground.

A typical undisturbed soil profile in Area C such as at A4 consisted of:

- I. 0-25cm: Dark brown silty clay loam; scattered baked clay and charcoal; few inclusions. Munsell 5YR 3/3. pH 6.5.
- II. 25cm to base: increasingly clayey bioturbated transition to:
- III. Base: yellowish to reddish silty clay. Munsell 5YR 4/4. pH 6.

In the eastern part of Area C TUs C25, C26 and C27 displayed a deeper soil profile. TU C25 provides an indicative example consisting of

- I. 0-35cm: Very dark grey brown silty clay loam; scattered charcoal flecks; few other inclusions... Munsell 10YR 3/2. Diffuse transition to:
- II. 35-40cm: Pale grey, brown silty clay loam; ferromanganese flecks and small nodules <5mm -10%; Munsell 10YR 5/2.
- 40cm-base: Yellowish brown transition to: III.
- IV. Base: Reddish brown silty clay. Munsell 10YR 4/3.







Figure 77 – Typical soil profile. TU C24

2.11.4. Area D

Area D consisted of broad gentle slopes continuing west from area E towards Mamre Rd. Vegetation at Area D consisted of sparse living and dead eucalypts and exotic grass and weed species.

Twenty-seven (27) Test units (TUs) were excavated at Area D at 20m intervals on five transects spaced 10m apart. These were labelled D1 - D27.

Soil profiles at Area D were relatively uniform. Soils had an average depth of 24cm, and a depth range of 18cm to 34cm.



Figure 78 – Area D view south towards drainage line and dam in background. Location of D22 in foreground.



Figure – 79 Area D view north-east towards the upper ridge line in the north east of the study area.

A typical undisturbed soil profile in Area D such as at D4 consisted of:

- 0-20cm: Brown silty clay loam with few inclusions; Munsell 7.5YR 4/3. pH 6.
- 20cm to base:Bioturbated transition to: II.
- III. Base: Dark yellowish brown silty clay. Munsell 10YR 3/4. pH 6.5.



Figure 80 – A typical soil profile for Area D. TU D4



Figure 81 – A bioturbated soil profile. TU D10.

2.11.5. Area E

Area E was located west of the large dam in the eastern end of the study area. It consisted of a slightly raised area north of the original creek line and current swampy low-lying landforms and a small dam. A broad spur rising from this area to the upper catchment ridgeline may have provided a travel route to the lower lying flood plains. A low-level artefact scatter was retrieved from Area E. Vegetation in area E consisted of one dead mature eucalypt and exotic grass and weed species.

Sixty-seven (67) TUs were excavated at area E and were labelled E1-E67. TU E33 was extended to examine the extent of a higher concentration of artefacts. TUs were placed at 20m intervals on multiple spaced 10m apart. Extra TUs were placed to create a 10m grid to assess the extent of the artefact concentration centred at TU E33 (five artefacts).

Soil profiles in area E were relatively uniform in depth and showed little disturbance. Soils had an average depth of 28cm and a depth range of 19cm to 47cm. The exception was TU E23 in the lowest lying part of Area E which had a 33cm deep capping of mixed clay fill over 32cm of natural soil profile.

The lower lying TUs closest to the original creek line contained Ferromanganese nodules indicative of periodic saturation of the soil. This contributes evidence that the eastern portion of the study area contained ephemeral water sources in the past. Artefact distribution an Areas E and B adjacent to the creek line indicate this was a focus of activity for Aboriginal people in the past.



Figure 82 – Area E view north east towards upper ridge line. TU E5 in foreground.



Figure 83 – Area E view east TU E25 in foreground. Dammed drainage line in background.

A typical soil profile at Area E such as at E33 consisted of:

- I. 0cm-base: Reddish brown silty clay loam with few inclusions. Munsell 7.5YR 3/2. pH 6. Bioturbated transition to:
- Base: reddish brown silty clay. Munsell 7.5YR 4/4 pH 6.

A bleached ferromanganese rich soil profile closer to the original drainage line prior to dam construction such as at TU E10 consisted of:

- I. 0-20cm: Dark greyish brown silty loam; sparse Fe/Mn flecks and small nodules increasing with depth; Munsell Munsell 10YR 4/2; bioturbated transition to:
- II. 20 -30cm: Bleached zone, greyish brown; Munsell 10YR 5/2; Fe/Mn -10%; bioturbated transition
- III. Base: Brown silty clay; Munsell 10YR 5/3; grey in biopores.



Figure 84 – Area E TU E33. Animal burrow in east section.



Figure 85 – Ferromanganese rich bleached soil horizon. TU E10

2.11.6. Area F

Area F was located in the western end of the study area adjacent to Mamre Rd. In this area the landform levelled out to an undulating floodplain morphology associated with South creek. Vegetation consisted of one large eucalypt and exotic grasses and weeds.

Area F showed varying levels of disturbance such as post holes, mounds and depressions, and dumped rubbish. Test units (TUs), however, revealed predominantly intact soil profiles. F9 and F10 close to a shed in the east of Area F showed evidence of earthworks. F9 appeared truncated and F10 had a capping of redeposited soil and clay.

A total of ten (10) test units (Tus) were excavated in Area F on a single transect at 20m intervals and were labelled F1 – F10. TUs had a depth range of 20cm – 55cm with an average depth of 34cm.





Figure 86 - Area F view east.

Figure 87 - Area F view west.

A typical soil profile at Area F such as at F3 consisted of

- I. 0cm - base: Reddish brown silty clay loam with ironstone gravels increasing with depth; Munsell 7.5YR 5/4
- П. Base: Reddish brown silty clay. Munsell 2.5YR 3/6.



Figure 88 – Area F typical soil profile. TU F3



Figure 89 - TU F10 showing a capping of redeposited soil and clay.

2.11.7. Area G

Area G was located on the upper crest of the catchment area in the north-east of the study area. Vegetation in this area consisted of exotic grass species.

A total of ten (10) test excavation units were excavated on a single transect at twenty metre intervals. These were labelled G1 - G10. The transect was placed parallel to the property boundary close to the crest of the landform. Soil depth had a range of 22cm – 40cm with an average depth of 29cm. Soils were relatively uniform, with varying amounts of degraded bedrock. Only TU G3 with the shallowest profile appeared to have been disturbed.





Figure 90 – Area G view east. TU G1 in foreground.

Figure 91 – Area G view west. TU G6 in foreground.

A typical soil profile at Area G such as at G5 consisted of

- I. 0cm - base: Dark reddish brown silty clay loam with degrading bedrock small and large pieces. Munsell 5YR 3/4.
- П. Base: Dark reddish brown clay. Munsell 7.5YR 3/3.



Figure 92 - Area FG typical soil profile. TU G5.



Figure 93 – Disturbed soil profile in TU G3

STAGE 2 TEST EXCAVATION RESULTS – LOT 59 DP 259135 2.12.

2.12.1. **Open Area B**

Area B was located west of the large dam in the eastern end of the study area. It consisted of a slightly elevated rise below a broad spur leading to the ridge line of the upper water catchment, and adjacent to a current swampy low-lying landform and a small dam. A low-level artefact scatter of 43 artefacts was retrieved from one hundred (100) test excavation units (TUs) across Area B during Stage 1.

TU B58 had the highest count at five (5) artefacts. The decision was made to expand TU B58 to examine whether there was a significant concentration of artefacts present or a continuation of a diffuse scatter. TU's adjacent to TU B58 on a 10 metre grid contained zero (0) artefacts to the east, south and west and one (1) to the north which provided an outer limit of the artefact concentration if present.

Stage 2 expansion of TU B58 proceeded in 50cm x 50cm excavation units (EUs) which were sieved as soon as practicable to guide if and where further excavation units would be placed. This was to continue until the focus and outer edges of the artefact scatter could be identified or until limits specified in OEH's Code of practice for archaeological investigation of Aboriginal objects in NSW Requirement 16, 5 (i) which imposes a constraint on the maximum extent of open area excavations within a test excavation. A total of twenty-nine (29) additional EUs were excavated at Open Area B.

Soil profiles were consistent throughout Open Area B with only slight variations in depth.

A typical soil profile at Area B consisted of:

- I. 0-20cm: Reddish brown silty clay loam with few inclusions. Munsell 7.5YR 3/3. pH 5.5.
- 20cm -base: Bioturbated transition to: II.
- Base: reddish brown silty clay. Munsell 2.5YR 3/6.pH 6 III.

Disturbance was limited to one infilled animal burrow. See Figure 101 below.

The first step of the process was to expand in the shape of a cross with a further excavation unit to the north, south, east and west to immediately provide some directionality to the archaeological deposit. Figure 94 and Figure 95 below show this initial phase of expansion.



Figure 94 – Open Area B. View north



Figure 95 – Extension B plan view.

The northern expansion of these four EUs contained five (5) artefacts, triggering the next stage of expansion which involved completing a 1.5m x 1.5m square. Figure 96 and Figure 97 below show this stage of excavation.



Figure 96 - Open Area B 1.5 x 1.5m square view north

Figure 97 - Open area B plan view

Excavation continued by expanding to follow artefact densities. Figure 98 to Figure 99 below show intermediate stages of excavation at Open Area B.



Figure 98 – Open Area B intermediate stage. View north



Figure 99 - Open Area B. Plan view



Figure 100 – Open Area B south section



Figure 101 – Open Area B. Animal burrow disturbance.

Excavation continued until limits imposed by OEH's Code of practice for archaeological investigation of Aboriginal objects in NSW was met. Final photographs of open Area B can be seen below.



Figure 102 - Open Area B view north



Figure 103 - Open Area B view east



Figure 104 – Open Area B view south



Figure 105 – Open Area B view west



Figure 106 – Open Area B north section



Figure 107 – Open Area B east section



Figure 108 – Open Area B south section



Figure 109 – Open Area B west section

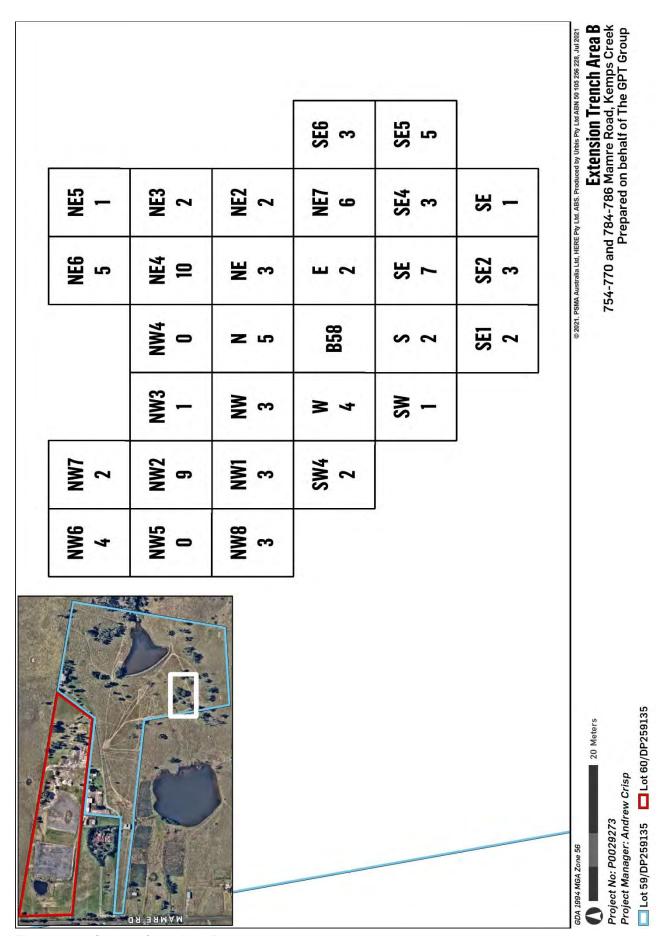


Figure 110 – Stage 2 Open Area B

2.12.2. **Open Area E**

Area E was located west of the large dam in the eastern end of the study area. It consisted of a slightly elevated rise and lower slopes below a broad spur leading to the ridge line of the upper water catchment, and adjacent to a current swampy low-lying landform. A low-level artefact scatter of fifty (50) artefacts was retrieved from sixty-seven (67) test excavation units (TUs) across Area E. TU E33 which was chosen for expansion had an artefact count at five (5). TU47 approximately twenty (20) metres north of TU E47 also had five (five) artefacts and TU E66 approximately forty (40) metres south east of TU E33 was later found to have fourteen (14) artefacts however this was not discovered until the final days of the excavation program.

Expansion into an open area excavation was undertaken at TU E33 to examine whether there was a significant concentration of artefacts present or a continuation of a diffuse scatter. TU's adjacent to TU E33 at 10 metre intervals contained low numbers of artefacts, zero to two (0-2), which indicated an outer limit of the artefact concentration if present.

Expansion of Open Area E proceeded in 50cm x 50cm excavation units (EUs) which were sieved as soon as practicable to guide if and where further excavation units would be placed. This was to continue until the focus and outer edges of the artefact scatter could be identified or until limits specified in OEH's Code of practice for archaeological investigation of Aboriginal objects in NSW Requirement 16, 5 i which imposes a constraint on the maximum extent of open area excavations within a test excavation. A total of twenty-four (24) additional EUs were excavated at Open Area E.

The soil profile within the open area excavation were consistent with TU E33, with only slight variations in depth.

A typical soil profile at Open Area E consisted of:

- I. 0cm-base: Reddish brown silty clay loam with few inclusions. Munsell 7.5YR 3/2. pH 6. Bioturbated transition to:
- П. Base: reddish brown silty clay. Munsell 7.5YR 4/4 pH 6.

Disturbance was confined to a small animal burrow in TU E33 which continued into the adjacent EU to the east and a burnt tree root in the north-east of the open area excavation.

The first step of the process was to expand in the shape of a cross with a further excavation unit to the north, south, east and west to immediately provide some directionality to the archaeological deposit. These four EUs contained artefacts with the highest number (eight) in the western EU therefore the next stage involved completing a 1.5m x 1.5m square. The figures below show this stage of excavation.



Figure 111 – Open Area E 1.5 x 1.5m square view south. Location of Open Area B in mid background



Figure 112 - Open area E plan view

Excavation continued by expanding to follow artefact densities. The figures below show intermediate stages of excavation at Open Area E.





Figure 113 - Open Area E intermediate stage. View north

Figure 114 - Open Area E. Plan view

Excavation continued Excavation continued until limits imposed by OEH's Code of practice for archaeological investigation of Aboriginal objects in NSW was met. Final photographs of open Area E can be seen below.



Figure 115 - Open Area E view north



Figure 116 - Open Area E view east



Figure 117 – Open Area E view south



Figure 118 – Open Area E view west



Figure 119 – Open Area E north section



Figure 120 – Open Area B east section



Figure 121 – Open Area E south section



Figure 122 – Open Area E west section

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	NW5	SW2 10	SW5
	SW7 16	SW3 11	SW4 14
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Figure 123 – Stage 2 Open Area E

GDA 1994 MGA Zone 56

2.13. ISOLATED FIND 1 (IF1)

Isolated Find 1 (IF1) consisted of a red silcrete flake located in the eastern part of the subject area at GPS coordinates 0295424E, 6253350N. It was located in the open depression between Areas B and E, which had the highest concentration of artefacts in the subject area, approximately forty-five (45) metres north of Open Area B and approximately ninety-one (91) metres south of Open Area E.

The site context was an eroded and disturbed drainage channel which feeds the small dam between Areas B and E. The ground surface contained a lag deposit of natural ironstone gravels and introduced gravels. Modern inclusions of asbestos, ceramic, brick and concrete had also been deposited in the drainage channel.

Figure 124 below shows the location of IF1 in a swampy drainage line between two dams. Figure 125 shows the eroded ground surface with modern inclusions. The location of IF1 is marked by the scale.



Figure 124 - Location of Isolated find in drainage line centre midground. View north.



Figure 125 - Ground surface. Erosion and modern inclusions.



Figure 126 - IF1



Figure 127 - IF1

Figure 128 and Figure 129 below show examples of the introduced modern materials also present at the location of F1.



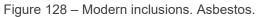




Figure 129 – Modern inclusions. Brick.

CONSULTATION PROCESS

In administering its statutory functions under Part 6 of the NSW National Parks and Wildlife Act 1974, the Department of Premier and Cabinet (DPC) requires that Proponent consult with Aboriginal people about the Aboriginal cultural heritage values (cultural significance) of Aboriginal objects and/or places within any given development area in accordance with Clause 80c of the NSW National Parks and Wildlife Regulation, 2009.

The DPC maintains that the objective of consultation with Aboriginal communities about the cultural heritage values of Aboriginal objects and places is to ensure that Aboriginal people have the opportunity to improve ACHA outcomes by (DECCW 2010a):

- Providing relevant information about the cultural significance and values of Aboriginal objects and/or places.
- Influencing the design of the method to assess cultural and scientific significance of Aboriginal objects and/or places.
- Actively contributing to the development of cultural heritage management options and recommendations for any Aboriginal objects and/or places within the proposed subject area.
- Commenting on draft assessment reports before they are submitted by the Proponent to the DPIE.

Consultation in line with the Consultation Requirements (DECCW 2010) is a formal requirement where a Proponent is aware that their development activity has the potential to harm Aboriginal objects or places. The DPC also recommends that these requirements be used when the certainty of harm is not vet established but a proponent has, through some formal development mechanism, been required to undertake a cultural heritage assessment to establish the potential harm their proposal may have on Aboriginal objects and places.

The Consultation Requirements outline a four-stage consultation process that includes the following:

- Stage 1 Notification of project proposal and registration of interest.
- Stage 2 Presentation of information about the proposed project.
- Stage 3 Gathering information about the cultural significance.
- Stage 4 Review of draft cultural heritage assessment report.

The document also outlines the roles and responsibilities of the DPC, Registered Aboriginal Parties (RAPs) including Local and State Aboriginal Land Councils, and proponents throughout the consultation process.

To meet the requirements of consultation it is expected that proponents will:

- Bring the RAPs, or their nominated representatives, together and be responsible for ensuring appropriate administration and management of the consultation process.
- Consider the cultural perspectives, views, knowledge and advice of the RAPs involved in the consultation process in assessing cultural significance and developing any heritage management outcomes for Aboriginal objects(s) and/or places(s).
- Provide evidence to the DPIE of consultation by including information relevant to the cultural perspectives, views, knowledge and advice provided by the RAPs.
- Accurately record and clearly articulate all consultation findings in the final ACHAR.
- Provide copies of the cultural heritage assessment report to the RAPs who have been consulted.

The consultation process undertaken to seek active involvement from relevant Aboriginal representatives for the project followed the current NSW statutory guideline, namely, the Consultation Requirements. Section 1.3 of the Consultation Requirements describes the guiding principles of the document. The principles have been derived directly from the principles section of the Australian Heritage Commission's Ask First: A guide to respecting Indigenous heritage places and values (Australian Heritage Commission 2002).

The following outlines the process and results of the consultation conducted during this assessment to ascertain and reflect the Aboriginal cultural heritage values of the subject area.

STAGE 1: NOTIFICATION OF PROJECT PROPOSAL AND REGISTRATION OF 3.1. INTEREST

3.1.1. Government Organisation Contacts

The aim of Stage 1 is to identify, notify and register Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the subject area.

A search of the Register of Native Title Claims and the National Native Title Register was undertaken on 25 August 2020. The search did not identify any Native Title Determination Applications, Determinations of Native Title, or Indigenous Land Use Agreements over the identified area. The subject area is a freehold tenure which extinguishes Native Title.

To identify Aboriginal people who may be interested in registering as Aboriginal parties for the project, the organisations stipulated in Section 4.1.2 of the Consultation Guidelines were contacted (refer to Table 14).

Table 14 - Contacted Organisations

Organisation	Date notification sent	Date response received
Office of the Registrar, Aboriginal Land Rights Act 1983	06/07/2020	28/07/2020
Heritage NSW, Department of Premier and Cabinet	06/07/2020	10/07/2020
NTS Corp	06/07/2020	N/A
Deerubbin Local Aboriginal Land Council	06/07/2020	N/A
Local Land Services, Greater Sydney	06/07/2020	N/A
Penrith City Council	06/07/2020	23/07/2020
National Native Title Tribunal	25/08/2020	26/08/2020

The template for the emails sent to the above-mentioned organisations is at Appendix C. A total of 59 Aboriginal groups and individuals with an interest in the subject area were identified following this stage. These groups were contacted, with further information presented at Section 3.1.2 below.

3.1.2. Registration of Interest

In accordance with Section 4.1.3 of the Consultation Guidelines, letters were sent to the 59 Aboriginal groups and individuals via email on 29th July 2020, or by post on 5th August 2020 (depending on the method identified by each group), to notify them of the proposed project. A total of 52 were sent via email, with 8 sent by registered post. The letters afforded a response time of greater than 14 days, being 26th August 2020 in accordance with the 14-day minimum requirement.

A total of 17 groups registered interest in the project as a result of this phase within the nominated timeframe and a further 3 groups registered after the deadline (Table 15). Acknowledgement emails or telephone calls were made by Urbis to respondents, to confirm registration had been received.

Table 15 - Stage 1 Consultation - Registration of Interest

Organisation/Individual	Contact Person	
Deerubbin Local Aboriginal Land Council	Steve Randall	
A1 Indigenous Services	Carolyn Hickey	
Amanda Hickey Cultural Services	Amanda DeZwart	

Organisation/Individual	Contact Person
Aragung Aboriginal Cultural Heritage Site Assessments	Jamie Eastwood
Barraby Cultural Services	Lee Field
Barking Owl Aboriginal Corporation	Jody Kulakowski
Butucarbin Aboriginal Corporation	Jennifer Beale
Clive Freeman	Clive Freeman
Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson
Darug Custodian Aboriginal Corporation	Justine Coplin
Dharug Ngurra Aboriginal Corporation	Dirk Schmitt
Didge Ngunawal Clan	Lilly Carroll / Paul Boyd
Gulaga	Wendy Smith
Gunjeewong Cultural Heritage Aboriginal Corporation	Cherie Carroll Turrise
Kamilaroi Yankuntjatjara Working Group	Phil Khan
Merrigarn	Shaun Carroll
Muragadi Heritage Indigenous Corporation	Jesse Johnson
Murra Bidgee Mullangari Aboriginal Corporation	Darleen Johnson / Ryan Johnson
Wailwan Aboriginal Group	Philip Boney
Yulay Cultural Services	Arika Jalomaki
Yurrandaali Pty Ltd	Bo Field

3.1.3. Newspaper advertisements

In accordance with Section 4.1.3 of the Consultation Guidelines, an advertisement was placed in one local newspaper, the Koori Mail. This advertisement was published in the Koori Mail paper on the 12 August 2020 providing 14 days to register an interest in accordance with the Consultation Requirements.

A copy of the advertisement is included at in Appendix B.

The list of Registered Aboriginal Parties (RAPs) was provided to DPC and the Deerubbin Local Aboriginal Land Council on the 11 September 2020 (see Appendix B).

STAGE 2: PRESENTATION OF INFORMATION ABOUT THE PROPOSED 3.2. PROJECT

The aim of Stage 2 is to provide registered Aboriginal parties with information about the scope of the proposed project, and the proposed cultural heritage assessment process. A combined Stage 2 and 3 Information Pack which included a brief introduction to the project, the project location, and AHIMS search result to provide understanding of the registered cultural sites in the local area, was sent to registered Aboriginal parties via email on the 11 September 2020. Request for response to the Information Packet was set to 9 October 2020.

The Information Pack was prepared as a combination of Stage 2 and 3 of the Consultation Guidelines, and included the following information:

- Project overview, location and purpose.
- Proposed works.
- Brief environmental and historical background.
- Notification of the site inspection.
- Protocol of gathering information on cultural heritage significance.
- Request for comment on methodology and recommendations for site investigation, and request for any cultural information the respondent wished to share.

The letter is included at Appendix B of this report.

3.3. STAGE 3: GATHERING INFORMATION ABOUT CULTURAL SIGNIFANCE

Stage 3 is concerned with gathering feedback on a project, proposed methodologies, and obtaining any cultural information that registered Aboriginal parties wish to share. This may include ethno-historical information, or identification of significant sites or places in the local area.

Nine responses to the Stage 2/3 Information Pack were received and are included in Table 16 below.

Table 16 - RAP response to Stage 2/3 documentation

RAP	Response	Urbis Response
Didge Ngunawal Clan	DNC is happy with the go ahead for Mamre Rd / Kemp's Creek project	Acknowledged and included in consultation log.
Corroboree Aboriginal Corporation	We connect thru our Mother Earth on all of Australia. We are Aboriginal people whose family have lived in the area and surrounding area We as Aboriginal people are traditional owners. We are Aboriginal people whose family have lived in the area and surrounding areas. We have worked on surveys in the area for many years. We represent as Aboriginal people for the benefit of all Aboriginal people to aid the preservation of our heritage, our history, our culture. We our members and stakeholders represent the members of Corroboree Aboriginal Corporations and also as Aboriginal people. Our family have knowledge of cultural heritage in the area and surrounding areas. We have discussions and meetings about the cultural heritage of our people. We share field experience and cultural finds, and relevant information with the members/RAPS of the Corporation. They can then share it further with other aboriginal people finds with our corporation members and the broader community. We have worked with a vast number of Archeologists on behalf of the proponent and have always engaged in a professional and timely manner. Any information would be relayed to the	Acknowledged and included in consultation log.

	archeologists to shared with the proponent. This is how it's been done for many years.	
Gunjeewong Cultural Heritage Aboriginal Corporation	Aboriginal people are traditional owners. Aboriginal people our family have lived in the area and surrounding areas. We worked on surveys in the area.	Acknowledged and included in consultation log.
	We have regular meetings. We have worked with Archeologists on behalf of the proponent in a professional manner. Any information forwarded via archeologists to the proponent.	
Aragung Aboriginal Cultural Heritage Site Assessments	I have read the information in its entirety and agree with all recommendations put forth	Acknowledged and included in consultation log.
Yurrandaali Pty Ltd	I on behalf of Yurrandaali have reviewed and agree with the methodology for this project.	Acknowledged and included in consultation log.
	I have previously been involved and assisted in other projects within close proximity to the project area, such as the M12 Motorway and the WSA. Both projects were able to identify Aboriginal occupation in the Kemps Creek area and contained very high numbers of artefacts retrieved from PADs identified as Aboriginal camp sites and knapping sites, especially those areas within close proximity to the creeks. South Creek in particular is a very rich area and I believe that the project area definitely has potential to contain artefact scatters and PADs.	
	The Kemps Creek and surrounding areas were of great importance to Aboriginal people in the past and still remain very important to us RAPs whom share a connection with those who occupied the lands thousands of years ago. I would like the opportunity to be able participate	
	and be included in both the field inspection and the test excavation program.	
Barraby Cultural Services	I on behalf of Barraby Cultural Services have reviewed and agree with the methodology for this project.	Acknowledged and included in consultation log.
	I have previously been involved and assisted in other projects within close proximity to the project area, such as the M12 Motorway and the WSA. Both projects were able to identify Aboriginal occupation in the Kemps Creek area and contained very high numbers of artefacts retrieved from PADs identified as Aboriginal camp sites and	

knapping sites, especially those areas within close proximity to the creeks. South Creek in particular is a very rich area and I believe that the project area definitely has potential to contain artefact scatters and PADs. The Kemps Creek and surrounding areas were of great importance to Aboriginal people in the past and still remain very important to us RAPs whom share a connection with those who occupied the lands thousands of years ago. I would like the opportunity to be able participate and be included in both the field inspection and the test excavation program. Kamilaroi I believe the study area has high potential for Acknowledged and included Yankuntjatjara Aboriginal cultural heritage, as Kemps creek is in consultation log. Working Group close by and may have room for Aboriginal finds. I believe further testing should be undertake as the area is highly significant to us Aboriginal people. A1 Indigenous Acknowledged and included I am a Traditional Owner, I have had 16 years Services Pty Ltd experience in cultural heritage field work, I hold in consultation log. Cultural knowledge to determining the cultural significance of any Aboriginal objects and values that exist within the project area. The Kemps Creek area was a important location for the indigenous people, it was the main travel route from North to South. There are many camp grounds located in this area and any investigation into this area will yield many Artefacts that were discarded through their travels. We are a company with a heavy focus on providing employment opportunities for Indigenous youths between the ages of (17 - 30) Continuing the tradition of passing down knowledge and keeping culture Clive Freeman I will be completing the read over of these Acknowledged and included documents this week and will let you know via in consultation log. email if I have any comment.

STAGE 4: REVIEW OF DRAFT CULTURAL HERITAGE ASSESSMENT 3.4. REPORT

The aim of Stage 4 is to prepare and finalise an ACHAR with input from registered Aboriginal Parties.

The Draft ACHAR was provided to all groups who registered on 9th July 2021, with the date for response set to 6th August 2021, providing 28 days for comment as stipulated for receiving submissions. Comments and responses to the Draft ACHA are included in Table 17 below.

Table 17 - RAP response to Stage 4 documentation

RAP	Response	Urbis Response
Kamilaroi Yankuntjatjara Working Group	Thank you for your report for ACHA for 754-770 & 784-786 Mamre Road. Here at K.Y.W.G we hold over 50 years of cultural knowledge, our aspiration is to conserve our cultural heritage and our aim is to pass on cultural knowledge. Aboriginal people have walked this land for tens of thousands of years and continue to do so. We follow the water ways as they provide resource, we hold a deep connection with mother earth and we are guided by the skies.	Acknowledged and included in consultation log.
	Aboriginal people would camp, hunt, gather, practice lore and followed customs all across mother earth, we protect our sacred sites such as men's and woman's sites. The whole study area is highly significant to our people as we occupied the land. There are water ways that hold significant to us and sky knowledge that is recognised to us.	
	We would like to agree to your recommendations, we strongly push for salvage and we agree to your report. We look forward to working alongside you on this project.	
A1 Indigenous Services	I have reviewed the document and support the Information in the draft ACHAR and ATR.	Acknowledged and included in consultation log.
Gulaga	Received, thank you.	Acknowledged and included in consultation log.

3.5. SUMMARY

To date, feedback received has been positive and in support of the methodology utilised, assessment undertaken to date and recommendations made. Numerous groups (KYWG, A1 Indigenous Services Pty Ltd, Yurrandaali Pty Ltd and Barraby Cultural Services) have identified that the Kemps Creek area is of high cultural significance and confirm the high potential for Aboriginal archaeological sites within the subject area.

A copy of the final ACHAR was provided to all Project RAPs on 30 August 2021.

4. CULTURAL HERITAGE VALUES AND STATEMENT OF SIGNFICANCE

4.1. METHODS OF ASSESSING HERITAGE SIGNIFICANCE

Heritage significance is assessed by considering each cultural, or archaeological site, against the significance criteria set out in the Assessment Guidelines. In all case, the assessment of significance detailed below is informed by the Aboriginal community, which is documented in this report. If any culturally sensitive values were identified they would not be specifically included in the report, or made publicly available, but would be documented and lodged with the knowledge holder providing the information.

4.2. ASSESSMENT FRAMEWORK

The Burra Charter (Australia ICOMOS 1999) defines the basic principles and procedure to be observed in the conservation of important places. It provided the primary framework within which decisions about the management of heritage sites should be made. The Burra Charter defines cultural significance as being derived from the values listed below.

4.2.1. Social or Cultural Value

Social or cultural value refers to the spiritual, traditional, historical or contemporary associations and attachments the place or area has for Aboriginal people. Social or cultural values is how people express their connection with a place and the meaning that place has for them.

Places of social or cultural value have associations with contemporary community identity. These places can have associations with tragic or warmly remembered experiences, periods, or events. Communities can experience a sense of loss should a place of social or cultural value be damaged or destroyed.

There is not always a consensus about a place's social or cultural value. When identifying values, it is not necessary to agree with or acknowledge the validity of each other's values, but it is necessary to document the range of values identified.

Social or cultural values can only be identified through consultation with Aboriginal people. This could involve a range of methodologies, such as cultural mapping, oral histories, archival documentation and specific information provided by Aboriginal people specifically for the investigation.

When recording oral history:

- Identify who was interviewed and why.
- Document the time, place and date the interview was conducted.
- Describe the interview arrangements (the number of people present, recording arrangements, information access arrangements).
- Provide a summary of the information provided to the person being interviewed.
- Summarise the information provided by each person interviewed.

More information on conducting oral history projects can be found in OEH's publication Talking history: oral history guidelines.

Occasionally information about social value may not be forthcoming. In these circumstances, document the consultation process but make it clear in the discussions and conclusions about social value that this was the case.

4.2.2. Historic Value

Historic value refers to the associations of a place with a historically important person, event, phase or activity in an Aboriginal community. Historic places do not always have physical evidence of their historical importance (such as structures, planted vegetation or landscape modifications). They may have 'shared' historic values with other (non-Aboriginal) communities.

Places of post-contact Aboriginal history have generally been poorly recognised in investigations of Aboriginal heritage. Consequently, the Aboriginal involvement and contribution to important regional

historical themes is often missing from accepted historical narratives. This means it is often necessary to collect oral histories along with archival or documentary research to gain a sufficient understanding of historic values.

4.2.3. Scientific (Archaeological) Value

This refers to the importance of a landscape, area, place or object because of its rarity, representativeness and the extent to which may contribute to further understanding and information (Australian ICOMOS 1988).

Information about scientific values will be gathered through any archaeological investigation undertaken. Archaeological investigations must be carried out according to OEH's Code of practice for archaeological investigation of Aboriginal objects in NSW.

Scientific significance, also referred to as archaeological significance, is determined by assessing an Aboriginal heritage site or area according to archaeological criteria. The assessment of archaeological significance is used to develop appropriate heritage management and impact mitigation strategies.

Criteria for archaeological significance have been developed in accordance DPIE guidelines, as shown in Table 18 below.

Table 18 - Scientific (Archaeological) Value

Significance Criteria	Description
Research Potential	Does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state's natural and cultural history?
Representativeness	How much variability (outside and/or inside the subject area) exists, what is already conserved, how much connectivity is there?
Rarity	Is the subject area important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
Education Potential	Does the subject area contain teaching sites or sites that might have teaching potential?
Condition	What is the condition of the site? Does it appear to have been impacted/altered?

4.2.4. Aesthetic Value

This refers to sensory, scenic, architectural, and creative aspects of the place. It is often closely linked with the social values. It may consider form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use (Australian ICOMOS 1988).

4.3. IDENTIFYING VALUES

The information collected in the background review of the project can be used to help identify these values. The review of background information and information gained through consultation with Aboriginal people should provide insight into past events. These include how the landscape was used and why any identified Aboriginal objects are in this location, along with contemporary uses of the land.

Information gaps are not uncommon and should be acknowledged. They may require further investigation to adequately identify the values present across the subject area. It may be helpful to prepare a preliminary values map that identifies, to the extent of information available, the:

- Known places of social, spiritual, cultural value, including natural resources of significance.
- Known historic places.
- Known Aboriginal objects and/or declared Aboriginal places.

- Potential places/areas of social, spiritual, cultural value, including natural resources, historic or archaeological significance.
- Places of potential value that are not fully identified or defined should be included as 'sensitive' areas to target further investigation.

4.4. ASSESSING VALUES AND SIGNIFICANCE

This stage is used to assess and discuss the cultural significance of the values identified during the identification and assessment of cultural significance by consulting Aboriginal people and to prepare a statement of significance. The assessment of values is a discussion of what is significant and why. An assessment of values is more than simply restating the evidence collected during the background review and identification of values stages of the project. Rather, the assessment should lead to a statement of significance that sets out a succinct summary of the salient values that have been identified.

The assessment and justification in the statement of significance must discuss whether any value meets the following criteria (NSW Heritage Office 2001):

- Does the subject area have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons? – social value.
- Is the subject area important to the cultural or natural history of the local area and/or region and/or state? – historic value.
- Does the subject area have potential to yield information that will contribute to an understanding of the cultural or natural history of the local area and/or region and/or state? – scientific (archaeological) value.
- Is the subject area important in demonstrating aesthetic characteristics in the local area and/or region and/or state? – aesthetic value.
- Assessment of each of the criteria (above) should be graded in terms that allow the significance to be described and compared; for example, as high, moderate, or low. In applying these criteria, consideration should be given to:
 - Research potential: does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state's natural and cultural history?
 - Representativeness: how much variability (outside and/or inside the subject area) exists, what is already conserved, how much connectivity is there?
 - Rarity: is the subject area important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
 - Education potential: does the subject area contain teaching sites or sites that might have teaching potential?

Then discuss what is significance and why – this should be summarised into a statement of significance. Thus, the statement of significance is a succinct summary of the salient values drawn from the identification of values.

4.4.1. Assessment of Cultural Heritage Significance and Values

An assessment of cultural heritage significance and values incorporates a range of values which may vary for different individual groups and may relate to both the natural and cultural characteristics of places or sites. Cultural significance and Aboriginal cultural views can only be determined by the Aboriginal community using their own knowledge of the area and any sites present, and their own value system. All Aboriginal heritage evidence tends to have some contemporary significance to Aboriginal people, because it represents an important tangible link to their past and to the landscape.

Consultation with members of the local Aboriginal community (project RAPs) was undertaken to identify the level of spiritual/cultural significance of the subject area and its components. In acknowledgment that the Aboriginal community themselves are in the best position to identify levels of cultural significance, the project RAPs were invited to provide comment and input into this ACHAR and to the assessment of cultural heritage significance and values presented therein.

Feedback from the RAPs received has been positive and in support of the methodology utilised, assessment undertaken to date and recommendations made by the current ACHAR and associated ATR.

Numerous groups (KYWG, A1 Indigenous Services Pty Ltd, Yurrandaali Pty Ltd and Barraby Cultural Services) have identified that the Kemps Creek area, including the current subject area, is of high cultural significance and confirm the high potential for Aboriginal archaeological sites within the subject area.

4.4.2. Assessment of Scientific (Archaeological) Significance

In accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW*, and in consultation with representatives of the local Aboriginal community, the following assessment of the scientific (archaeological) significance of identified sites within the subject area has been prepared.

An archaeological scientific assessment has been undertaken for the subject area and is presented in detail as part of the attached Archaeological Technical Report.

The following archaeological significance assessment is based on Requirement 11 of the Code. Using the assessment criteria detailed in Scientific Values and Significance Assessment, an assessment of significance was determined and a rating for each site was determined.

4.5. STATEMENT OF SIGNIFICANCE

The following statement of significance are based on the results of the Aboriginal Cultural Heritage Assessment including site survey and test excavation programs (to be completed).

The significance of sites was assessed in accordance with the following criteria:

- Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines).
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010).
- The Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013 (Burra Charter.

The combined use of these guidelines is widely considered to represent the best practice for assessments of Aboriginal cultural heritage.

Isolated Find 01 (IF-1)

Isolate Find 01 (IF-1) is considered to represent low scientific significance. Common artefact and site type in the Cumberland Plain discovered in a disturbed context.

784-786 Mamre Road Subsurface Assemblage

Areas B and E of the 784-786 Mamre Road Subsurface Assemblage are considered to represent moderate scientific significance because of the moderate to high density of artefacts, reduction sequence and tool types.

The remainder of 784-786 Mamre Road Subsurface Assemblage is considered to represent low scientific significance. Low density subsurface assemblage, common artefact types produced from local silcrete resources. Distribution of artefacts was across the landscape and evident on all landforms predicted to contain subsurface deposits.

The subject area has been assessed as likely containing moderate to high cultural value to local Aboriginal communities.

The subject area has been assessed as possessing low historical value due to lack of historical connections.

The subject area is considered to have moderate aesthetic value due to impacts caused by farming and pastoral activities within the study area.

5. IMPACT ASSESSMENT

5.1. POTENTIAL HARM

This section identifies the potential impacts to cultural heritage arising from the proposal, including demolition, excavation, and construction phases. Harm can be direct or indirect, defined by the Assessment Guidelines as:

- Direct harm may occur as the result of any activity which disturbs the ground including, but not limited to, site preparation activities, installation of services and infrastructure, roadworks, excavation, flood mitigation measures.
- Indirect harm may affect sites or features located immediately beyond or within the area of the
 proposed activity. Examples include, but are not limited to, increased impact on art in a shelter from
 increased visitation, destruction from increased erosion and changes in access to wild food resources.

It is expected that the potential of harm to areas of archaeological potential from the proposed development within the subject area will be direct, with a total loss of value. Strategies to avoid or minimise harm to Aboriginal heritage in the subject area are discussed below in Section 6.

5.2. LIKELY IMPACTED VALUES

A summary of the potential impacts of the proposed works on known Aboriginal sites within the subject area is provided in Table 18 below.

Table 19 - Summary of potential archaeological impact

AHIMS site no.	Site name	Significance	Type of harm	Degree of harm	Consequence of harm
Pending	Isolated Find 01 (IF-1)	Low	Direct	Total	Total loss of value
Pending	784-786 Mamre Road Subsurface Assemblage	Moderate - High	Direct	Total	Total loss of value

5.3. CONSIDERATION OF INTER-GENERATIONAL EQUITY

5.3.1. Cumulative Impact Assessment

The principle of inter-generational equity (IGE) holds that the present generation should make every effort to ensure the health, diversity and productivity of the environment – which includes cultural heritage – is available for the benefit of future generations.

Cumulative impact of any development on Aboriginal sites assesses the extent of the proposed impact on the site and how this will affect both the proportion of this type of Aboriginal site in the area and the impact this destruction will have on Aboriginal cultural heritage values generally in the area.

For example, if an artefact scatter is destroyed during a proposed development, how many artefact scatters are likely to remain in that area and how will the destruction of that site affect the overall archaeological evidence remaining in that area? If a site type that was once common in an area becomes rare, the loss of that site (and site type) will affect our ability to understand past Aboriginal land uses, will result in an incomplete archaeological record and will negatively affect intergenerational equity.

Given the Archaeological (low to moderate, dependent on location) and Cultural (moderate to high) significance identified through the consultation and scientific investigation of this ACHA it is considered that, at present, the cumulative impact caused by the development would be moderate. In response to this the recommendation has been made to conduct a salvage excavation to increase the level of recovered artefacts, bolster our scientific understanding and to facilitate cultural input and involvement by the local Aboriginal community.

After the recommendations of this ACHAR have been fulfilled the cumulative impact of the proposed development would be mitigated and reduced to an acceptable level.

6. AVOIDING AND MINIMISING HARM

Avoidance of impact is the preferred mitigation and management strategy and should be implemented where practicable. As previously mentioned, the proposed development requires the complete impact of the subject area (bulk earthworks, truncation, terracing and the like) and as a result avoidance of impact to any subsurface archaeological assemblage is not feasible.

It is not feasible for the proposed works to completely avoid impacts to the identified archaeological resources within the subject area; therefore the following mitigation measures, which considered the principles of ecologically sustainable development (ESD) and intergenerational equity in their design, are proposed below.

6.1. ARCHAEOLOGICAL SALVAGE EXCAVATION AT OPEN AREA B, OPEN AREA E AND TEST UNIT E66 POST-SSDA APPROVAL AND PRIOR TO CONSTRUCTION

It is recommended that salvage excavation be conducted for Open Area B, Open Area E and Test Unit E66 to recover sub-surface artefacts which will be impacted as a part of the proposed development. The purpose of the salvage excavation is to provide conclusive data on the artefact typology, material type and subsurface density/extent.

It is recommended that this be undertaken as a condition of the SSDA approval and prior to construction.

The additional salvage report will be produced following the completion of the salvage excavation and provided as an addendum report.

6.2. SURFACE COLLECTION POST-SSDA APPROVAL AND PRIOR TO CONSTRUCTION

Following SSDA approval and prior to construction surface collection of the isolated surface artefact IF1 must be undertaken in accordance with the Code of Practice and with the involvement of the Registered Aboriginal Parties.

Isolated Find 01 (IF-1) – GPS coordinates 0295424E, 6253350N

6.3. REPATRIATION OR DEPOSITION IN KEEPING PLACE

Through consultation with the RAPs a decision will be made as to the destination for the artefacts recovered during both the test excavation and surface collection programs.

Care and Control of Artefacts

Through the ACHA process a determination will be made in consultation with the RAPs the final keeping place of the artefacts collected during the project. All project artefacts will be sorted and packaged in accordance with Australian Museum Standards. The general options are:

Option 1: Deerubbin LALC enters into a Care and Control agreement and the artefacts are then stored at their designated keeping place (Old Parramatta Gaol).

Option 2: Repatriation of artefacts to 'Country'. Following construction of proposed development the artefacts would be reburied within the subject area and the location registered on AHIMS.

Option 3: Designation of alternative keeping place such as local museum, Australian Museum or with other RAP group.

7. CONCLUSIONS

Urbis Pty Ltd (Urbis) has been engaged by The GPT Group (the proponent) to produce an Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 & 784-786 Mamre Road, Kemps Creek (Lots 59 & 60 DP 259135) (hereafter referred as the 'subject area'). The ACHA informed the preparation of this Aboriginal Cultural Heritage Assessment Report (ACHAR), which will accompany State Significant Development (SSD) application for a warehousing and distribution centre within the subject area. This Archaeological Technical Report (ATR) has been prepared to accompany the ACHAR.

This ATR is intended to detail the methodology and results of test excavation. Refer to Section 1.2 of the ACHAR for detailed information regarding the proposed development at the subject area.

This ATR has been prepared in accordance with the following statutory guidelines:

- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) (CoP).

Test excavation was undertaken in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) to understand the nature, extent, integrity and research significance of the Aboriginal archaeological resource. The test excavation also aimed to sample the various landscape features for any potential sub-surface archaeological deposits.

The test excavation included:

- The Stage 1 and Stage 2 test excavation undertaken in the subject area (Lot 59 and 60 DP 259135) recovered 370 Aboriginal objects, all stone artefacts, from a total of 344 excavated test units (TUs) and expansion units (EUs).
- The highest densities of artefacts were located in Areas B and E (Lot 59 DP 259135).
- Area B contained 138 artefacts out of 129 excavated test pits and accounted for 37 % of the total subsurface assemblage.
- Area E contained 219 artefacts out of 91 excavated test pits and accounted for 59 % of the total subsurface assemblage.
- The remaining Areas A, C, D, F and G contained very low artefact densities
- All excavated material was wet sieved through a 5mm metal sieve station.

The predictive model formulated for the ACHAR anticipated that artefact scatters, PADs and isolated finds had moderate-high potential to occur in areas of low historical ground disturbance, on the basis of the distribution of artefact sites in the region as well as the landscape features present – including elevated ground/terraces associated with waterways and crests/spurs.

The results of the test excavation confirmed:

- Artefacts found during the test excavation program were predominantly concentrated adjacent to the waterway running through the subject area, specifically in Areas B and E. The entirety of the subsurface assemblage was situated within the alluvial terraces/lower slopes in proximity to the water course.
- Distance from water correlated with reduced artefact density. The crest landform portion of the subject area excavated (Area G) contained zero subsurface assemblage.
- The evidence gathered during the archaeological Stage 1 and Stage 2 test excavations indicates that Areas E and B contain evidence of a long term or repeat camp sites. The archaeological test excavations conducted at Open Areas B and E have identified moderate density, relatively intact subsurface deposits.
- Areas B and E of the 784-786 Mamre Road Subsurface Assemblage are considered to represent moderate scientific significance because of the moderate to high density of artefacts, reduction sequence and tool types.
- The remainder of 784-786 Mamre Road Subsurface Assemblage is considered to represent low scientific significance. Low density subsurface assemblage, common artefact types produced from local silcrete

resources. Distribution of artefacts was across the landscape and evident on all landforms predicted to contain subsurface deposits.

- Isolate Find 01 (IF-1) is considered to represent low scientific significance. Common artefact and site type in the Cumberland Plain discovered in a disturbed context.
- Feedback from the RAPs received has been positive and in support of the methodology utilised, assessment undertaken to date and recommendations made by the current ACHAR and associated ATR.
- Numerous groups (KYWG, A1 Indigenous Services Pty Ltd, Yurrandaali Pty Ltd and Barraby Cultural Services) have identified that the Kemps Creek area, including the current subject area, is of high cultural significance and confirm the high potential for Aboriginal archaeological sites within the subject area.

8. **RECOMMENDATIONS**

Based on the conclusions of this assessment the proposed activity can proceed under the following recommendations:

Recommendation 1 - Archaeological salvage excavation at Open Area B, Open Area E and Test Unit E66 post-SSDA approval and prior to construction

It is recommended that salvage excavation be conducted for Open Area B, Open Area E and Test Unit E66 to recover sub-surface artefacts which will be impacted as a part of the proposed development. The purpose of the salvage excavation is to provide conclusive data on the artefact typology, material type and subsurface density/extent.

It is recommended that this be undertaken as a condition of the SSDA approval and prior to construction.

The additional salvage report will be produced following the completion of the salvage excavation and provided as an addendum report.

Recommendation 2 - Surface Collection post-SSDA approval and prior to construction

Following SSDA approval and prior to construction surface collection of the isolated surface artefact IF1 must be undertaken in accordance with the Code of Practice and with the involvement of the Registered Aboriginal Parties.

Isolated Find 01 (IF-1) – GPS coordinates 0295424E, 6253350N

Recommendation 3 - Repatriation or Deposition in Keeping Place

Through consultation with the RAPs a decision will be made as to the destination for the artefacts recovered during both the test excavation and surface collection programs.

Care and Control of Artefacts

Through the ACHA process a determination must be made in consultation with the RAPs the final keeping place of the artefacts collected during the project. All project artefacts will be sorted and packaged in accordance with Australian Museum Standards.

The general options are:

Option 1: Deerubbin LALC enters into a Care and Control agreement and the artefacts are then stored at their designated keeping place (Old Parramatta Gaol).

Option 2: Repatriation of artefacts to 'Country'. Following construction the artefacts would be reburied within the subject area and the location registered on AHIMS.

Option 3: Designation of alternative keeping place such as local museum, Australian Museum or with other RAP group.

Recommendation 4 – Aboriginal Cultural Heritage Induction

It is recommended that induction materials be prepared for inclusion in site inductions for any contractors working at the subject area. The induction material should include an overview of the types of sites to be aware of (i.e. artefact scatters or concentrations of shells that could be middens), obligations under the NPW Act, and the requirements of an archaeological finds' procedure (refer below). This process should be included in the Construction Environmental Management Plan (CEMP) and any site management plans.

The induction material may be paper based, included in any hard copy site management documents; or electronic, such as "PowerPoint" for any face to face site inductions.

Recommendation 5 - Archaeological Chance Find Procedure

Although considered highly unlikely, should any archaeological deposits be uncovered during any site works, a procedure must be implemented. The following steps must be carried out:

- 1. All works stop in the vicinity of the find. The find must not be moved 'out of the way' without assessment.
- 2. Site supervisor, or another nominated site representative must contact either the project archaeologist (if relevant) or DPC to contact a suitably qualified archaeologist.

- 3. The nominated archaeologist examines the find, provides a preliminary assessment of significance, records the item and decides on appropriate management, in conjunction with the RAPs for the project. Such management may require further consultation with DPC, preparation of a research design and archaeological investigation/salvage methodology and preparation of AHIMS Site Card.
- 4. Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required, and further archaeological investigation undertaken.
- 5. Reporting may need to be prepared regarding the find and approved management strategies. Any such documentation should be appended to this ACHAR and revised accordingly.
- 6. Works in the vicinity of the find can only recommence upon relevant approvals from DPC.

Recommendation 6 - Human Remains Procedure

In the unlikely event that human remains are uncovered during any site works, the following must be undertaken:

- 1. All works within the vicinity of the find immediately stop.
- 2. Site supervisor or other nominated manager must notify the NSW Police and DPC.
- 3. The find must be assessed by the NSW Police, and may include the assistance of a qualified forensic anthropologist.
- 4. Management recommendations are to be formulated by the Police, DPC and site representatives.
- 5. Works are not to recommence until the find has been appropriately managed.

Recommendation 7 - RAP consultation

A copy of the final ACHAR was provided to all Project RAPs on 30 August 2021. Ongoing consultation with RAPs should occur as the project progresses, to ensure ongoing communication about the project and key milestones, and to ensure the consultation process does not lapse, particularly with regard to consultation should the CFP be enacted.

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DISCLAIMER

This report is dated 3 September 2021 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd (Urbis) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of THE GPT GROUP (Instructing Party) for the purpose of an Aboriginal Cultural Heritage Assessment (Purpose) and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

In preparing this report, Urbis may rely on or refer to documents in a language other than English, which Urbis may arrange to be translated. Urbis is not responsible for the accuracy or completeness of such translations and disclaims any liability for any statement or opinion made in this report being inaccurate or incomplete arising from such translations.

Whilst Urbis has made all reasonable inquiries it believes necessary in preparing this report, it is not responsible for determining the completeness or accuracy of information provided to it. Urbis (including its officers and personnel) is not liable for any errors or omissions, including in information provided by the Instructing Party or another person or upon which Urbis relies, provided that such errors or omissions are not made by Urbis recklessly or in bad faith.

This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A BASIC AND EXTENSIVE AHIMS SEARCH RESULTS



AHIMS Web Services (AWS) Search Result

Purchase Order/Reference : Mamre_Bas

Client Service ID: 517484

Date: 02 July 2020

Urbis Pty Ltd - Angel Place L8 123 Pitt Street

Level 8 123 Angel Street Sydney New South Wales 2000

Attention: Aaron Olsen

Email: aolsen@urbis.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 292617 - 297343, Northings : 6251502 - 6255555 with a Buffer of 0 meters, conducted by Aaron Olsen on 02 July 2020,

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (http://www.nsw.gov au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are
 recorded as grid references and it is important to note that there may be errors or omissions in these
 recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.

ABN 30 841 387 271

Email: ahims@environment.nsw.gov.au

Web: www.environment nsw.gov.au

• This search can form part of your due diligence and remains valid for 12 months.

Your Ref/PO Number : Mamre_Ext

<u>SiteID</u>	SiteName	<u>Datum</u>	<u>Zone</u>	Easting	Northing	Context	Site Status	<u>SiteFeatures</u>	<u>SiteTypes</u>	Reports

Your Ref/PO Number : Mamre_Ext

SiteID	SiteName	Datum	Zone	Easting	Northing Context	SiteFeatures	SiteTypes	Reports

Your Ref/PO Number : Mamre_Ext

GOVERNMENT		Extensive search	one not report								
<u>iteID</u>	<u>SiteName</u>		<u>Datum</u>	<u>Zone</u>	Easting	Northing (<u>Context</u>	<u>Site Status</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	Reports

Your Ref/PO Number : Mamre_Ext

SiteID	SiteName	Datum Z	Zone Easting	Northing Context	Site Status	SiteFeatures	SiteTypes	Reports

Your Ref/PO Number : Mamre_Ext

SiteID	SiteName	<u>Datum</u>	<u>Zone</u>	Easting	Northing Context	Site Status	<u>SiteFeatures</u>	<u>SiteTypes</u>	Reports

APPENDIX B REGISTERED ABORIGINAL PARTY CONSULTATION LOG

Time	Туре	Contacted	Contacted Individual	Contacted by	Contacted by Individual	Subject	Reply	Follow-up needed?	Person actioned	Comment	Included in App. C
					_	Agency notice	,				
6/07/2020 12:53pm	email	Deerubbin LALC	n/a	Urbis	Andrew Crisp (AC)	Stage 1.2 Agency Notice	n/a	No	Aaron Olsen (AO)	n/a	Υ
6/07/2020 12:53pm	email	DPC	n/a	Urbis	AC	Stage 1.2 Agency Notice	n/a	No	AO	n/a	Υ
6/07/2020 12:53pm	email	GSLLS	n/a	Urbis	AC	Stage 1.2 Agency Notice	n/a	No	AO	n/a	Υ
6/07/2020 12:53pm	email	ORALRA	n/a	Urbis	AC	Stage 1.2 Agency Notice	n/a	No	AO	n/a	Υ
6/07/2020 12:53pm	email	City of Penrith Council	n/a	Urbis	AC	Stage 1.2 Agency Notice	n/a	No	AO	n/a	Υ
6/07/2020 12:54pm	email	NTSCorp	n/a	Urbis	AC	Stage 1.2 Agency Notice	n/a	No	AO	n/a	Υ
10/07/2020 3:15pm	email	Urbis	AC	DPC	Barry Gunther	Stage 1.2 RESPONSE	DPC RAP List Provided	No	AO	n/a	Υ
23/07/2020 3:12pm	email	Urbis	AC	City of Penrith Council	Rhian Greenup	Stage 1.2 RESPONSE	Provided Deerubbin LALC details	No	AO	n/a	Υ
28/07/2020	email	Urbis	AC	ORALRA	Rachel Rawiri	Stage 1.2 RESPONSE	No Registered Aboriginal Owners;	No	AO	n/a	
•						G	providded Deerubbin LALC details			•	Υ
25/08/2020 1:05pm	email	NNTT	n/a	Urbis	AO	Stage 1.1	n/a	No	AO	n/a	Y
13/00/2020 1.03pm	Cirian	TVIVI I	11, 4	NNTT	n/a	Stage 1.1	No Native Title Applications,	No	AO	n/a	•
				ININII	Пуа	Stage 1.1	• •	INO	AU	ily a	
06/00/2020 0 27		11.15	4.0				Determinations or Indigenous Land Use				V
26/08/2020 8:27pm	email	Urbis	AO		Ctorre 4 DAD	4: / d	Agreements				Υ
00/07/2020 40 50		52 B. J. J. J. J. BAB				notice/advertisement		N	4.0		V
29/07/2020 10:59am	email	52 Potential RAPs	n/a	Urbis	AO	Stage 1.3 RAP Notice	n/a	No	AO	n/a	Υ
.9/07/2020 11:12am	email	Urbis	AO	DNC	Lilly Carroll	Stage 1.3 RAP Notice	Registering Interest	No	AO	n/a	Υ
9/07/2020 3:23pm	email	Urbis	AO	Clive Freeman	Clive Freeman	Stage 1.3 RAP Notice	Registering Interest and providing	No	AO	n/a	
							insurances				Υ
30/07/2020 11:13am	email	Urbis	AC	Gunjeewong	Cherie Carroll Turrise	Stage 1.3 RAP Notice	Registering Interest	No	AO	n/a	Υ
30/07/2020 11:15am	email	Urbis	AC	CAC	Marilyn Carroll-Johnson	Stage 1.3 RAP Notice	Registering Interest	No	AO	n/a	Υ
30/07/2020 4:40pm	email	Urbis	AO	KYWG	Phil Kahn	Stage 1.3 RAP Notice	Registering Interest and providing	No	AO	n/a	
ο, ο , , 2020 π. π υμιιι	Ciriali	01013	,	N. W S	· IIII RAIIII	Stube 1.3 IVAL NOTICE	insurances	.10	7.0	.,,	٧
00/07/2020 5 24	a ma = *1	l lob:-	A.C.	A1 Indiana Cara	Corolus History	Chare 4 2 DAD No. 1		No	40	n /o	I V
30/07/2020 5:21pm	email	Urbis	AO	A1 Indigenous Services	Carolyn Hickey	Stage 1.3 RAP Notice	Registering Interest	No	AO	n/a	Y
2/08/2020 9:15pm	email	Urbis	AC	Wailwan	Phil Boney	Stage 1.3 RAP Notice	Registering Interest	No	AO	n/a	Y
3/08/2020 5:01pm	email	Urbis	AO	Amanda Hickey Cultural Services	Amanda DeZwart	Stage 1.3 RAP Notice	Registering Interest	No	AO	n/a	Υ
6/08/2020 3:49pm	email	Urbis	AO	DNAC	Dirk Schmitt	Stage 1.3 RAP Notice	Registering Interest	No	AO	n/a	Υ
l1/08/2020 9:01pm	email	Urbis	AO	Barraby Cultural Services	Lee Field	Stage 1.3 RAP Notice	Registering Interest	No	AO	n/a	Υ
1/08/2020 9:03pm	email	Urbis	AO	Yurrandaali	Bo Field	Stage 1.3 RAP Notice	Registering Interest	No	AO	n/a	Υ
13/08/2020 6:27pm	email	Urbis	AO	Murra Bidgee	Darleen Johnson	Stage 1.3 RAP Notice	Registering Interest	No	AO	n/a	Υ
.3/08/2020 6:30pm	email	Urbis	AO	Merrigarn	Shaun Carroll	Stage 1.3 RAP Notice	Registering Interest	No	AO	n/a	V
.3/08/2020 6:30pm				_		_					V
•	email	Urbis	AO	Muragadi	Jesse Johnson	Stage 1.3 RAP Notice	Registering Interest	No	AO	n/a	Y
20/08/2020 8:28pm	email	Urbis	AO	Gulaga	Wendy Smith	Stage 1.3 RAP Notice	Registering Interest	No	AO	n/a	Y
24/08/2020 12:10pm	email	Urbis	AO	Aragung	James Eastwood	Stage 1.3 RAP Notice	Registering Interest	No	AO	n/a	Υ
25/08/2020 12:02pm	email	Urbis	AO	DCAC	Justine Coplin	Stage 1.3 RAP Notice	Registering Interest	No	AO	n/a	Υ
27/08/2020 12:04am	email	Urbis	AO	Butucarbin	Lowanna Gibson	Stage 1.3 RAP Notice	Registering Interest	No	AO	Late Registration	Υ
27/08/2020 1:01pm	email	Urbis	AO	Yulay	Arika Jalomaki	Stage 1.3 RAP Notice	Registering Interest	No	AO	Late Registration	Υ
30/08/2020 6:21am	email	Urbis	AO	, Barking Owl	Jody Kulakowski	Stage 1.3 RAP Notice	Registering Interest	No	AO	Late Registration	Υ
11/09/2020 2:00pm	email	DPC	n/a	Urbis	AC	Stage 1.6 Notice	n/a	No	AO	n/a	V
						_					V
L1/09/2020 2:03pm	email	DLALC	n/a	Urbis	AC	Stage 1.6 Notice	n/a	No	AO	n/a	Ť
4 /00 /2020 4 44		All DAD-	/-	I lubia		ge 2 and 3		No	4.0		V
1/09/2020 1:41pm	email 	All RAPs	n/a	Urbis	AC	Stage 2/3 Document	n/a	No	AO	n/a ,	Υ
1/09/2020 1:41pm	email	Urbis	AC	A1 Indigenous Services	Carolyn Hickey	Stage 2/3 RESPONSE	Questionnaire answered and insurances	No	AO	n/a	
							provided				Υ
.2/09/2020 7:03am	email	Urbis	AC	DNC	Paul Boyd	Stage 2/3 RESPONSE	DNC is happy with the go ahead for	No	AO	n/a	
							Mamre Rd / Kemp's Creek project				Υ
5/09/2020 1:44pm	email	Urbis	AC	Corroboree Corp	Marilyn Carroll-Johnson	Stage 2/3 RESPONSE	EOI in field work and questionnaire	No	AO	n/a	
-,,				эт эт эт эт эт эт	, , , , , , , , , , , , , , , , , , , ,		answered			., .	γ
5/00/2020 2:05pm	email	Urbis	AC	Gunicowong	Cherie Carroll Turrise	Stage 2/3 RESPONSE		No	AO	n/a	•
5/09/2020 2:05pm	CIIIdII	כועוט	AC	Gunjeewong	CHELLE CALLOIL LALLISE	Stage 2/3 NESPUNSE	Response to questionnaire, insurances	No	AU	ιη α	V
14 /00 /2020 = 22		rrakt.	A.C.	A 00 0000	James Fast and	Ch 2 /2 DECDONG	and schedule of rates provided	N -	4.0		ī
21/09/2020 5:08pm	email	Urbis	AC	Aragung	James Eastwood	Stage 2/3 RESPONSE	Agrees with recommendations.	No	AO	n/a	
							Questionnaire answered and insurances				
							provided.				Υ
4/09/2020 2:05pm	email	Urbis	AC	Barraby Cultural Services	Lee Field	Stage 2/3 RESPONSE	Agrees with methodology. Insurances and				
•				•		-	schedule of rates provided				Υ
	email	Urbis	AC	Yurrandaali	Bo Field	Stage 2/3 RESPONSE	Agrees with recommendations. EOI in	No	AO	n/a	
24/09/2020 2:24nm	5	J. J. J	• • •		_ 3 3.0	21000 -/ 0 11201 01101	field work, insurances and schedule of		· . -		
24/09/2020 2:24pm							•				V
24/09/2020 2:24pm			A.C.	Clina 5	Clina Fan	Cha 2 /2 DECDC :: 27	rates provided.	N -	4.0		ī
		Little Co.	Λ1	Clive Freeman	Clive Freeman	Stage 2/3 RESPONSE	I will be completing the read over of these	INO	AO	n/a	
	email	Urbis	AC				documents this week and will let you				
	email	Urbis	AC								
	email	Urbis	AC				know via email if I have any comment				
	email	Urbis	AC				know via email if I have any comment				Υ
0/09/2020 9:59pm	email email	Urbis Urbis	AC	KYWG	Phil Khan	Stage 2/3 RESPONSE	know via email if I have any comment I believe the study area has high potential	No	AO	n/a	Υ
30/09/2020 9:59pm				KYWG	Phil Khan	Stage 2/3 RESPONSE	I believe the study area has high potential	No	AO	n/a	Υ
24/09/2020 2:24pm 30/09/2020 9:59pm 6/10/2020 2:51pm				KYWG	Phil Khan	Stage 2/3 RESPONSE	I believe the study area has high potential for Aboriginal cultural heritage, as Kemps	No	АО	n/a	Υ
30/09/2020 9:59pm				KYWG	Phil Khan	Stage 2/3 RESPONSE	I believe the study area has high potential for Aboriginal cultural heritage, as Kemps creek is close by and may have room for	No	АО	n/a	Y
30/09/2020 9:59pm				KYWG	Phil Khan	Stage 2/3 RESPONSE	I believe the study area has high potential for Aboriginal cultural heritage, as Kemps creek is close by and may have room for Aboriginal finds. I believe further testing	No	AO	n/a	Y
30/09/2020 9:59pm				KYWG	Phil Khan	Stage 2/3 RESPONSE	I believe the study area has high potential for Aboriginal cultural heritage, as Kemps creek is close by and may have room for Aboriginal finds. I believe further testing should be undertake as the area is highly	No	AO	n/a	Y
0/09/2020 9:59pm				KYWG	Phil Khan	Stage 2/3 RESPONSE	I believe the study area has high potential for Aboriginal cultural heritage, as Kemps creek is close by and may have room for Aboriginal finds. I believe further testing	No	AO	n/a	Y
0/09/2020 9:59pm				KYWG			I believe the study area has high potential for Aboriginal cultural heritage, as Kemps creek is close by and may have room for Aboriginal finds. I believe further testing should be undertake as the area is highly	No	АО	n/a	Y
0/09/2020 9:59pm				KYWG		Stage 2/3 RESPONSE Stage 4 Stage 4 Draft ACHAR/ATR	I believe the study area has high potential for Aboriginal cultural heritage, as Kemps creek is close by and may have room for Aboriginal finds. I believe further testing should be undertake as the area is highly	No	AO	n/a	Y

11:18am	email	Urbis	AC	KYWG	Phil Khan	Stage 4 Draft ACHAR/ATR	Thank you for your report for ACHA for 754-770 & 784-786 Mamre Road. Here at K.Y.W.G we hold over 50 years of cultural knowledge, our aspiration is to conserve our cultural heritage and our aim is to pass on cultural knowledge. Aboriginal people have walked this land for tens of thousands of years and continue to do so. We follow the water ways as they provide resource, we hold a deep connection with	No	AC	n/a	Y
							resource, we note a deep connection with mother earth and we are guided by the skies. Aboriginal people would camp, hunt, gather, practice lore and followed customs all across mother earth, we protect our sacred sites such as men's and woman's sites.				
							The whole study area is highly significant to our people as we occupied the land. There are water ways that hold significant to us and sky knowledge that is recognised to us. We would like to agree to your recommendations, we strongly push for salvage and we agree to your				
16/07/2021		Haleia	4.0	Ad Indiana Comisso	Canalus History	Character A Durch A CHAR / ATR	report. We look forward to working along side you on this project.	NI-	4.0	/-	V
5:25pm 15/07/2021	email	Urbis	AC	A1 Indigenous Services	Carolyn Hickey	Stage 4 Draft ACHAR/ATR	I have reviewed the document and support the Information in the draft ACHAR and ATR.	No	AC	n/a	Y
12/07/2021 5:01pm	email	Urbis	AC	Gulaga	Wendy Smith	Stage 4 Draft ACHAR/ATR		No	AC	n/a	Υ

APPENDIX C

REGISTERED ABORIGINAL PARTY CONSULTATION DOCUMENTATION

STAGE 1.1 - NATIVE TITLE SEARCH

From: <u>Aaron Olsen</u>

To: <u>"GeospatialSearch@nntt.gov.au"</u>

Cc: Andrew Crisp

Subject: Search Request for Lots 59 & 60 DP 259135 (Our Ref: P0022231)

Date: Tuesday, 25 August 2020 1:04:00 PM

Attachments: Search Form Request for Search of Tribunal Registers 2020.pdf

image012.png image013.png image014.png image015.png image016.png

Good afternoon

Please find attached a search request for the Native Title Tribunal for Lots 59 & 60 DP 259135 (754-770 & 784-786 Mamre Road, Kemps Creek).

If you have any questions or need any further information, please let me know.

Kind regards

AARON OLSEN

HERITAGE ASSISTANT
D +61 2 8233 9957
T +61 2 8233 9900
E aolsen@urbis.com.au













ANGEL PLACE, LEVEL 8, 123 PITT STREET SYDNEY, NSW 2000, AUSTRALIA

Our highest priority is the health and wellbeing of our people, clients and community. Click here to read Urbis' response to COVID-19.

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Request for Search of Tribunal Registers

Search for overlapping interests i.e.: Is there a native title claim, determination or land use agreement over this land? Please note: the NNTT cannot search over freehold land.

Kemps Creek/Cumberland/Melville

For	further information on freehold land: Click Here (NNTT website)
1. Your details	
NAME:	Aaron Olsen
POSITION:	Assistant Archaeologist
COMPANY/ORGANISATION:	Urbis
POSTAL ADDRESS:	Level 8, 123 Pitt Street, Sydney, NSW, 2000
TELEPHONE:	
EMAIL:	aolsen@urbis.com.au
YOUR REFERENCE:	P0022231
DATE OF REQUEST:	25/08/2020
2. Reason for your request	
Are you a party to a native title	
proceeding?	☐Yes ⊠No
Please provide Federal Court/Tribunal 1	ïle
number/or application name:	
-	
OR	
Do you need to identify existing- native	
title interests to comply with the <i>Native</i>	
Title Act 1993 (Cth) or other	⊠Yes □No
State/Territory legislation?	
Please provide brief details of these	Auchanalacianlassassassas
obligations here:	Archaeological assessment
2. [.]	de a d
3. Identify the area to be search	
·	se send more information on a Word or Excel document.
Mining tenure	
State/Territory:	
Tenement ref/s:	·
OR	
Crown land / non-freehold tenure	
Tenure type:	Lease Reserve or other Crown land
State/Territory:	New South Wales
Lot and plan details:	Lots 59 & 60; DP 259135
Pastoral Lease number or name:	-
Other details: (Town/County/Parish/	Kemps Creek/Cumberland/Melville

Email completed form to: GeospatialSearch@nntt.gov.au

Section/Hundred/Portion):

STAGE 1.2 – AGENCY NOTICES

From: Andrew Crisp

To: OEH HD Heritage Mailbox
Cc: Balazs Hansel; Aaron Olsen

Subject: P0022231 - GPT Mamre Road - ABORIGINAL CULTURAL HERITAGE ASSESSMENT - ABORIGINAL

COMMUNITY CONSULTATION STAGE 1

 Date:
 Monday, 6 July 2020 12:53:40 PM

 Attachments:
 P0022231 Stage 1.2 DPC.pdf

image002.png image003.png image004.png image005.png image006.png

Good afternoon,

P0022231 - GPT MAMRE ROAD - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1

Urbis has been commissioned by The GPT Group (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW (hereafter referred to as 'the subject area') (see attached figure).

Urbis is preparing an ACHA to accompany the State Significant Development Application (SSDA) for a warehousing and distribution centre within the subject area. The first stage of works, to be completed by 2021, will comprise site preparation works, including bulk earthworks, services and associated landscaping, as well as the construction of two warehouses. The second stage, to be completed by 2023, will include the construction of a further three warehouses.

The ACHA is to be carried out in accordance with relevant guidelines under the National Parks and Wildlife Act 1974 (NPW Act), including the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011). The assessment would detail any potential Aboriginal cultural heritage resources within the subject area and provide recommendations regarding management of those resources.

The Proponent can be contacted via:

Casey Brasher

Project Manager

The GPT Group

Casey.Brasher@gpt.com.au

Level 10 Melbourne Central Tower

360 Elizabeth Street

Melbourne VIC 3000

In accordance with the *Aboriginal cultural heritage consultation requirements for proponents (DEECW 2010)* (the Consultation Requirements) and Clause 80C of the NSW National Parks and Wildlife Regulation 2009, the Proponent will conduct a community consultation process with registered Aboriginal people to assist with the preparation of the ACHA to inform the EIS and comply with the anticipated SEARs requirements including:

Identifying and describing the Aboriginal cultural heritage values that exist across the subject area in accordance with the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW OEH (2010), and documenting these in an Aboriginal Cultural Heritage Assessment Report (ACHAR) which may include the need for surface survey and test excavation;

- Undertaking consultation with Aboriginal people and document in accordance with Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW):
- The preparation of the ACHAR to support the SSDA, demonstrating attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts; and
- Recording of any Aboriginal objects in line with the requirements of the Aboriginal Heritage Information Management System (AHIMS) that may be identified within the subject area.

In accordance with Section 4.1.2 of the Consultation Requirements, Urbis proposes to compile a list of Aboriginal people and organisations who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places that may exist within the subject area.

Should you be aware of any Aboriginal persons and/or organisations that may hold an interest in the project, please provide their details at your earliest convenience and preferably by 20 July 2020 in writing to:

Andrew Crisp Senior Consultant Urbis acrisp@urbis.com.au Level 8 123 Pitt Street, Sydney, NSW, 2000.

Urbis on behalf of the proponent will write to each Aboriginal person or group whose details are provided to notify them of the proposed project and invite them to register an interest in the community consultation process.

Please be advised that, as per the Consultation Requirements, the Proponent is required to forward the names of Aboriginal persons and groups who register an interest (Registered Aboriginal Parties) to the Deerubbin Local Aboriginal Land Council and Aboriginal Cultural Heritage Regulation of the Department of Premier and Cabinet (DPC) unless the person or group specifies that they do not want their details released.

Please do not hesitate to contact us should you have any queries in relation to the provided information.

ANDREW CRISP

SENIOR CONSULTANT D +61 2 8233 7642 T+61 2 8233 9900 E acrisp@urbis.com.au

SHAPING **CITIES AND** COMMUNITIES











ANGEL PLACE, LEVEL 8, 123 PITT STREET SYDNEY, NSW 2000, AUSTRALIA

Our highest priority is the health and wellbeing of our people, clients and community. Click here to read Urbis' response to COVID-19.

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ANGEL PLACE LEVEL 8, 123 PITT STREET SYDNEY NSW 2000

URBIS COM AU Urbis Pty Ltd ABN 50 105 256 228

6 July 2020

Heritage NSW – Department of Premier and Cabinet heritagemailbox@environment.nsw.gov.au

To whom it may concern,

P0022231 - GPT MAMRE ROAD - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1

Urbis has been commissioned by The GPT Group (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW (hereafter referred to as 'the subject area') (see attached figure).

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The Proponent can be contacted via:

Casey Brasher
Project Manager
The GPT Group
Casey.Brasher@gpt.com.au
Level 10 Melbourne Central Tower
360 Elizabeth Street
Melbourne VIC 3000

In accordance with the Aboriginal cultural heritage consultation requirements for proponents (DEECW 2010) (the Consultation Requirements) and Clause 80C of the NSW National Parks and Wildlife Regulation 2009, the Proponent will conduct a community consultation process with registered Aboriginal people to assist with the preparation of the ACHA to inform the EIS and comply with the anticipated SEARs requirements including:

Identifying and describing the Aboriginal cultural heritage values that exist across the subject area in accordance with the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW OEH (2010), and documenting these in an Aboriginal Cultural Heritage Assessment Report (ACHAR) which may include the need for surface survey and test excavation;



- Undertaking consultation with Aboriginal people and document in accordance with Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW);
- The preparation of the ACHAR to support the SSDA, demonstrating attempts to avoid any impact
 upon cultural heritage values and identify any conservation outcomes. Where impacts are
 unavoidable, the ACHAR must outline measures proposed to mitigate impacts; and
- Recording of any Aboriginal objects in line with the requirements of the Aboriginal Heritage Information Management System (AHIMS) that may be identified within the subject area.

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Please do not hesitate to contact us should you have any queries in relation to the provided information.

Yours sincerely,

Andrew Crisp Senior Consultant +61 2 8233 7642

naruollens

acrisp@urbis.com.au



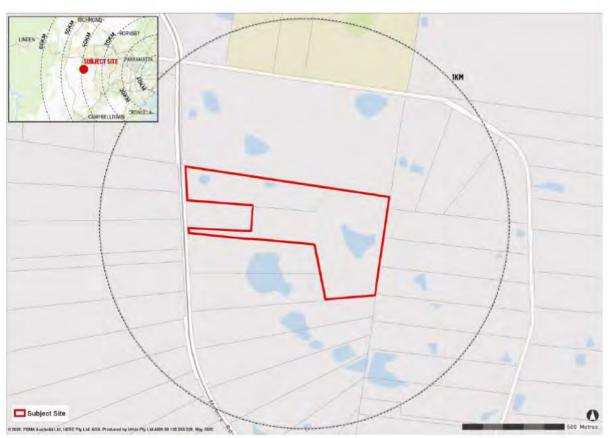


Figure 1 – Regional Location of the Subject Area

From: Andrew Crisp

To: <u>srandall@deerubbin.org.au</u>; <u>reception@deerubbin.org.au</u>

Cc: <u>Balazs Hansel</u>; <u>Aaron Olsen</u>

Subject: P00P0022231 - GPT Mamre Road - ABORIGINAL CULTURAL HERITAGE ASSESSMENT - ABORIGINAL

COMMUNITY CONSULTATION STAGE 1

 Date:
 Monday, 6 July 2020 12:53:39 PM

 Attachments:
 P0022231 Stage 1.2 DLALC.pdf

image002.png image004.png image006.png image008.png image010.png

Good afternoon,

P0022231 - GPT MAMRE ROAD - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1

Urbis has been commissioned by The GPT Group (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW (hereafter referred to as 'the subject area') (see attached figure).

Urbis is preparing an ACHA to accompany the State Significant Development Application (SSDA) for a warehousing and distribution centre within the subject area. The first stage of works, to be completed by 2021, will comprise site preparation works, including bulk earthworks, services and associated landscaping, as well as the construction of two warehouses. The second stage, to be completed by 2023, will include the construction of a further three warehouses.

The ACHA is to be carried out in accordance with relevant guidelines under the National Parks and Wildlife Act 1974 (NPW Act), including the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011). The assessment would detail any potential Aboriginal cultural heritage resources within the subject area and provide recommendations regarding management of those resources.

The Proponent can be contacted via:

Casey Brasher

Project Manager

The GPT Group

Casey.Brasher@gpt.com.au

Level 10 Melbourne Central Tower

360 Elizabeth Street

Melbourne VIC 3000

In accordance with the Aboriginal cultural heritage consultation requirements for proponents (DEECW 2010) (the Consultation Requirements) and Clause 80C of the NSW National Parks and Wildlife Regulation 2009, the Proponent will conduct a community consultation process with registered Aboriginal people to assist with the preparation of the ACHA to inform the EIS and comply with the anticipated SEARs requirements including:

Identifying and describing the Aboriginal cultural heritage values that exist across the subject area in accordance with the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW OEH (2010), and documenting these in an Aboriginal Cultural Heritage Assessment Report (ACHAR) which may include the need for surface survey and test excavation;

- Undertaking consultation with Aboriginal people and document in accordance with Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW);
- The preparation of the ACHAR to support the SSDA, demonstrating attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts; and
- Recording of any Aboriginal objects in line with the requirements of the Aboriginal Heritage Information Management System (AHIMS) that may be identified within the subject area.

In accordance with Section 4.1.2 of the Consultation Requirements, Urbis proposes to compile a list of Aboriginal people and organisations who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places that may exist within the subject area.

Should you be aware of any Aboriginal persons and/or organisations that may hold an interest in the project, please provide their details at your earliest convenience and preferably by **20 July 2020** in writing to:

Andrew Crisp Senior Consultant Urbis acrisp@urbis.com.au Level 8 123 Pitt Street, Sydney, NSW, 2000.

Urbis on behalf of the proponent will write to each Aboriginal person or group whose details are provided to notify them of the proposed project and invite them to register an interest in the community consultation process.

Please be advised that, as per the Consultation Requirements, the Proponent is required to forward the names of Aboriginal persons and groups who register an interest (Registered Aboriginal Parties) to the Aboriginal Cultural Heritage Regulation of the Department of Premier and Cabinet (DPC) unless the person or group specifies that they do not want their details released.

Please do not hesitate to contact us should you have any queries in relation to the provided information.

ANDREW CRISP

SENIOR CONSULTANT
D +61 2 8233 7642
T +61 2 8233 9900
E acrisp@urbis.com.au













ANGEL PLACE, LEVEL 8, 123 PITT STREET SYDNEY, NSW 2000, AUSTRALIA

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From: Andrew Crisp

To: gs.service@lls.nsw.gov.au
Cc: Balazs Hansel; Aaron Olsen

Subject: P00P0022231 - GPT Mamre Road - ABORIGINAL CULTURAL HERITAGE ASSESSMENT - ABORIGINAL

COMMUNITY CONSULTATION STAGE 1

 Date:
 Monday, 6 July 2020 12:53:41 PM

 Attachments:
 P0022231 Stage 1.2 GSLLS.pdf

image002.png image004.png image006.png image008.png image010.png

Good afternoon,

P0022231 - GPT MAMRE ROAD - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1

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The ACHA is to be carried out in accordance with relevant guidelines under the National Parks and Wildlife Act 1974 (NPW Act), including the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011). The assessment would detail any potential Aboriginal cultural heritage resources within the subject area and provide recommendations regarding management of those resources.

The Proponent can be contacted via:

Casey Brasher

Project Manager

The GPT Group

Casey.Brasher@gpt.com.au

Level 10 Melbourne Central Tower

360 Elizabeth Street

Melbourne VIC 3000

In accordance with the *Aboriginal cultural heritage consultation requirements for proponents (DEECW 2010)* (the Consultation Requirements) and Clause 80C of the NSW National Parks and Wildlife Regulation 2009, the Proponent will conduct a community consultation process with registered Aboriginal people to assist with the preparation of the ACHA to inform the EIS and comply with the anticipated SEARs requirements including:

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Please do not hesitate to contact us should you have any queries in relation to the provided information.

ANDREW CRISP

SENIOR CONSULTANT D +61 2 8233 7642 T+61 2 8233 9900 E acrisp@urbis.com.au

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From: Andrew Crisp

To: <u>information@ntscorp.com.au</u>
Cc: <u>Balazs Hansel</u>; <u>Aaron Olsen</u>

Subject: P0022231 - GPT Mamre Road - ABORIGINAL CULTURAL HERITAGE ASSESSMENT - ABORIGINAL

COMMUNITY CONSULTATION STAGE 1

 Date:
 Monday, 6 July 2020 12:53:52 PM

 Attachments:
 P0022231 Stage 1.2 NTSCorp.pdf

image002.png image003.png image004.png image005.png image006.png

Good afternoon,

P0022231 - GPT MAMRE ROAD - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1

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The Proponent can be contacted via:

Casey Brasher

Project Manager

The GPT Group

Casey.Brasher@gpt.com.au

Level 10 Melbourne Central Tower

360 Elizabeth Street

Melbourne VIC 3000

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From: Andrew Crisp

To: adminofficer@oralra.nsw.gov.au
Cc: Balazs Hansel; Aaron Olsen

Subject: P0022231 - GPT Mamre Road - ABORIGINAL CULTURAL HERITAGE ASSESSMENT - ABORIGINAL

COMMUNITY CONSULTATION STAGE 1

 Date:
 Monday, 6 July 2020 12:53:42 PM

 Attachments:
 P0022231 Stage 1.2 ORALRA.pdf

image002.png image003.png image004.png image005.png image006.png

Good afternoon,

P0022231 - GPT MAMRE ROAD - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1

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The Proponent can be contacted via:

Casey Brasher

Project Manager

The GPT Group

Casey.Brasher@gpt.com.au

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360 Elizabeth Street

Melbourne VIC 3000

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 From:
 Andrew Crisp

 To:
 council@penrith.city

 Cc:
 Balazs Hansel; Aaron Olsen

Subject: P0022231 - GPT Mamre Road - ABORIGINAL CULTURAL HERITAGE ASSESSMENT - ABORIGINAL

COMMUNITY CONSULTATION STAGE 1

 Date:
 Monday, 6 July 2020 12:53:46 PM

 Attachments:
 P0022231 Stage 1.2 PCC.pdf

image002.png image003.png image004.png image005.png image006.png

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Project Manager

The GPT Group

Casey.Brasher@gpt.com.au

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Melbourne VIC 3000

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STAGE 1.2 – AGENCY RESPONSES

From: Andrew Crisp

To: Subject: Aaron Olsen: Balazs Hansel

Fw: DPC RAP list for the 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW

Wednesday, 22 July 2020 9:24:08 AM

Attachments:

Image001.png SSD Planning and Environment Letter 754-770 and 784-786 Mamre Road Kemps NSW.doc P0022231 Stage 1.2 DPC.pdf GSB Stakeholder list - updated 15 June 2020.docx

From: Barry Gunther <Barry.Gunther@environment.nsw.gov.au>

Sent: Friday, 10 July 2020 3:15 PM To: Andrew Crisp <acrisp@urbis.com.au>

Subject: DPC RAP list for the 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW

Please find attached your request for the DPC RAP list for the 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW.

regards

Barry Gunther, Aboriginal Heritage Planner Officer
Heritage NSW, Community Engagement, Department of Premier and Cabinet
Level 6, 10 Valentine Ave, Parramatta | Locked Bag 5020 Parramatta 2124



T: 02 9995 6830 | barry.gunther @environmrnt.nsw.gov.au

Please lodge all Applications to Heritagemailbox@environment.nsw.gov.au

I acknowledge and respect the traditional custodians and ancestors of the lands I work across.

Heritage NSW and coronavirus (COVID-19)
Heritage NSW has taken steps to protect the safety, health and wellbeing of our staff, communities and customers. Whilst our offices remain open, we have put in place flexible working arrangements for our teams across NSW and continue to adapt our working arrangements as necessary. Face-to-face meetings and field work/site visits with our customers are subject to rules on gatherings and social distancing measures. We thank you for your patience and understanding at this time.

This email is intended for the addressee(s) named and may contain confidential and/or privileged information.

If you are not the intended recipient, please notify the sender and then delete it immediately.

Any views expressed in this email are those of the individual sender except where the sender expressly and with authority states them to be the views of the NSW Office of Environment and Heritage.

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL



Our reference: Doc20/559738

Andrew Crisp Senior Consultant URBIS Angel Place Level 8, 123 Pitt Street Sydney NSW 2000

Dear Andrew,

Thank you for your letter dated 6 July 2020 to Heritage NSW in the Department of Premier and Cabinet (DPC) regarding obtaining a list of the Aboriginal stakeholders that may have an interest in the proposed development at 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW.

Please find attached the list of Aboriginal stakeholders known to DPC that may have an interest in the project.

As the Planning and Assessment Group in the Department of Planning, Industry and Environment is the approval authority for this project, the consultation process should be in accordance with the relevant guidelines as stipulated by the Group.

If you wish to discuss any of the above matter further please email: heritagemailbox@environment.nsw.gov.au

Yours sincerely

10 July 2020

Jackie Taylor Senior Team Leader Aboriginal Cultural Heritage Regulation - South Heritage NSW

LIST OF ABORIGINAL STAKEHOLDERS FOR THE <u>GREATER SYDNEY BRANCH</u> HELD BY OEH FOR THE PURPOSES OF THE *ABORIGINAL CULTURAL HERITAGE CONSULTATION REQUIREMENTS FOR PROPONENTS 2010*

These lists are provided to proponents in accordance with section 4.1.2 of the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (the "Consultation Requirements") which commenced on 12 April 2010.

The consultation process involves getting the views of, and information from, Aboriginal people and reporting on these. It is not to be confused with other field assessment processes involved in preparing a proposal and an application. Consultation does not include the employment of Aboriginal people to assist in field assessment and/or site monitoring. Aboriginal people may provide services to proponents through a contractual arrangement however, this is separate from consultation. The proponent is not obliged to employ those Aboriginal people registered for consultation. Consultation as per these requirements will continue irrespective of potential or actual employment opportunities for Aboriginal people.

A copy of the Consultation Requirements can be found on the OEH website at: http://www.environment.nsw.gov.au/resources/cultureheritage/commconsultation/09781ACHconsultreq.pdf.

Under the Consultation Requirements; a proponent is required to provide Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places as relevant to the proposed project area, with an opportunity to be involved in consultation. Section 3.3.1 of the Consultation Requirements states that Aboriginal people who can provide this information are, based on Aboriginal lore and custom, the traditional owners or custodians of the land that is the subject of the proposed project.

The Consultation Requirements also state that:

Traditional owners or custodians with appropriate cultural heritage knowledge to inform decision making who seek to register their interest as an Aboriginal party are those people who:

- continue to maintain a deep respect for their ancestral belief system, traditional lore and custom
- recognise their responsibilities and obligations to protect and conserve their culture and heritage and care for their traditional lands or Country
- have the trust of their community, knowledge and understanding of their culture, and permission to speak about it.

Please note: the placement of an organisation's name on any OEH Aboriginal stakeholder list for the Consultation Requirements does not override a proponent's requirement to also advertise in the local newspaper and to seek from other sources the names of any other Aboriginal people who may hold cultural knowledge as required under clause 80C of the <u>National Parks and</u> Wildlife Regulation 2009.

How to use this list

- 1. Determine which Local Government Area/s (LGA/s) your project area falls into
- 2. Identify which organisations and individuals on the list have an interest in the LGA/s relevant to your project identified in column 6 of the list
- 3. Contact the organisations/individuals who have indicated an interest in the relevant LGA/s and invite them to register an interest in your project

Do not reproduce the attached list in publicly available reports and other documents. Your report should only contain the names of the organisations and individuals who you have invited to register an interest in your project and those who have registered as stakeholders for your project.

PLEASE NOTE: THE STAKEHOLDER LIST HAS NOT BEEN UPDATED TO INCLUDE THE RECENT

COUNCIL MERGERS AND NAME CHANGES. PLEASE CONSIDER THE PRE-MERGER COUNCIL

BOUNDARIES WHEN DETERMINING WHO SHOULD BE INVITED TO REGISTER FOR YOUR

PROJECT.

Last updated 15 June 2020

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
Deerubbin Local Aboriginal Land Council	Kevin Cavanagh		srandall@deerubbin.org.au Reception@deerubbin.org.au F: (02) 4722 9713	Level 1, Suite 3 291-295 High Street, Penrith NSW 2750 PO Box 40, Penrith NSW 2751	Hawkesbury Blacktown Penrith Fairfield	Holroyd Blue Mountains The Hills Shire Parramatta	
Tharawal Local Aboriginal Land Council	Robyn Straub (CEO)		ceo@tharawal.com.au reception@tharawal.com.au	PO Box 245 Thirlmere NSW 2572	Camden Campbelltown Wollondilly	Sutherland Liverpool	
Metropolitan Local Aboriginal Land Council	Nathan Moran	(02) 83949666	officeadmin@metrolalc.org.au	PO Box 1103 Strawberry Hills NSW 2016	The Hills Shire Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Burwood Ashfield Auburn Canada Bay Hawkesbury	Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	
Gandangara Local Aboriginal Land Council	Melissa Williams CEO	(02) 96025280	mwilliams@glalc.org.au	PO Box 1038 Liverpool NSW 2170	Liverpool Fairfield Holroyd Parramatta	Auburn Bankstown Sutherland	
La Perouse Local Aboriginal Land Council	Chris Ingrey	(02) 9311 4282	admin@laperouse.org.au	PO Box 365 Matraville NSW 2036	Sutherland Randwick Botany Bay Waverly	Woollahra Sydney Rockdale	
Parramatta City Council Aboriginal Advisory Committee	Parramatta City Council	(02)9806 5050	Not provided	PO Box 32, Parramatta, NSW, 2124	Parramatta		
Holroyd City Council Advisory Committee	Holroyd City Council	(02) 9840 9840	Not provided	P.O. Box 42, Merrylands, NSW 2160	Holroyd		
Darug Custodian Aboriginal Corporation	Justine Coplin		justinecoplin@optusnet.com.au	PO Box 81, Windsor NSW 2756	Hawkesbury Blacktown Penrith Fairfield Holroyd Blue Mountains	Camden Campbelltown The Hills Shire Liverpool Parramatta	

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
Darug Tribal Aboriginal Corporation	Not provided	02 9622 4081	Not provided	PO Box 441, Blacktown NSW 2148	Hawkesbury Blacktown Penrith Fairfield Holroyd Blue Mountains	Camden Campbelltown The Hills Shire Liverpool Parramatta	
Darug Aboriginal Cultural Heritage Assessments	Gordon Morton	02 9410 3665 or	Not provided	Unit 9, 6 Chapman Avenue, Chatswood, NSW 2067	Hawkesbury Blacktown Penrith Fairfield Holroyd Blue Mountains Camden Campbelltown The Hills Shire Liverpool Parramatta Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown	Strathfield Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	
Darug Land Observations	Jamie Workman and Anna Workman		daruglandobservations@gmail.com	PO Box 173, Ulladulla, NSW 2539	Ashfield Auburn Bankstown Blacktown Blue Mountains Botany Bay Burwood Camden Campbelltown Canada Bay Canterbury Fairfield Hawkesbury The Hills Holroyd Hornsby Hunter's Hill Hurstville Kogarah Ku-ring-gai Lane Cove	Leichhardt Liverpool Manly Marrickville Mosman North Sydney Parramatta Penrith Pittwater Randwick Rockdale Ryde Strathfield Sutherland Sydney Warringah Waverley Willoughby Woollahra Wollondilly	

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
Darug Aboriginal Land Care	Mark Dyer		markdyer2009@live.com.au	PO Box 405 Donnside 2767 NSW	Hawkesbury Blacktown Penrith Fairfield Holroyd	Camden Campbelltown The Hills Shire Liverpool Parramatta	
Ken Foster			Not provided	68 Australia St Matraville	Sutherland		
La Perouse Botany Bay Corporation	Yvonne Simms		Fax (02) 9311 3440	10 Murrong Place, La Perouse NSW 2036	Sutherland		
Norma Simms			Not provided	10 Murrong Place, La Perouse NSW 2036	Sutherland		
Matthew and Andrew Coe		(08)83442196	Not provided	37 Derlanger Avenue, Collingswood, South Australia 5081	Sutherland		
Gundungurra Aboriginal Heritage Association Inc	Merle Williams		Not provided	PO Box 31, Lawson NSW 2783	Blue Mountains		
Gundungurra Tr bal Council Aboriginal Corporation	Sharon Brown		Not provided	PO Box 7244, Leura NSW 2780	Blue Mountains		
Trevor Robinson		Not provided	Not provided	PO Box 73, Peak Hill, NSW 2869	Blue Mountains		
Tania Matthews		(02) 67924038	aboriginalhistoryhunter@gmail.co m	U2 11 Walowa Street, Narrabri, NSW 2390	Blue Mountains		
A1 Indigenous Services	Carolyn Hickey		cazadirect@live.com	10 Marie Pitt Place Glenmore Park 2745 NSW.	Blue Mountains Ashfield Auburn Bankstown Blacktown Blue Mountains Botany Bay Burwood Camden Campbelltown Canada Bay Canterbury Fairfield Hawkesbury The Hills Holroyd Hornsby Hunter's Hill		Carolyn is Wonnarua

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
					Hurstville Kogarah Ku-ring-gai Lane Cove Leichhardt Liverpool Manly Marrickville Mosman North Sydney Parramatta Penrith Pittwater Randwick Rockdale Ryde Strathfield Sutherland Sydney Warringah Waverley Willoughby Woollahra Wollondilly		
Cubbitch Barta	Glenda Chalker	Net Previded	Not provided	55 Nightingale Rd, Pheasants Nest NSW 2574	Camden Campbelltown	Liverpool Wollondilly	
	Rebecca Chalker	Not Provided	Not provided	99 Menangle street, Picton 2571			
Eric Keidge			Not provided	11 Olsson Close Hornsby Heights NSW 2077	The Hills Shire Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Burwood Ashfield Auburn Canada Bay	Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	
Gunjeewong Cultural Heritage Aboriginal Corporation	Cherie Carroll Turrise		gunjeewong@yahoo.com.au	1 Bellvue Place, Portland NSW, 2847	Hawkesbury Blacktown Penrith Fairfield	Holroyd Camden Campbelltown Parramatta	Cherie is a Ngunnawal Elder however lived in the Western Sydney area during her childhood.

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
							She recognises she is not from the area but has associations
Corroboree Aboriginal Corporation	Marilyn Carroll- Johnson		corroboreecorp@bigpond.com	PO Box 3340, Rouse Hill, NSW 2155	Western Sydney Camden Hawkesbury Blacktown Penrith Fairfield	Campbelltown Parramatta Holroyd Camden	Ngunnawal and lives in Western Sydney
Murra Bidgee Mullangari Aboriginal Corporation	Darleen Johnson Ryan Johnson		murrabidgeemullangari@yahoo.co m.au	PO Box 3035 Rouse Hill NSW 2155	Hawkesbury Blacktown Penrith Fairfield Blue Mountains	Holroyd Camden Campbelltown Parramatta	Born in Blacktown Hospital and worked in the Aboriginal community in the Western suburbs.
Muragadi Heritage Indigenous Corporation	Jesse Johnson		muragadi@yahoo.com.au	5 Hession Road, Nelson, NSW 2765	Western Sydney Camden	Campbelltown Parramatta	Ngunnawal and lives in Western Sydney
Bidjawong Aboriginal Corporation	James Carroll		Not provided	PO Box 124, Round Corner, NSW 2158	Hawkesbury Blacktown Penrith Fairfield	Holroyd Camden Campbelltown Parramatta	
Kamilaroi Yankuntjatjara Working Group	Phil Khan		philipkhan.acn@live.com.au	78 Forbes Street, Emu Plains, NSW 2750	Blue Mountains Ashfield Auburn Bankstown Blacktown Blue Mountains Botany Bay Burwood Camden Campbelltown Canada Bay Canterbury Fairfield Canberra Hawkesbury The Hills Holroyd Hornsby		

Organisation/	Contact Name	Phone Number	Email Address/	Postal	LGA's		Additional information
Individual			Fax	Address			
	Marria Clater				Hunter's Hill Hurstville Kogarah Ku-ring-gai Lane Cove Leichhardt Liverpool Manly Marrickville Mosman North Sydney Parramatta Penrith Pittwater Randwick Rockdale Ryde Strathfield Sutherland Sydney Warringah Waverley Willoughby Woollahra Wollondilly	Canada	
Wurrumay Pty Ltd	Kerrie Slater and Vicky Slater		wurrumay@hotmail.com;	89 Pyramid street, Emu Plains NSW 2750 PO Box 414 Emu Plains NSW 2750	Hawkesbury Blacktown Penrith Fairfield Holroyd Blue Mountains Sutherland Liverpool	Camden Campbelltown Parramatta Wollondilly The Hills Shire Auburn Bankstown	
Warragil Cultural Services	Aaron Slater (Manager)		Warragil c.s@hotmail.com		Hawkesbury Blacktown Penrith Fairfield	Holroyd Camden Campbelltown Liverpool Parramatta	
Tocomwall	Scott Franks		Not provided	PO Box 76, Caringbah NSW 1495	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown	Strathfield Burwood Ashfield Auburn Canada Bay Leichhardt Manly	

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
					The Hills Shire Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown	Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	
D'harawal Mens Aboriginal Corporation	Elwyn Brown		Not provided	187 Riverside Drive, Airds NSW 2560	Camden Campbelltown	Wollondilly	
Amanda Hickey Cultural Services	Amanda Hickey		amandahickey@live.com.au	57 Gough st emu plains 2750	Blue Mountains Ashfield Auburn Bankstown Blacktown Blue Mountains Botany Bay Burwood Camden Campbelltown Canada Bay Canterbury Fairfield Hawkesbury The Hills Holroyd Hornsby Hunter's Hill Hurstville Kogarah Ku-ring-gai Lane Cove	Strathfield Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Liverpool Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Penrith Parramatta Marrickville Wollondilly	Amanda is Wonnarua
Widescope Indigenous Group	Steven Hickey and Donna Hickey	(Steven) (Donna)	Not provided	73 Russell Street, Emu Plains, NSW 2750	Hawkesbury Blacktown Penrith	Fairfield Holroyd Parramatta Blue Mountains	
Dhinawan Culture & Heritage Pty Ltd	Stephen Fields	0411232285	dhinawan.ch@gmail.com		Hawkesbury Blacktown		

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
					Penrith Fairfield Cumberland Parramatta Hornsby The Hills Hornsby Ryde Auburn Blue Mountains Campbelltown Liverpool		
HSB Consultants	Patricia Hampton		Not provided	62 Ropes Crossing Boulevard, Ropes Crossing 2760	Hawkesbury Blacktown Penrith	Fairfield Holroyd Parramatta	
Rane Consulting	Tony Williams	02 88246991	ajw1901@bigpond.com	1 Pyrenees Way Beaumont Hills NSW 2155	Hawkesbury Blacktown Penrith	Fairfield Holroyd Parramatta	
Anthony Williams			Not provided	Unit 2 / 24 Goodwin Street Narrabeen NSW 2101	Hawkesbury Blacktown Penrith	Fairfield Holroyd Parramatta	
Gunyuu	Kylie Ann Bell	Not provided	gunyuuchts@gmail.com	Not provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River.
Walbunja	Hika Te Kowhai		walbunja@gmail.com	Not provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown	Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
					Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Wollondilly	
Badu	Karia Lea Bond		Not provided	11 Jeffery Place, Moruya, NSW 2537	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River
Goobah Developments	Basil Smith		Not provided	66 Grantham Road, Batehaven NSW, 2536	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River

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Wullung	Lee-Roy James Boota		Not provided	54 Blackwood Street, Gerringong, NSW, 2534	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River
Yerramurra	Robert Parson	Not provided	yerramurra@gmail.com	Not provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River
Nundagurri	Newton Carriage	Not Provided	nundagurri@gmail.com	Not Provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah	Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River

Organisation/	Contact Name	Phone Number	Email Address/	Postal	LGA's		Additional information
Individual			Fax	Address	Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	Pittwater Botany Bay Ryde Warringah Willoughby	
Murrumbul	Mark Henry	Not provided	murrumbul@gmail.com	Not provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River.
Jerringong	Joanne Anne Stewart		jerringong@gmail.com	Not provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River
Pemulwuy CHTS	Pemulwuy Johnson		pemulwuyd@gmail.com	14 Top Place, Mt Annan	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden	Strathfield Burwood Ashfield Auburn Canada Bay Leichhardt	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
					Campbelltown The Hills Shire Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown	Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	
Bilinga	Simalene Carriage	Not provided	bilingachts@gmail.com	Not provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River.
Munyunga	Kaya Dawn Bell	Not provided	munyungachts@gmail.com	Not provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River.

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
Wingikara	Hayley Bell	Not provided	wingikarachts@gmail.com	Not provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River.
Minnamunnung	Aaron Broad		Not provided	1 Waratah Avenue, Albion Park Rail NSW 2527	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	
Walgalu	Ronald Stewart	Not provided	walgaluchts@gmail.com	Not provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah	Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
					Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra	Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly	
Thauaira	Shane Carriage	Not provided	thauairachts@gmail.com	Not provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra	Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River
Dharug	Andrew Bond	Not provided	dharugchts@gmail.com	Not provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville	Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
					Bankstown Strathfield Randwick Woollahra	Blue Mountains Burwood The Hills Waverly Wollondilly	
Gulaga	Wendy Smith	Not Provided	gulagachts@gmail.com	Not Provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra	Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River
Biamanga	Seli Storer	Not Provided	biamangachts@gmail.com	Not Provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra	Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River

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						Waverly Wollondilly	
Callendulla	Corey Smith	Not Provided	cullendullachts@gmail.com	Not Provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra	Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River
Murramarang	Roxanne Smith	Not Provided	murramarangchts@gmail.com	Not Provided	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra	Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
DJMD Consultancy	Darren Duncan		darrenjohnduncan@qmail.com	Not Provided	Hawkesbury Blacktown Penrith Parramatta Sydney Marrickville Strathfield Warringah Willoughby Blue Mountains Burwood The Hills Ryde	Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater	Darren is associated with Metro and Deerubbin LALCs
Butucarbin Aboriginal Corporation	Jennifer Beale	(02)9832 7167	butuheritage@gmail.com.	PO Box E18, Emerton, NSW 2770	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra	Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly	Preferred contact via email
Didge Ngunawal Clan	Lillie Carroll Paul Boyd		didgengunawaician@yahoo.com.a u	33 Carlyle Crescent Cambridge Gardens NSW 2747	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland	Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby	

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
					Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra	Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly	
Ginninderra Aboriginal Corporation	Steven Johnson and Krystle Carroll		Ginninderra.corp@gmail.com	PO BOX 3143 Grose Vale NSW 2754	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra	Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly	
Garrara Aboriginal Corporation	Raymond Ingrey		raymond@bariyu.org.au		Sutherland Liverpool Camden Campbelltown Wollondilly		
Duncan Falk Consultancy	Duncan Falk	1	duncanfalk@hotmail.com	34 Robinia Drive, Bowral NSW 2576	Camden Campbelltown		
Sharon Hodgetts			sharonhodgetts@hotmail.com	21/29 Central Coast Hwy West Gosford 2250	Hawkesbury		
Wailwan Aboriginal Group	Philip Boney		waarlan12@outlook.com		Hawkesbury Blacktown Penrith	Ashfield Auburn Canada Bay	

Organisation/	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
Individual					Fairfield Leichhardt Holroyd Manly Camden Mosman Campbelltown Liverpool Lane Cove Parramatta Hunters Hill Sutherland Hornsby Sydney Ku-Ring-Gai Kogarah Pittwater Hurstville Botany Bay Rockdale Ryde Canterbury Warringah Marrickville Willoughby Bankstown Blue Strathfield Mountains Randwick Burwood Woollahra The Hills	
Guntawang Aboriginal Resources Incorporated	Wendy Morgan	9601 7183	Wenlissa01@hotmail.com	113 Reservoir Road Mt Pritchard NSW 2170	Camden Campbelltown Liverpool Fairfield Holroyd Wollondilly Blue Mountains	
Barking Owl Aboriginal Corporation	Mrs Jody Kulakowski (Director)		barkingowlcorp@gmail.com	2-65/69 Wehlow St. Mt Druitt	Hawkesbury Blacktown Penrith Canada Bay Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Hurstville Canterbury Marrickville Bankstown Strathfield Randwick Woollahra Ashfield Auburn Canada Bay Leichhardt Manly Canade Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Ku-Ring-Gai Rude Warringah Willoughby Blue Strathfield Mountains Randwick Waverly	

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
III WI YI WA WI			T MA	Addiooo	Wollondilly	
Yulay Cultural Services	Arika Jalomaki (Manager)		yulayculturalservices@gmail.com	15 Rowley Place, Airds NSW 2560	Deerubbin LALC Tharawal LALC Gandangarra LALC	LGAs of interest not specified, rather, LALC boundaries within which the organisation wish to be consulted
Thoorga Nura	John Carriage (Chief Executive Officer)		thoorganura@gmail.com	50B Hilltop Crescent, Surf Beach, 2536, NSW	Ashfield Leichhardt Auburn Liverpool Bankstown Manly Blacktown Marrickville Blue Mosman Mountains North Sydney Botany Bay Parramatta Burwood Penrith Camden Pittwater Campbelltown Canada Bay Rockdale Canterbury Ryde Fairfield Strathfield Hawkesbury Sutherland The Hills Sydney Holroyd Warringah Hornsby Waverley Hunter's Hill Willoughby Hurstville Woollahra Kogarah Wollondilly Ku-ring-gai Lane Cove	
Barraby Cultural Services	Lee Field (Manager)		barrabyculturalservices@qmail.co m	6 Macgibbon Parade, Old Erowal Bay, NSW 2540	Tharawal LALC Gandagarra LALC	LGAs of interest not specified, rather, LALC boundaries within which the organisation wish to be consulted
Yurrandaali Cultural Services	Bo Field (Manager)		yurrandaali cs@hotmail.com	3 Sheeran Street, Old Erowal Bay NSW 2540	Tharawal LALC Gandagarra LALC	LGAs of interest not specified, rather, LALC boundaries within which the organisation wish to be consulted
Darug Boorooberongal Elders Aboriginal Corporation	Paul Hand (chairpe rson)		paulhand1967@gmail.com	PO.Box 14 Doonside NSW 2767	Ashfield Leichhardt Auburn Liverpool Bankstown Manly Blacktown Marrickville Blue Mosman Mountains North Sydney	

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
				A COLOR OF THE PROPERTY OF THE	Botany Bay Burwood Camden Campbelltown Canada Bay Canterbury Fairfield Hawkesbury The Hills Holroyd Hornsby Hunter's Hill Hurstville Kogarah Ku-ring-gai Lane Cove	Parramatta Penrith Pittwater Randwick Rockdale Ryde Strathfield Sutherland Sydney Warringah Waverley Willoughby Woollahra Wollondilly	
B.H. Heritage Consultants	Ralph Hampton Nola Hampton		hamptonralph46@gmail.com kinghampton@77gmail.com	184 Captain Cook Drive Willmot 2770 NSW 95 Mount Ettalong Road Umina Beach 2257 NSW	Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra	Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly	Nola and Ralph would BOTH like to be notified of all projects
Ngambaa Cultural Connections	Kaarina Slater		ngambaaculturalconnections@hot mail.com	6 Natchez Cresent, Greenfield Park NSW 2167	Ashfield Auburn Bankstown Blacktown Blue Mountains Botany Bay Burwood Camden	Leichhardt Liverpool Manly Marrickville Mosman North Sydney Parramatta Penrith Pittwater	LALC boundaries within which the organisation wish to be consulted: Deerubbin LALC Gandangarra LALC Tharawal LALC

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
Individual			гах	Address	Campbelltown Canada Bay Canterbury Fairfield Hawkesbury The Hills Hornsby Hunter's Hill Kogarah Ku-ring-gai Lane Cove Rodde Ryde Strathfield Strathfield Waterland Sydney Warringah Waverley Willoughby Woollahra Wollondilly	
Goodradigbee Cultural & Heritage Aboriginal Corporation,	Caine Carroll		goodradigbee1@outlook.com	1 Morilla Road, East Kurrajong NSW 2758	Ashfield Auburn Blankstown Blacktown Blue Mosman Mountains Botany Bay Burwood Camden Campbelltown Canada Bay Canterbury Fairfield Hawkesbury The Hills Hornsby Hunter's Hill Hurstville Kogarah Kandwick Sydney Warringah Waverley Hunter's Hill Ku-ring-gai Lane Cove Manly Marrickville Mosman North Sydney Parramatta Penrith Pittwater Randwick Rockdale Rockdale Strathfield Strathfield Warringah Waverley Willoughby Woollahra Wollondilly	
Mura Indigenous Corporation,	Phillip Carroll		mura.indigenous@bigpond.com	11 Nargal Street Flinders NSW 2529	Ashfield Leichhardt Auburn Liverpool Bankstown Manly Blacktown Marrickville Blue Mosman Mountains North Sydney Botany Bay Parramatta Burwood Penrith Camden Pittwater Campbelltown Canada Bay Rockdale	

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
				Address	Canterbury Fairfield Hawkesbury The Hills Holroyd Hornsby Hunter's Hill Kogarah Ku-ring-gai Lane Cove Strathfield Strathfield Wutherland Sydney Warringah Waverley Willoughby Woollahra Wollondilly	
Aragung Aboriginal Cultural Heritage Site Assessments	Jamie Eastwood	0298323732	James.eastwood@y7mail.com	33 Bulolo Drive Whalan NSW 2770	Ashfield Leichhardt Auburn Liverpool Bankstown Manly Blacktown Marrickville Blue Mosman Mountains North Sydney Botany Bay Parramatta Burwood Penrith Camden Pittwater Campbelltown Canada Bay Canterbury Ryde Fairfield Strathfield Hawkesbury The Hills Sydney Holroyd Warringah Hornsby Waverley Hunter's Hill Willoughby Hurstville Woollahra Kogarah Wollondilly Ku-ring-gai Lane Cove	
Louise Adermann	Louise Adermann		louiseadermann@hotmail.com	Number 10/8 Selmon Street Sans Souci 2219 NSW	Bayside Council. The Bayside Council area includes the suburbs of Arncliffe, Banksia, Banksmeadow , Bardwell Park, Bardwell Valley, Bexley, Bexley North, Botany,	

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's		Additional information
					Brighton-Le-Sands, Carlton (part), Daceyville, Dolls Point, Eastgardens, Eastlakes, Hillsdale, Kingsgrove (part), Kogarah (part), Kyeemagh, Mascot, Monterey, Pagewood, Ramsgate (part), Ramsgate Beach, Rockdale, Rosebery (part), Sandringham, Sans Souci (part), Turrella and Wolli Creek		
Paul Gale	Paul Gale		Cenobite100@gmail.com	67 Ginahgullah Avenue Gross Vale NSW 2753	Blue Mountains Blacktown Hawkesbury		
Waawaar Awaa	Rodney Gunther		Waawaar.awaa@gmail.com	15 Bungonia Street Prestons NSW 2170	Ashfield Auburn Bankstown Blacktown Blue Mountains Botany Bay Burwood Camden Campbelltown Canada Bay	Leichhardt Liverpool Manly Marrickville Mosman North Sydney Parramatta Penrith Pittwater Randwick Rockdale Ryde	

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
				Addiess	Canterbury Strathfield Fairfield Sutherland Hawkesbury Sydney The Hills Warringah Holroyd Waverley Hornsby Willoughby Hunter's Hill Woollahra Hurstville Wollondilly Kogarah Ku-ring-gai Lane Cove	
Clive Freeman	Clive Freeman	Mob Home Number: 02-44421117	clive.freeman@y7mail.com	6 Dhugan Close Wreck Bay Aboriginal Community JBT 2540	Blacktown, Penrith Fairfield Parramatta Blue Mountains Holroyd Bankstown Liverpool Camden Campbelltown Wollondilly Sutherland Kogarah Randwick Auburn Canada Bay Strathfield Sydney Woollahra Waverley Burwood Ashfield Leichhardt Marrickville	
Guringai Tribal Link Aboriginal Corporation	Tracey Howie		tracey@guringai.com.au	PO Box 4061 Wyongah NSW 2259	North Sydney Lane Cove Hornsby Ku-Ring-Gai Pittwater Hawkesbury	

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
Galamaay Cultural Consultants (GCC)	Robert Slater	Mob:	galamaay@hotmail.com		121 Robert Street, Tamworth NSW 2340	Penrith Fairfield Parramatta Holroyd Bankstown Liverpool Camden Campbelltown Wollondilly Sutherland Auburn



28 July 2020

By email: acrisp@urbis.com.au

Andrew Crisp Urbis Pty Ltd Level 8, 123 Pitt Street SYDNEY NSW 2000

Dear Andrew,

Request - Search for Registered Aboriginal Owners

We refer to your email dated 6 July 2020 seeking information regarding an Aboriginal Cultural Assessment for the proposed Distribution Centre on Mamre Road, Kemps Creek, NSW.

Under Section 170 of the Aboriginal Land Rights Act 1983 the Office of the Registrar is required to maintain the Register of Aboriginal Owners (RAO). A search of the RAO has shown that there are currently no Registered Aboriginal Owners in the project area.

We suggest you contact the Deerubbin Local Aboriginal Land Council on (02) 4724 5600 or via email - kcavanagh@deerubbin.org.au as they may wish to participate.

Yours sincerely

Rachel Rewiri Project Officer

Office of the Registrar, Aboriginal Land Rights Act 1983



Our reference: ECM 9203239 Contact: Rhian Greenup Telephone: (02) 4732 7637

23 July 2020

Andrew Crisp Level 8 123 Pitt Street SYDNEY NSW 2000

Attention: Andrew Crisp

Email: acrisp@urbis.com.au

Dear Mr Crisp,

Re: Request for information on Aboriginal Stakeholder Groups

Reference is made to correspondence from Urbis dated 6 July 2020 requesting advice regarding relevant Aboriginal individuals and/or communities for the preparation of a State Significant Development Application for a Warehousing and Distribution Centre. I apologise for the delay in responding.

You are advised that the Deerubbin Aboriginal Land Council is the Land Council that covers the Penrith Local Government area and as such has statute to provide commentary and advice to Council or other organisations in relation to planning documents and development applications.

However, all Aboriginal groups and individuals may be able to comment through broader public consultation processes in line with Council's Community Participation Policy.

Deerubbin Land Council may be contacted by email at staff@deerubbin.org.au, by mail at P.O Box 40 Penrith BC, NSW 2751 or by phone on (02) 4724 5600.

Yours faithfully

Rhian Greenup Secretary – Management Team Development Services

Penrith City Council PO Box 60, Penrith NSW 2751 Australia T 4732 7777 F 4732 7958 penrithcity.nsw.gov.au



From: Geospatial Search Requests

Aaron Olsen

Cc Andrew Crisn

RE: SR20/845 - Search Request for Lots 59 & 60 DP 259135 (Our Ref: P0022231) - SR20/845 Subject:

Wednesday, 26 August 2020 8:26:45 PM

Attachments: image002.png image003.prig image005.png image006.png

UNCLASSIFIED

Native title search - NSW Parcels-Lots 59 & 60 DP259135

Your ref: P0022231 - Our ref: SR20/845

Dear Aaron Olsen,

Thank you for your search request received on 25 August 2020 in relation to the above area. Based on the records held by the National Native Title Tribunal as at 26 August 2020 it would appear that there are no Native Title Determination Applications, Determinations of Native Title, or Indigenous Land Use Agreements over the identified area.

Search Results

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

- Schedule of Native Title Determination Applications
- · Register of Native Title Claims
- Native Title Determinations
- Indigenous Land Use Agreements (Registered and notified)

At the time this search was carried out, there were no relevant entries in the above databases.

Cadastral Data as at: 01/07/2020

Parcel ID	Feature Area SqKm	Tenure	NNTT file number	Name	Category	Percent Selected Feature
59//DP259135	0.2303	FREEHOLD	No overlap			0.00%
60//DP259135	0.1012	FREEHOLD	No overlap			0.00%

For more information about the Tribunal's registers or to search the registers yourself and obtain copies of relevant register extracts, please visit our website

Information on native title claims and freehold land can also be found on the Tribunal's website here: Native title claims and freehold land.

Please note: There may be a delay between a native title determination application being lodged in the Federal Court and its transfer to the Tribunal. As a result, some native title determination applications recently filed with the Federal Court may not appear on the Tribunal's databases.

The search results are based on analysis against external boundaries of applications only. Native title applications commonly contain exclusions clauses which remove areas from within the external boundary. To determine whether the areas described are in fact subject to claim, you need to refer to the "Area covered by claim" section of the relevant Register Extract or Schedule Extract and any maps attached.

Search results and the existence of native title

Please note that the enclosed information from the Register of Native Title Claims and/or the Schedule of Applications is not confirmation of the existence of native title in this area. This cannot be confirmed until the Federal Court makes a determination that native title does or does not exist in relation to the area. Such determinations are registered on the National Native Title Register.

The Tribunal accepts no liability for reliance placed on enclosed information

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

If you have any further queries, please do not hesitate to contact us on the free call number 1800 640 501.

Regards,

Geospatial Searches

National Native Title Tribunal | Perth

Email: GeospatialSearch@nntt gov au | www.nntt.gov.au

From: Aaron Olsen <aolsen@urbis.com.au> Sent: Tuesday, 25 August 2020 11:05 AM

To: Geospatial Search Requests < Geospatial Search@NNTT.gov.au>

Cc: Andrew Crisp <acrisp@urbis.com.au>

Subject: SR20/845 - Search Request for Lots 59 & 60 DP 259135 (Our Ref: P0022231)

Caution: This is an external email. DO NOT click links or open attachments unless you recognise the sender and know the content is safe.

Good afternoon

Please find attached a search request for the Native Title Tribunal for Lots 59 & 60 DP 259135 (754-770 & 784-786 Mamre Road, Kemps Creek).

If you have any questions or need any further information, please let me know.

Kind regards

AARON OLSEN

HERITAGE ASSISTANT **D** +61 2 8233 9957 **T** +61 2 8233 9900 E aolsen@urbis.com au













ANGEL PLACE, LEVEL 8, 123 PITT STREET SYDNEY, NSW 2000, AUSTRALIA

Our highest priority is the health and wellbeing of our people, clients and community. Click here to read Urbis' response to COVID-19.

STAGE 1.3 – PUBLIC NOTICE



Mamre Road Development/ Kemps Creek NSW Aboriginal Cultural Heritage Assessment – Community Consultation Stage 1

The GPT Group (the Proponent) are preparing a State Significant Development Application (SSDA) for 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW (hereafter referred as the subject area) which will involve construction of a warehousing and distribution centre. Urbis is assisting the Proponent in undertaking an Aboriginal Cultural Heritage Assessment (ACHA) to accompany the SSDA. The proponent can be contacted directly via:

Casey Brasher Project Manager The GPT Group Casey.Brasher@gpt.com.au Phone: +61 3 9922 1160

In accordance with Section 4.1.3 of the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010) and Clause 80C of the NSW National Parks and Wildlife Regulation 2009, the Proponent is seeking the registration of Aboriginal persons or groups who may hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) that may be present in the subject area.

The purpose of community consultation with Aboriginal people is to assist the Proponent in the preparation of the ACHA, potential test excavation program and the assessment of the cultural heritage significance of the subject area.

Please register your interest in writing to the contact details provided below by 5.00pm 26th August 2020.

Andrew Crisp Senior Consultant Urbis Pty Ltd acrisp@urbis.com.au Level 8 123 Pitt Street, Sydney, NSW, 2000.

Please be advised that the Proponent is required to forward the names of Aboriginal persons and groups who register an interest to Deerubbin Local Aboriginal Land Council and Aboriginal Cultural Heritage Regulation Branch of the Department of Premier and Cabinet, unless the person or group specifies that they do not want their details released.



Recognition of Cape York Land Council as a Native Title Representative Body

The Minister for Indigenous Australians, the Hon Ken Wyatt MP, is considering an application from Cape York Land Council (CYLC) for recognition as the native title representative body for the Cape York Region. Native title representative bodies help people to make native title claims and agreements. CYLC currently performs these functions as a native title service provider.

People with native title interests in the Cape York region, and Aboriginal and Torres Strait Islander people living in the region can make a submission to inform the Minister's decision.

Submissions are due by **5.00 pm AEST on 26 August 2020** and can be made via email to nativetitle@niaa.gov.au.

CYLC will be given an opportunity to comment on submissions.

For more information, including how to send submissions by post, sist niaa.gov.au/consultation or contact us on 1800 079 098.





WellMob team: Dr Judy Singer, Talah Laurie, Sharnie Roberts and David Edwards.

Website focus on healthy mob

By NICK PATON



community
consultation with
the Bundjalung
nation of the
Northern Rivers of
NSW has led to the

creation of a new health website which focuses on culturally safe, strengths-based wellbeing resources developed by and for mob.

Available to all frontline community health and wellbeing, mental health, family support, education and youth services workers alike, the WellMob website has been overseen by the University Centre for Research Health (UCRH) in Lismore.

Led by Indigenous experts with extensive guidance and input by advisory and reference groups made up of Indigenous Elders and community members from Larrakia (Darwin), Kaurna (Adelaide) and Bundjalung (Lismore NSW) nations, the website brings together apps, podcasts, videos, helplines, social media, online programs, and other websites, all with a focus on the social and emotional wellbeing of Aboriginal and Torres Strait Islander people.

Widjabul Wiyabal woman Sharnie Roberts from the staff development and training team at WellMob said the website is a one-stop-shop where workers can feel confident to find and share valuable online wellbeing resources with their clients and customers.

"Community and workers on the front line came to us and expressed their need to have resources available that were created by mob, and for mob, all in the one place, and easy to locate," Ms Roberts said.

"The website will appeal to many Aboriginal Community Controlled Health Organisations and their clients because it's associated with resources that acknowledge all the important work these organisations do," she said.

"In a way, the website will act as a tool for health professionals who need to be working in a culturally safe and culturally inclusive way."

Gumbaynggirr Yaegl woman Talah Laurie works as part of the Content Creation, Social Media and Promotions team for Wellmob.

She said the website also provides a safe online space for Indigenous communities to access various digital wellbeing resources that have been developed directly through the hearts and minds of Aboriginal and Torres Strait Islander health workers and communities themselves.

"There'e a whole range of resources available for mob that deal with social and emotional wellbeing, but we know it's not just about mob having access to mental health resources, they need to have access to resources which deal with things like their physical health too," Ms Laurie said.

"And one of the best things about WellMob is that we provide resources relating to family, culture and connection, and the impacts of health which are related specifically to Indigenous Australians," she said.

"We know, that with mob, many have English as their second, third or even fourth language, and so lot of my role involves breaking down some of the clinical and scholarly jargon into words that are relatable and able to be understood by mob."

Worimi man and WellMob co-director David Edwards said the project came to life thanks to Professor James Bennett-Levy, e-Mental Health in Practice (eMHPrac) and the Australian Indigenous HealthInfonet organisation.

He said the recent launch of the website was timely given the reduction in face-to-face clinical support during the COVID-19 pandemic, which has led to an increase in tele-health engagement.

"A lot of our healthcare workers have had to get used to less consultations in person, and so having this digital resource available online really has been a beneficial way for our health workers to get critical resources out to mob, especially when a lot of mob are struggling with aspects of the pandemic," Mr Edwards said.

Singer has worked on the WellMob project for well over six years. She said that the website would never have been made possible without the early input by members of the Ngayundi Aboriginal Health Council.

"Along with the reference groups and advisory groups, we initially started this project through the use of 'learning circles' on Bundjalung country using information provided by local community members and healthcare workers who could see a gap in what was available for Aboriginal people in the digital mental health space," Dr Singer said.

"We know that there are a lot of spaces out there in the mainstream that target Aboriginal and Torres Strait islander people, but this resource really is something that has been Indigenous-led and driven by Indigenous people the whole way," she said.

"The thing I have loved most about working on this project is that I get to learn something new everyday and be involved in something that is groundbreaking and truly inspiring."

Visit www.wellmob.org.au

STAGE 1.3 – RAP NOTICES

From: <u>Aaron Olsen</u>

Cc: <u>Andrew Crisp</u>; <u>Balazs Hansel</u>

"daruglandobservations@gmail.com"; "markdyer2009@live.com.au"; "cazadirect@live.com";

<u>"gunjeewong@yahoo.com.au"; "corroboreecorp@bigpond.com"; "murrabidgeemullangari@yahoo.com.au";</u>

"philipkhan.acn@live.com.au"; "wurrumay@hotmail.com"; "Warragil c.s@hotmail.com"; "amandahickey@live.com.au"; "dhinawan.ch@gmail.com"; "ajw1901@bigpond.com";

<u>"gunyuuchts@gmail.com"; "walbunja@gmail.com"; "yerramurra@gmail.com"; "nundagurri@gmail.com"; "murrumbul@gmail.com"; "jerringong@gmail.com"; "pemulwuyd@gmail.com"; "bilingachts@gmail.com";</u>

"munyungachts@gmail.com"; "wingikarachts@gmail.com"; "walgaluchts@gmail.com" "thauairachts@gmail.com"; "dharugchts@gmail.com"; "gulagachts@gmail.com";

"biamangachts@gmail.com"; "cullendullachts@gmail.com"; "murramarangchts@gmail.com"; "darrenjohnduncan@gmail.com"; "butuheritage@gmail.com"; "didgengunawalclan@yahoo.com.au"; "Ginninderra.corp@gmail.com"; "waarlan12@outlook.com"; "barkingowlcorp@gmail.com"; "yulayculturalservices@gmail.com"; "thoorganura@gmail.com"; "paulhand1967@gmail.com";

_yulayculturalservices@gmail.com; _tnoorganura@gmail.com; _pauinand1967@gmail.com; <u>"hamptonralph46@gmail.com"; "kinghampton@77gmail.com"; "ngambaaculturalconnections@hotmail.com";</u>

"goodradigbee1@outlook.com"; "mura.indigenous@bigpond.com"; "James.eastwood@y7mail.com"; "Waawaar.awaa@gmail.com"; "clive.freeman@y7mail.com"; "galamaay@hotmail.com"; "goobahchts@gmail.com"; "scott@tocomwall.com.au"; "widescope.group@live.com";

"baduchts@gmail.com"; "minnamunnung@gmail.com"

Subject: GPT Mamre Road - Aboriginal Cultural Heritage Assessment - Aboriginal Community Consultation Stage 1 -

Invitation to Register

Date: Wednesday, 29 July 2020 10:59:00 AM
Attachments: P0022231 GPTMamreRd Stage 1.3.pdf

image002.png image004.png image006.png image008.png image010.png

Good morning

Urbis has been commissioned by The GPT Group (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW (hereafter referred to as 'the subject area').

Urbis is preparing an ACHA to accompany the State Significant Development Application (SSDA) for a warehousing and distribution centre within the subject area. The first stage of works, to be completed by 2021, will comprise site preparation works, including bulk earthworks, services and associated landscaping, as well as the construction of two warehouses. The second stage, to be completed by 2023, will include the construction of a further three warehouses.

The ACHA is to be carried out in accordance with relevant guidelines under the National Parks and Wildlife Act 1974 (NPW Act), including the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011). The assessment would detail any potential Aboriginal cultural heritage resources within the subject area and provide recommendations regarding management of those resources.

The Proponent can be contacted via:

Casey Brasher

Project Manager

The GPT Group

Casey.Brasher@gpt.com.au

Level 10 Melbourne Central Tower

360 Elizabeth Street

Melbourne VIC 3000

In accordance with the *Aboriginal cultural heritage consultation requirements for proponents* (DEECW 2010) (the Consultation Requirements) and Clause 80C of the NSW National Parks and Wildlife Regulation 2009, the Proponent will conduct a community consultation process with registered Aboriginal people to assist with the preparation of the ACHA to inform the EIS and comply with the anticipated SEARs requirements including:

- Identifying and describing the Aboriginal cultural heritage values that exist across the subject area in accordance with the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW OEH (2010), and documenting these in an Aboriginal Cultural Heritage Assessment Report (ACHAR) which may include the need for surface survey and test excavation;
- Undertaking consultation with Aboriginal people and document in accordance with Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW);
- The preparation of the ACHAR to support the SSDA, demonstrating attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts; and
- Recording of any Aboriginal objects in line with the requirements of the Aboriginal Heritage Information Management System (AHIMS) that may be identified within the subject area.

In accordance with Section 4.1.2 of the Consultation Requirements, Urbis proposes to compile a list of Aboriginal people and organisations who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places that may exist within the subject area.

Should you be aware of any Aboriginal persons and/or organisations that may hold an interest in the project, please provide their details at your earliest convenience and preferably by **26**th **August 2020** in writing to:

Andrew Crisp
Senior Consultant
Urbis
acrisp@urbis.com.au
Level 8 123 Pitt Street
Sydney, NSW, 2000.

Please be advised that, as per the Consultation Requirements, the Proponent is required to forward the names of Aboriginal persons and groups who register an interest (Registered Aboriginal Parties) to the Deerubbin Local Aboriginal Land Council and Aboriginal Cultural Heritage Regulation Branch of the Department of Premier and Cabinet (DPC) unless the person or group specifies that they do not want their details released.

Please be advised that in accordance to Section 3.4 of the Consultation Requirements, inclusion in the consultation process does not automatically result in paid site assessment. The decision on who is engaged for delivering particular services is decided by the proponent and will be based on a range of considerations including skills, relevant experience, and providing necessary certificates of currency.

Please do not hesitate to contact us should you have any queries in relation to the provided information.

Our formal letter is attached.

Kind regards

AARON OLSEN

HERITAGE ASSISTANT

D +61 2 8233 9957 T +61 2 8233 9900

E aolsen@urbis.com.au

SHAPING CITIES AND COMMUNITIES











ANGEL PLACE, LEVEL 8, 123 PITT STREET SYDNEY, NSW 2000, AUSTRALIA

Our highest priority is the health and wellbeing of our people, clients and community. Click here to read Urbis' response to COVID-19.

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ANGEL PLACE LEVEL 8, 123 PITT STREET SYDNEY NSW 2000

URBIS COM AU Urbis Pty Ltd ABN 50 105 256 228

29 July 2020

To whom it may concern,

P0022231 - GPT MAMRE ROAD - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER

Urbis has been commissioned by The GPT Group (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW (hereafter referred to as 'the subject area') (see attached figure).

Urbis is preparing an ACHA to accompany the State Significant Development Application (SSDA) for a warehousing and distribution centre within the subject area. The first stage of works, to be completed by 2021, will comprise site preparation works, including bulk earthworks, services and associated landscaping, as well as the construction of two warehouses. The second stage, to be completed by 2023, will include the construction of a further three warehouses.

The ACHA is to be carried out in accordance with relevant guidelines under the National Parks and Wildlife Act 1974 (NPW Act), including the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011). The assessment would detail any potential Aboriginal cultural heritage resources within the subject area and provide recommendations regarding management of those resources.

The Proponent can be contacted via:

Casey Brasher
Project Manager
The GPT Group
Casey.Brasher@gpt.com.au
Level 10 Melbourne Central Tower
360 Elizabeth Street
Melbourne VIC 3000

In accordance with the Aboriginal cultural heritage consultation requirements for proponents (DEECW 2010) (the Consultation Requirements) and Clause 80C of the NSW National Parks and Wildlife Regulation 2009, the Proponent will conduct a community consultation process with registered Aboriginal people to assist with the preparation of the ACHA to inform the EIS and comply with the anticipated SEARs requirements including:

Identifying and describing the Aboriginal cultural heritage values that exist across the subject area in accordance with the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW OEH (2010), and documenting these in an Aboriginal Cultural Heritage Assessment Report (ACHAR) which may include the need for surface survey and test excavation;



- Undertaking consultation with Aboriginal people and document in accordance with Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW);
- The preparation of the ACHAR to support the SSDA, demonstrating attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts; and
- Recording of any Aboriginal objects in line with the requirements of the Aboriginal Heritage Information Management System (AHIMS) that may be identified within the subject area.

In accordance with Section 4.1.2 of the Consultation Requirements, Urbis proposes to compile a list of Aboriginal people and organisations who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places that may exist within the subject area.

Should you be aware of any Aboriginal persons and/or organisations that may hold an interest in the project, please provide their details at your earliest convenience and preferably by 26th August 2020 in writing to:

Andrew Crisp Senior Consultant Urbis acrisp@urbis.com.au Level 8 123 Pitt Street, Sydney, NSW, 2000.

Please be advised that, as per the Consultation Requirements, the Proponent is required to forward the names of Aboriginal persons and groups who register an interest (Registered Aboriginal Parties) to the Deerubbin Local Aboriginal Land Council and Aboriginal Cultural Heritage Regulation Branch of the Department of Premier and Cabinet (DPC) unless the person or group specifies that they do not want their details released.

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Please do not hesitate to contact us should you have any queries in relation to the provided information.

Yours sincerely,

Andrew Crisp Senior Consultant +61 2 8233 7642 acrisp@urbis.com.au

harwollens



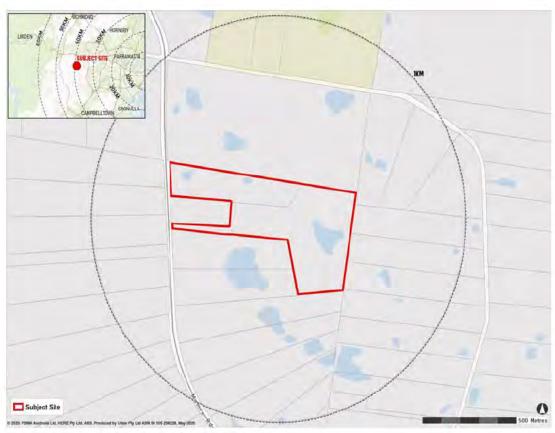


Figure 1 - Regional Location of the Subject Area

STAGE 1.3 – RAP RESPONSES

From: <u>Carolyn .H</u>

To: <u>Aaron Olsen</u>; <u>Andrew Crisp</u>

Subject: Re: GPT Mamre Road - Aboriginal Cultural Heritage Assessment - Aboriginal Community Consultation Stage

1 - Invitation to Register

Date: Thursday, 30 July 2020 5:20:49 PM

Attachments: <u>image002.png</u>

image004.png image006.png image008.png image010.png



Contact: Carolyn Hickey

M: 0411650057

E: Cazadirect@live.com

A: 10 Marie Pitt Place, Glenmore Park, NSW 2745

ACN: 639 868 876

Hi,

I would like to register for consultation and field work, I hold cultural knowledge relevant to determining the cultural significance of any Aboriginal objects and values that exist within the project area. Kind Regards, Carolyn Hickey



From: Aaron Olsen <aolsen@urbis.com.au>
Sent: Wednesday, 29 July 2020 10:59 AM

Cc: Andrew Crisp <acrisp@urbis.com.au>; Balazs Hansel <bhansel@urbis.com.au>

Subject: GPT Mamre Road - Aboriginal Cultural Heritage Assessment - Aboriginal Community

Consultation Stage 1 - Invitation to Register

Good morning

Urbis has been commissioned by The GPT Group (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW (hereafter referred to as 'the subject area').

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The Proponent can be contacted via:

Casey Brasher
Project Manager
The GPT Group
Casey.Brasher@gpt.com.au
Level 10 Melbourne Central Tower
360 Elizabeth Street
Melbourne VIC 3000

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Andrew Crisp Senior Consultant Urbis acrisp@urbis.com.au Level 8 123 Pitt Street Sydney, NSW, 2000.

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Please do not hesitate to contact us should you have any queries in relation to the provided information.

Our formal letter is attached.

Kind regards

AARON OLSEN

HERITAGE ASSISTANT

D +61 2 8233 9957 **T** +61 2 8233 9900 **E** aolsen@urbis.com.au













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From: <u>Amanda DeZwart</u>

To: <u>Aaron Olsen; Andrew Crisp</u>

Subject: Re: GPT Mamre Road - Aboriginal Cultural Heritage Assessment - Aboriginal Community Consultation Stage

1 - Invitation to Register

Date: Monday, 3 August 2020 5:01:13 PM

Attachments: image002.png

image004.png image006.png image008.png image010.png



Contact: Amanda DeZwart Mobile: 0434 480 558

Address: 57 Gough St, Emu Plains, NSW 2750

ABN: 498 242 132 40

Ηi

I would like to register for consultation Meetings and future field work, I hold cultural knowledge to determine cultural significance of Aboriginal Objects and areas that exist in the project area.

Kind regards, Amanda DeZwart

From: Aaron Olsen <aolsen@urbis.com.au>
Sent: Wednesday, 29 July 2020 10:59 AM

Cc: Andrew Crisp <acrisp@urbis.com.au>; Balazs Hansel <bhansel@urbis.com.au>

Subject: GPT Mamre Road - Aboriginal Cultural Heritage Assessment - Aboriginal Community

Consultation Stage 1 - Invitation to Register

Good morning

Urbis has been commissioned by The GPT Group (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW (hereafter referred to as 'the subject area').

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Please do not hesitate to contact us should you have any queries in relation to the provided information.

Our formal letter is attached.

Kind regards

AARON OLSEN

HERITAGE ASSISTANT

D +61 2 8233 9957 T+61 2 8233 9900

E aolsen@urbis.com.au













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From: James Eastwood
To: Aaron Olsen
Subject: Invitation to Register

 Date:
 Monday, 24 August 2020 12:10:51 PM

 Attachments:
 URBIS REGISTRATION MAMER ROAD.docx

Good morning

Thank you for sending a invitation to register for RE: P0022231 MAMRE ROAD - ABORIGINAL CULTURAL HERITAGE ASSESSMENT - ABORIGINAL COMMUNITY CONSULTATION STAGE 1 - INVITATION TO REGISTER . Please find a formal letter of acceptance to the above mention invitation attach to this email.

Kind regards ARAGUNG Aboriginal Cultural Heritage Site Assessments co/Jamie Eastwood 0427793334



ARAGUNG

33 Bulolo Dr Whalan NSW 2770

P 0427793334

Email james.eastwood@y7mail.com

Aboriginal Cultural Heritage Site Assessments

Protecting the Past Preserving the Future

24/08/2020

Andrew Crisp

Urbis

RE: P0022231 –GPT MAMRE ROAD – ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER

NOTIFICATION OF REGISTRATION OF INTERESRT

Dear Darrienne

I am writing to you to express my strong cultural interest in registering for the above community consultation. Having worked extensively in and around the kempt creek Area for many years as an Aboriginal site Officer I believe that the proposed development may impact on Aboriginal objects and places

With a strong cultural connection to the proposed subject Area and being a member of the Darug Aboriginal community I believe that I may hold relevant cultural knowledge to determine the significance of Aboriginal objects and places in this area. It is within all of my utmost cultural interest that I would like to be involved in all aspects of the proposed project by offering my cultural understating of the area my connection to country and my cultural feedback as a local Indigenous person.

Yours sincerely James Eastwood

From: <u>Barking Owl Aboriginal Corporation</u>

To: <u>Aaron Olsen</u>

Subject: Re: GPT Mamre Road - Aboriginal Cultural Heritage Assessment - Aboriginal Community Consultation Stage

1 - Invitation to Register

Date: Sunday, 30 August 2020 6:21:12 AM

Attachments: <u>image002.png</u>

image004.png image006.png image008.png image010.png

MAMRE RD EOI BOAC.pdf

On Wed, Jul 29, 2020 at 10:59 AM Aaron Olsen aolsen@urbis.com.au wrote:

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Project Manager

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Our formal letter is attached.

Kind regards

AARON OLSEN

HERITAGE ASSISTANT

D +61 2 8233 9957 T+61 2 8233 9900 E aolsen@urbis.com.au













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--

Kind regards

Jody Kulakowski 0426 242 015 Barking Owl Aboriginal Corporation

Barking Owl Aboriginal Corporation ICN: 8822

2-65/69 Wehlow St MT DRUITT NSW 2770 barkingowlcorp@gmail.com



26/08/2020

RE: 754-770 & 784-786 MAMRE RD KEMPS CREEK

Dear Andrew,			
We would like to register interest for	community consultation and any fieldwork if required.		
Registered Aboriginal Party:	Barking Owl Aboriginal Corporation		
Contact Person:	Jody Kulakowski		
Contact Phone:	0410 601 451		
Contact Email:	barkingowlcorp@gmail.com		
The area is an important part of our of	culture due to previous generations living in and around the area,		
we maintain a special connection and	d responsibility as current generations.		
We can provide fit and hardworking s	site officers with current white cards and all PPE equipment.		
We can provide copies of relevant ce	ertificates of currency of insurances.		
Members put forward have experience	ce in a variety of community consultation projects.		
Please feel free to contact by email $\underline{\mathbf{b}}$	parkingowlcorp@gmail.com if you require any further information.		
Kind regards			
Jody Kulakowski			

BOAC

From: Andrew Crisp
To: Aaron Olsen

Subject: FW: Aboriginal Community Consultation - GPT Mamre Road ACHA

Date: Tuesday, 25 August 2020 11:12:04 AM

Andrew Crisp Senior Consultant

D +61 2 8233 7642 T +61 2 8233 9900 M

E acrisp@urbis.com.au

URBIS

ANGEL PLACE, LEVEL 8, 123 PITT STREET Sydney, NSW 2000, Australia

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----Original Message-----

From: Lee Field <barrabyculturalservices@gmail.com>

Sent: Tuesday, 11 August 2020 9:01 PM To: Andrew Crisp <acrisp@urbis.com.au>

Subject: Aboriginal Community Consultation - GPT Mamre Road ACHA

Dear Andrew,

Barraby Cultural Services would like to be consulted on this project. Please see my details below.

Company: Barraby Cultural Services

Contact: Lee Field

Address: 10B Elphin Street, Tahmoor NSW

Phone: 0431 314 892

If you need any more info please contact me on the details provided.

Thanks Lee Field From: Butucarbin Heritage
To: Andrew Crisp
Cc: Aaron Olsen

Subject: Mamre Road consultation

Date: Thursday, 27 August 2020 12:03:57 AM

To whom it may concern,

On behalf of Butucarbin, I would like to register interest in the consultation in relation to the project at Mamre Road.

Kind regards,

--

Lowanna Gibson Project Manager for Butucarbin Cultural Heritage Assessments B.A Archaeology/Anthropology USYD Juris Doctor Candidate UTS From: Clive Freeman

To: Aaron Olsen

Subject: Re: GPT Mamre Road - Aboriginal Cultural Heritage Assessment - Aboriginal Community Consultation Stage

1 - Invitation to Register

Date: Wednesday, 29 July 2020 3:24:52 PM

Attachments: Freeman and Marx c o f c archeology liability (2).pdf

profeshional indemnity insurance.pdf

image010.png image004.png image002.png image008.png image006.png

Hi team,

We at Freeman 7 Marx are excited by the opportunity to participate in this project and look forward to any future reports on this.

I have attached a copy to file a copy of our Certificate of currencies for both the professional and public liabilities.

Just so you know we have a group of 6 officers to assist, 3 women and 3 men.

Kind Regards

Clive Freeman (M) 0437721481

Please consider the environment before printing this message

On Wednesday, 29 July 2020, 10:59:38 am AEST, Aaron Olsen <aolsen@urbis.com.au> wrote:

Good morning

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AARON OLSEN

HERITAGE ASSISTANT
D +61 2 8233 9957
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E aolsen@urbis.com.au













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From: To: **Aaron Olsen**

Subject: FW: Expression of Interest Mamre Road - Aboriginal Cultural Heritage Assessment - Aboriginal Community

Consultation Stage 1

Date: Tuesday, 25 August 2020 11:13:08 AM

Attachments: image007.png

image008.png image009.png image010.png image011.png

ANDREW CRISP

SENIOR CONSULTANT

D +61 2 8233 7642 T+61 2 8233 9900 E acrisp@urbis.com.au

SHAPING CITIES AND COMMUNITIES











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From: Corroboree Aboringinal Corporation <corroboreecorp@bigpond.com>

Sent: Thursday, 30 July 2020 11:15 AM **To:** Andrew Crisp <acrisp@urbis.com.au>

Cc: Marilyn Carroll-Johnson <corroboreecorp@bigpond.com>

Subject: Re: Expression of Interest Mamre Road - Aboriginal Cultural Heritage Assessment -

Aboriginal Community Consultation Stage 1

Andrew Crisp Senior Consultant Urbis acrisp@urbis.com.au Level 8 123 Pitt Street

Dear Andrew

Re: Expression of interest GPT Mamre Road - Stage 1

Please register Corroboree Aboriginal Corporation. We have lived in the area and some members currently reside in the surrounding areas. We are registering in a full capacity. We are aboriginal people who are culturally aware. We have the necessary ability, awareness, experience, skills, insight and the knowledge to identify artefacts on field work. And as Aboriginal People we connect thru the land, thru our ancestors and our heritage. Therefore we are able participate on all levels. We have worked with many archaeologists across a broad landscape. We have consulted with your company on previous projects. We have all the relevant insurances and safety gear. We are all fit and adapt to a vast landscape.

Contact is preferred via email: **corroboreecorp@bigpond.com**. The contact number, email and contact person is also listed in the signature.

Please do not disclose any of our details to LALC nor publish our correspondence for LALC to peruse. Please only note our corporation details i.e. our name and only for registration purposes. As noted our details are not to be passed on/disclosed to LALC. We understand your need for confirmation of our corporations name on your lists for registered stakeholders, in that we have responded for inclusion, to participate on all levels. However, please do not display our actual correspondence. Just our name as registered stakeholders for your records and proponents. Thanks

Kind regards
Marilyn Carroll-Johnson
Director
Corroboree Aboriginal Corporation

Mob: 0415911159 Ph: 0288244324

E: corroboreecorp@bigpond.com

Address: PO Box 3340 ROUSE HILL NSW 2155

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AARON OLSEN

HERITAGE ASSISTANT <image001.gif>

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E aolsen@urbis.com.au

<image002.png>

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<P0022231_GPTMamreRd_Stage 1.3.pdf>

justinecoplin@optusnet.com.au From:

Aaron Olsen To:

Subject: reg of interest 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW

Date:

Tuesday, 25 August 2020 12:01:42 PM reg of interest 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW .pdf Attachments:



DARUG CUSTODIAN ABORIGINAL CORPORATION

PO BOX 81 WINDSOR 2756

PHONE: 0245775181 FAX: 0245775098 MOBILE: 0414962766 Justine Coplin EMAIL: justinecoplin@optusnet.com.au

Attention URBIS Date: 25082020

Subject: 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW

Dear Andrew

Our group is a non- profit organisation that has been active for over forty years in Western Sydney, we are a Darug community group with over three hundred members. The main aim in our constitution is the care of Darug sites, places, wildlife and to promote our culture and provide education on the Darug history.

The Kemps Creek area is an area that our group has a vast knowledge of, we have worked and lived in for many years, this area is significant to the Darug people due to the connection of sites and the continued occupation. Our group has been involved in all previous assessments and works in this area as a traditional owner Darug group for the past 40 plus years.

Therefore we would like to register our interest for full consultation and involvement in the above project area.

Please contact us with all further enquiries on the above contacts.

Regards

Justine Coplin

We acknowledge and pay respect to the Darug people, the traditional Aboriginal custodians of this land.

From: To: **Aaron Olsen**

Subject: FW: Dharug Ngurra Aboriginal Corporation - P0022231 - GPT Mamre Road

Date: Tuesday, 25 August 2020 11:12:33 AM

200806 DNAC P0022231 GPT Mamre Road.pdf Attachments:

image007.png image008.png image009.png image010.png image011.png

ANDREW CRISP

SENIOR CONSULTANT

D +61 2 8233 7642 T+61 2 8233 9900 E acrisp@urbis.com.au

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From: DNAC Archaeology <archaeology@dharugngurra.org.au>

Sent: Thursday, 6 August 2020 3:49 PM **To:** Andrew Crisp <acrisp@urbis.com.au>

Subject: Dharug Ngurra Aboriginal Corporation - P0022231 - GPT Mamre Road

Heilsan Andrew,

Please find Expression of Interest Attached.

Cheers

Dirk Schmitt Accountant to Dharug Ngurra Aboriginal Corporation Grantham Heritage Park 71 Seven Hills Road, South Seven Hills NSW 2147

PO Box 441 Blacktown NSW 2148

Archaeological Project - Expression of Interest

Dharug Research & Information Centre 71 Seven Hills Rd South, Seven Hills, NSW, 2147 Ph (02) 9622-4081



Dharug Ngurra Aboriginal Corporation (formerly Darug Tribal Aboriginal Corporation)

ICN: 2734
PO Box 441
Blacktown, NSW, 2148
Ph | 02 9622 4081
Email: darug_tribal@live.com.au

06/08/2020

Andrew Crisp Senior Consultant Urbis acrisp@urbis.com.au Level 8, 123 Pitt Street Sydney, NSW, 2000

Re: P0022231 – GPT Mamre Road – Aboriginal Cultural Heritage Assessment – Aboriginal Community Consultation Stage 1 – Invitation to Register

Dear Andrew,

On behalf of the Board of Dharug Ngurra Aboriginal Corporation, I would like to thank you for advisory of above-mentioned project and do hereby provide you with an Expression of Interest.

The Dharug Ngurra Aboriginal Corporation, on behalf the Board and its Members, do hereby request to be included in all activities regarding this project, including any future correspondence there from arising.

Correspondence arising should be addressed to Corina Marino and may be provided by post to the above PO Box address, or via e-mail to the above e-mail address.

On site consulting, and other services can be provided as required. The standard rate for such services is \$100 excluding GST per hour (\$110 per hour including GST).

The Corporation is a Not for Profit entity, and as such, all net income, following payment of wages to archaeological workers, derived from our participation in any project, goes toward supporting our Members, being the Traditional Owners of Dharug land, the protection and preservation of Dharug places and sites, the education of the wider community about the Dharug people, their history, heritage and culture, and the functioning of the Corporation and its' services.

Sincerely

Dirk Schmitt Accountant to Dharug Ngurra Aboriginal Corporation

Office Hours: By Appointment Only Page 1 of 1

From: <u>lilly carroll</u>
To: <u>Aaron Olsen</u>

Cc: Andrew Crisp; Balazs Hansel

Subject: Re: GPT Mamre Road - Aboriginal Cultural Heritage Assessment - Aboriginal Community Consultation Stage

1 - Invitation to Register

Date: Wednesday, 29 July 2020 11:12:03 AM

Attachments: image002.png

image006.png image004.png image010.png image008.png

Hi guys,

DNC would like to register an interest into GPT Mamre Rd The subject area project

Kind regards Paul Boyd & Lilly Carroll Directors DNC

Sent from Yahoo Mail for iPhone

On Wednesday, July 29, 2020, 10:59 am, Aaron Olsen <aolsen@urbis.com.au> wrote:

Good morning

Urbis has been commissioned by The GPT Group (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW (hereafter referred to as 'the subject area').

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The ACHA is to be carried out in accordance with relevant guidelines under the National Parks and Wildlife Act 1974 (NPW Act), including the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011). The assessment would detail any potential Aboriginal cultural heritage resources within the subject area and provide recommendations regarding management of those resources.

The Proponent can be contacted via:

Casey Brasher

Project Manager

The GPT Group

Casey.Brasher@gpt.com.au

Level 10 Melbourne Central Tower

360 Elizabeth Street

Melbourne VIC 3000

In accordance with the *Aboriginal cultural heritage consultation requirements* for proponents (DEECW 2010) (the Consultation Requirements) and Clause 80C of the NSW National Parks and Wildlife Regulation 2009, the Proponent will conduct a community consultation process with registered Aboriginal people to assist with the preparation of the ACHA to inform the EIS and comply with the anticipated SEARs requirements including:

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In accordance with Section 4.1.2 of the Consultation Requirements, Urbis proposes to compile a list of Aboriginal people and organisations who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places that may exist within the subject area.

Should you be aware of any Aboriginal persons and/or organisations that may hold an interest in the project, please provide their details at your earliest convenience and preferably by 26th August 2020 in writing to:

Andrew Crisp

Senior Consultant Urbis acrisp@urbis.com.au Level 8 123 Pitt Street Sydney, NSW, 2000.

Please be advised that, as per the Consultation Requirements, the Proponent is required to forward the names of Aboriginal persons and groups who register an interest (Registered Aboriginal Parties) to the Deerubbin Local Aboriginal Land Council and Aboriginal Cultural Heritage Regulation Branch of the Department of Premier and Cabinet (DPC) unless the person or group specifies that they do not want their details released.

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Please do not hesitate to contact us should you have any queries in relation to the provided information.

Our formal letter is attached.

Kind regards

AARON OLSEN

HERITAGE ASSISTANT
D +61 2 8233 9957
T +61 2 8233 9900
E aolsen@urbis.com.au













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From: <u>Gulaga</u>
To: <u>Aaron Olsen</u>

Subject: Re: GPT Mamre Road - Aboriginal Cultural Heritage Assessment - Aboriginal Community Consultation Stage

1 - Invitation to Register

Date: Thursday, 20 August 2020 8:28:31 PM

Attachments: <u>image002.png</u>

image004.png image006.png image008.png image010.png

Aboriginal Cultural Heritage person of intrest.docx

Hi Aaron.

Thank you for the email, Gulaga is most certainly interested in assisting you with this up and coming project. Please see my attached cover letter, hope to hear from you soon

Kind Regards Wendy Smith Cultural Heritage Officer Gulaga 0401 808 988

This email may contain privileged information. Privilege is not waived if it has been sent to you in error, or if you are not the intended recipient. Please immediately notify me and delete the email if you have received this in error.

On Wed, Jul 29, 2020 at 10:59 AM Aaron Olsen <a olsen@urbis.com.au> wrote:

Good morning

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The Proponent can be contacted via:

Casey Brasher

Project Manager

The GPT Group

Casey.Brasher@gpt.com.au

Level 10 Melbourne Central Tower

360 Elizabeth Street

Melbourne VIC 3000

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Andrew Crisp

Senior Consultant Urbis acrisp@urbis.com.au Level 8 123 Pitt Street Sydney, NSW, 2000.

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Please do not hesitate to contact us should you have any queries in relation to the provided information.

Our formal letter is attached.

Kind regards

AARON OLSEN

HERITAGE ASSISTANT

D +61 2 8233 9957 **T** +61 2 8233 9900 **E** <u>aolsen@urbis.com.au</u>

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Please see attached Expression of Interest Cultural Heritage

I have been instructed to register Gulaga Development PTY LTD as a registered stack holder and known Aboriginal party to prepare a cultural heritage assessment report for lot 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW

The cultural connection between the Hawkesbury River and the Snowy River are without a doubt the same people with the same culture, kinship, ancestry and connection to those lands conclusively.

Gulaga, Dharug and the Eora Lands and its peoples along with the remaining other 11 clans of the south coast is undoubtedly one peoples, the MURRIN PEOPLES.

I believe Gulaga Development PTY LTD has made the case that we do hold cultural and heritage knowledge over and inclusive of the Local Government Areas.

Gulaga Development objective is to consolidate together with MURRIN Clans Cultural and Heritage responsibilities.

Please contact me as soon as possible when you have made your decision to admit Gulaga Development to the Registry of Aboriginal Stakeholders for the Local Government areas.

Kind Regards,

Wendy Smith
Cultural Heritage Officer
Gulaga
0401 808 988

From: **Andrew Crisp** To: **Aaron Olsen**

Subject: FW: Registration of interest GPT Mamre Road - Stage 1

Date: Tuesday, 25 August 2020 11:13:20 AM

Attachments: image010.png

image008.png image006.png image004.png image002.png image007.png image008.png image009.png image010.png image011.png

ANDREW CRISP

SENIOR CONSULTANT

D +61 2 8233 7642 T+61 2 8233 9900 E acrisp@urbis.com.au

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From: Cherie Carroll Turrise <gunjeewong@yahoo.com.au>

Sent: Thursday, 30 July 2020 11:15 AM **To:** Andrew Crisp <acrisp@urbis.com.au>

Subject: Re: Registration of interest GPT Mamre Road - Stage 1

Gunjeewong Cultural Heritage Corporation

Heritage Preservation

1 Bellevue Place

Portland NSW 2847

Mob: 0438 428 805

Email: gunjeewong@yahoo.com.au

30 July 2020

Andrew Crisp Senior Consultant Urbis acrisp@urbis.com.au Level 8 123 Pitt Street Sydney, NSW, 2000

Dear Andrew

Re: Registration of interest GPT Mamre Road - Stage 1

Please register our corporation for full process on this project. We are aboriginal people. We have our history & stories passed down by our Elders. We have assisted in other salvage & consulting in with archaeologists over a vast number of years. We are experienced in the field of identifying artefacts, Including our learned history and knowledge passed down by our Elders. We appreciate the opportunity to be part of protecting and preserving our heritage. We are very proud of our heritage passed to us by our Elders and our Ancestors. We are therefore pleased with being a part of this research and provide our experience in cultural heritage input.

The potential to contain evidence of Aboriginal of actual occupation on the specific project area and provide cultural links to our past ancestors is of great value and significance. Our organisation has a current public liability insurance policy and OHS compliant and all members hold white cards and all the required safety gear.

All our members are Aboriginal and very experienced in the identification of Aboriginal artefacts and we have consulted with numerous Archeologists in surveys including excavation/fieldwork. We are very passionate about land and conservation matters to which some of members are currently studying cultural heritage. We hold strong links to our our ancestors, our culture and our heritage. Please note we do not want our details forwarded to LALC, please do not release our correspondence

Please update Email:gunjeewong@yahoo.com.au

and phone number Mob: 0438 428 805. Please forward a copy of project to my postal address: 1 Bellevue Place, PORTLAND NSW 2847 and to this email. Please remove any other phone numbers and emails as per ORIC website & OEH. My details have also been updated with Barry Gunther. .

Sincerely Cherie (Carroll) Turrise Aboriginal Heritage Custodian

Email: gunjeewong@yahoo.com.au

1 Bellevue Place PORTLAND NSW 2847 Mob: 0438 428 805

Mob: 0438 428 805

nor any details.

Email: gunjeewong@yahoo.com.au

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The Proponent can be contacted via:

Casey Brasher

Project Manager

The GPT Group

Casey.Brasher@gpt.com.au

Level 10 Melbourne Central Tower

360 Elizabeth Street

Melbourne VIC 3000

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Our formal letter is attached.

Kind regards

AARON OLSEN

HERITAGE ASSISTANT **D** +61 2 8233 9957 T+61 2 8233 9900 E aolsen@urbis.com.au













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From: philip khan

To: <u>Aaron Olsen; Andrew Crisp</u>

Subject: RE: GPT Mamre Road - Aboriginal Cultural Heritage Assessment - Aboriginal Community Consultation Stage

1 - Invitation to Register

Date: Thursday, 30 July 2020 4:40:41 PM

Attachments: image002.png

image004.png image006.png image008.png image010.png

Public Liability Kamilaroi 2020 to 2021 20million cover.pdf

Workers Comp Insurance for Kamilaroi Yankuntjatjara Working Group Pty Ltd.pdf

Hi Aaron & Andrew,

Thank you for informing us that **Urbis** will be involved in an Aboriginal Cultural Heritage Assessment regarding **GPT Mamre Rd** &, that you are inviting Aboriginal organisations to register, if they wish too be involved in the community consultation process.

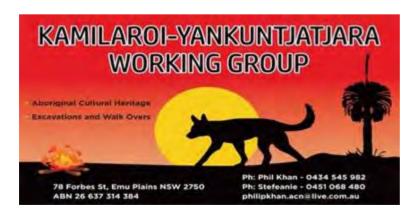
As a senior Aboriginal person for the past 40yrs, I actively participate in the protection of the Aboriginal Cultural Heritage throughout the Sydney Basin, & particularly throughout Western Sydney, on behalf of Kamilaroi Yankuntjatjara Working Group I wish to provide to you my organisation's registration of interest.

I wish to be involved & participate in all levels of consultation/project involvement. I wish to attend all meetings, participate in available field work & receive a copy of the report.

I have attached a copy of Kamilaroi Yankuntjatjara Working group's Public Liability Insurance & Workers Compensation certificate.

Should you wish me to provide further information, please do not hesitate to contact me on 0434545982 or Stefeanie on 0451068480.

Kind Regards Phil Khan



Sent from Mail for Windows 10

From: Aaron Olsen

Sent: Wednesday, 29 July 2020 10:59 AM

Cc: Andrew Crisp; Balazs Hansel

Subject: GPT Mamre Road - Aboriginal Cultural Heritage Assessment - Aboriginal Community

Consultation Stage 1 - Invitation to Register

Good morning

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Project Manager

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AARON OLSEN

HERITAGE ASSISTANT

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From: **Andrew Crisp** To: **Aaron Olsen**

Subject: FW: Mamre Road Precinct

Date: Tuesday, 25 August 2020 11:11:44 AM

Attachments: image007.png

image008.png image009.png image010.png image011.png

ANDREW CRISP

SENIOR CONSULTANT

D +61 2 8233 7642 T+61 2 8233 9900 E acrisp@urbis.com.au

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From: Shaun Carroll < Merrigarn@hotmail.com>

Sent: Thursday, 13 August 2020 6:30 PM To: Andrew Crisp <acrisp@urbis.com.au>

Subject: Mamre Road Precinct

Dear Andrew, We would like to register an interest in the above project. Kind regards Shaun Carroll

Sent from Mail for Windows 10

From: **Andrew Crisp** To: **Aaron Olsen**

Subject: FW: Mamre Road registration

Date: Tuesday, 25 August 2020 11:11:34 AM

Attachments: image007.png

image008.png image009.png image010.png image011.png

ANDREW CRISP

SENIOR CONSULTANT

D +61 2 8233 7642 T+61 2 8233 9900 E acrisp@urbis.com.au

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From: jesse johnson <muragadi@yahoo.com.au>

Sent: Thursday, 13 August 2020 6:32 PM To: Andrew Crisp <acrisp@urbis.com.au>

Subject: Mamre Road registration

Hi Andrew.

please register our family and members for the above project, our family have lived in the area all there lives, my mother actually stayed in Mamre Road as a kid with her aunty.

Kind regards Jesse Johnson From: To: **Aaron Olsen**

Subject: FW: GPT Mamre Road - Aboriginal Cultural Heritage Assessment - Aboriginal Community Consultation Stage

1 - Invitation to Register

Tuesday, 25 August 2020 11:11:48 AM Date:

Attachments: image010.png

image008.png image006.png image004.png image002.png image007.png image008 png image009.png image010.png image011.png

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From: Darleen Johnson <murrabidgeemullangari@yahoo.com.au>

Sent: Thursday, 13 August 2020 6:27 PM **To:** Andrew Crisp <acrisp@urbis.com.au>

Subject: Re: GPT Mamre Road - Aboriginal Cultural Heritage Assessment - Aboriginal Community

Consultation Stage 1 - Invitation to Register

Hi Andrew

Please register our organisation for the above project, we have done many projects in the area and surrounding areas, we have been doing aboriginal cultural heritage projects for over 26 years. Kind regards

Darleen Johnson

On Wednesday, 29 July 2020, 10:59:38 am AEST, Aaron Olsen aolsen@urbis.com.au> wrote:

Good morning

Urbis has been commissioned by The GPT Group (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 and 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW (hereafter referred to as 'the subject area').

Urbis is preparing an ACHA to accompany the State Significant Development Application (SSDA) for a warehousing and distribution centre within the subject area. The first stage of works, to be completed by 2021, will comprise site preparation works, including bulk earthworks, services and associated landscaping, as well as the construction of two warehouses. The second stage, to be completed by 2023, will include the construction of a further three warehouses.

The ACHA is to be carried out in accordance with relevant guidelines under the National Parks and Wildlife Act 1974 (NPW Act), including the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011). The assessment would detail any potential Aboriginal cultural heritage resources within the subject area and provide recommendations regarding management of those resources.

The Proponent can be contacted via:

Casey Brasher

Project Manager

The GPT Group

Casey.Brasher@gpt.com.au

Level 10 Melbourne Central Tower

360 Elizabeth Street

Melbourne VIC 3000

In accordance with the *Aboriginal cultural heritage consultation requirements for proponents (DEECW 2010)* (the Consultation Requirements) and Clause 80C of the NSW National Parks and Wildlife Regulation 2009, the Proponent will conduct a community consultation process with registered Aboriginal people to assist with the preparation of the ACHA to inform the EIS and comply with the anticipated SEARs requirements including:

■ Identifying and describing the Aboriginal cultural heritage values that exist across the subject area in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011) and *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW OEH* (2010), and documenting these in an Aboriginal Cultural Heritage Assessment Report (ACHAR) which may include the need for surface survey and test excavation;

- Undertaking consultation with Aboriginal people and document in accordance with *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW):
- The preparation of the ACHAR to support the SSDA, demonstrating attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts; and
- Recording of any Aboriginal objects in line with the requirements of the Aboriginal Heritage Information Management System (AHIMS) that may be identified within the subject area.

In accordance with Section 4.1.2 of the Consultation Requirements, Urbis proposes to compile a list of Aboriginal people and organisations who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places that may exist within the subject area.

Should you be aware of any Aboriginal persons and/or organisations that may hold an interest in the project, please provide their details at your earliest convenience and preferably by **26th August 2020** in writing to:

Andrew Crisp

Senior Consultant Urbis acrisp@urbis.com.au Level 8 123 Pitt Street Sydney, NSW, 2000.

Please be advised that, as per the Consultation Requirements, the Proponent is required to forward the names of Aboriginal persons and groups who register an interest (Registered Aboriginal Parties) to the Deerubbin Local Aboriginal Land Council and Aboriginal Cultural Heritage Regulation Branch of the Department of Premier and Cabinet (DPC) unless the person or group specifies that they do not want their details released.

Please be advised that in accordance to Section 3.4 of the Consultation Requirements, inclusion in the consultation process does not automatically result in paid site assessment. The decision on who is engaged for delivering particular services is decided by the proponent and will be based on a range of considerations including skills, relevant experience, and providing necessary certificates of currency.

Please do not hesitate to contact us should you have any queries in relation to the provided information.

Our formal letter is attached.

Kind regards

E aolsen@urbis.com.au

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Subject: FW: GPT Mamre Road- Aboriginal Cultural Heritage Assessment- Aboriginal Community Consultation Stage 1

Tuesday, 25 August 2020 11:12:44 AM Date:

Attachments: image007.png

image008.png image009.png image010.png image011.png

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From: Phillip Boney <Waarlan12@outlook.com>

Sent: Sunday, 2 August 2020 9:15 PM **To:** Andrew Crisp <acrisp@urbis.com.au>

Subject: GPT Mamre Road- Aboriginal Cultural Heritage Assessment- Aboriginal Community

Consultation Stage 1

Hi Andrew,

Phil Boney here. I would like to register my interest in this project.

Respectfully yours, Sir Andrew Crisp

Phil Boney Wailwan Aboriginal Group

From: Arika Jalomaki Aaron Olsen To: Re: GPT Mamre Road - Aboriginal Cultural Heritage Assessment - Aboriginal Community Consultation Stage Subject: 1 - Invitation to Register Thursday, 27 August 2020 1:01:37 PM Date: Attachments: image006.png image004.png image002.png image008.png image010.png Dear Aaron, Yulay Cultural service's would like to register our interest in the above project. Kind regards, Arika Jalomaki On Wed, 29 Jul 2020 at 10:59 am, Aaron Olsen aolsen@urbis.com.au wrote: Good morning Urbis has been commissioned by The GPT Group (the Proponent) to conduct an

Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 and 784-786 Mamre

Road, Kemps Creek, Lots 59 & 60 DP 259135, NSW (hereafter

referred to as 'the subject area').

From: **Andrew Crisp** To: **Aaron Olsen**

Subject: FW: Aboriginal Community Consultation - GPT Mamre Road ACHA

Date: Tuesday, 25 August 2020 11:11:58 AM

Attachments: image007.png

image008.png image009.png image010.png image011.png

ANDREW CRISP

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From: Bo Field <yurrandaali_cs@hotmail.com>

Sent: Tuesday, 11 August 2020 9:03 PM **To:** Andrew Crisp <acrisp@urbis.com.au>

Subject: Aboriginal Community Consultation - GPT Mamre Road ACHA

Dear Andrew,

Yurrandaali would like to be consulted on this project. Please see my details below.

Company: Yurrandaali Pty Ltd

Contact: Bo Field

Address: 10B Elphin Street, Tahmoor NSW

Phone: 0403 048 263

If you need any more info please contact me on the details provided.

Thanks Bo Field

STAGE 1.6 – DPIE & LALC NOTICES



ANGEL PLACE LEVEL 8, 123 PITT STREET SYDNEY NSW 2000

URBIS COM AU Urbis Pty Ltd ABN 50 105 256 228

11 September 2020

Heritage NSW
Department of Premier and Cabinet
Locked Bag 5020
Parramatta NSW 2124
heritagemailbox@environment.nsw.gov.au

To whom it may concern,

STAGE 1.6 - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – GPT MAMRE ROAD, KEMPS CREEK – LIST OF REGISTERED ABORIGINAL PARTIES AND NOTIFICATION LETTER

In accordance with Section 4.1.6 of the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW, 2010) please find below the compiled list of Registered Aboriginal Parties (RAPs) and notification letter under Section 4.1.3 for the abovementioned project.

Table 1 - List of Registered Aboriginal Parties

Name	Contact	Updated
Deerubbin Local Aboriginal Land Council	Kevin Cavanagh	N
A1 Indigenous Services	Carolyn Hickey	N
Amanda Hickey Cultural Services	Amanda DeZwart	N
Aragung Aboriginal Cultural Heritage Site Assessments	Jamie Eastwood	N
Barraby Cultural Services	Lee Field	N
Barking Owl Aboriginal Corporation	Jody Kulakowski	N
Butucarbin Aboriginal Corporation	Jennifer Beale	N
Clive Freeman	Clive Freeman	N
Corroboree Aboriginal Corporation (CAC)	Marilyn Carroll-Johnson	N
Darug Custodian Aboriginal Corporation (DCAC)	Justine Coplin	N



Dharug Ngurra Aboriginal Corporation (DNAC)	Dirk Schmitt	N
Didge Ngunawal Clan (DNC)	Lilly Carroll / Paul Boyd	N
Gulaga	Wendy Smith	N
Gunjeewong Cultural Heritage Aboriginal Corporation (GCHAC)	Cherie Carroll Turrise	N
Kamilaroi Yankuntjatjara Working Group (KYWG)	Phil Khan	N
Merrigarn	Shaun Carroll	N
Muragadi Heritage Indigenous Corporation	Jesse Johnson	N
Murra Bidgee Mullangari Aboriginal Corporation	Darleen Johnson / Ryan Johnson	N
Wailwan Aboriginal Group	Philip Boney	N
Yulay Cultural Services	Arika Jalomaki	N
Yurrandaali Pty Ltd	Bo Field	N

Please do not hesitate to contact us should you have any queries in relation to the provided information.

Yours sincerely,

Andrew Crisp Senior Consultant

+61 2 8233 7642 acrisp@urbis.com.au



ANGEL PLACE LEVEL 8, 123 PITT STREET SYDNEY NSW 2000

URBIS COM AU Urbis Pty Ltd ABN 50 105 256 228

11 September 2020

Kevin Cavanagh
Deerubbin Local Aboriginal Land Council
PO Box 40
Penrith NSW 2751
Reception@deerubbin.org.au

Dear Mr. Cavanagh,

STAGE 1.6 - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – GPT MAMRE ROAD, KEMPS CREEK – LIST OF REGISTERED ABORIGINAL PARTIES AND NOTIFICATION LETTER

In accordance with Section 4.1.6 of the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW, 2010) please find below the compiled list of Registered Aboriginal Parties (RAPs) and notification letter under Section 4.1.3 for the abovementioned project.

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Barraby Cultural Services	Lee Field	N
Barking Owl Aboriginal Corporation	Jody Kulakowski	N
Butucarbin Aboriginal Corporation	Jennifer Beale	N
Clive Freeman	Clive Freeman	N
Corroboree Aboriginal Corporation (CAC)	Marilyn Carroll-Johnson	N
Darug Custodian Aboriginal Corporation (DCAC)	Justine Coplin	N



Dharug Ngurra Aboriginal Corporation (DNAC)	Dirk Schmitt	N
Didge Ngunawal Clan (DNC)	Lilly Carroll / Paul Boyd	N
Gulaga	Wendy Smith	N
Gunjeewong Cultural Heritage Aboriginal Corporation (GCHAC)	Cherie Carroll Turrise	N
Kamilaroi Yankuntjatjara Working Group (KYWG)	Phil Khan	N
Merrigarn	Shaun Carroll	N
Muragadi Heritage Indigenous Corporation	Jesse Johnson	N
Murra Bidgee Mullangari Aboriginal Corporation	Darleen Johnson / Ryan Johnson	N
Wailwan Aboriginal Group	Philip Boney	N
Yulay Cultural Services	Arika Jalomaki	N
Yurrandaali Pty Ltd	Bo Field	N

Please do not hesitate to contact us should you have any queries in relation to the provided information.

Yours sincerely,

Andrew Crisp Senior Consultant +61 2 8233 7642 acrisp@urbis.com.au

Charwellen

STAGES 2 & 3 - PROJECT INFO & METHOD

From: **Andrew Crisp**

To: **OEH HD Heritage Mailbox** Balazs Hansel; Aaron Olsen Cc:

Subject: P0022231 - ACHA Stage 1.6 - List of RAPs - 754-770 & 784-786 Mamre Road, Kemps Creek

Date: Friday, 11 September 2020 1:59:50 PM

P0022231 DPC Stage1.6 GPTMamreRd F01.pdf Attachments:

image002.png image003.png image004.png image005.png image006.png

Good afternoon,

In accordance with Section 4.1.6 of the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW, 2010) please find below the compiled list of Registered Aboriginal Parties (RAPs) and notification letter under Section 4.1.3 for the proposed industrial development of 754-770 & 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135.

Kind regards,

ANDREW CRISP

SENIOR CONSULTANT

D +61 2 8233 7642 T+61 2 8233 9900

E acrisp@urbis.com.au













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ANGEL PLACE LEVEL 8, 123 PITT STREET SYDNEY NSW 2000

URBIS COM AU Urbis Pty Ltd ABN 50 105 256 228

11 September 2020

To whom it may concern,

RE: ABORIGINAL CULTURAL HERITAGE ASSESSMENT 754-779 & 784-786 MAMRE ROAD, KEMPS CREEK - ABORIGINAL COMMUNITY CONSULTATION STAGE 2 PRESENTATION OF INFORMATION AND STAGE 3 GATHERING INFORMATION ABOUT CULTURAL SIGNIFICANCE

Thank you for registering your interest in the Aboriginal Cultural Heritage Assessment (ACHA) for the proposed redevelopment of 754-770 & 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135 (hereafter referred to as 'the subject area'). In accordance with Section 4.2 and 4.3 of the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW, 2010) (hereafter referred as the Consultation Requirements), please find this document as a summary of information on the proposed development and the protocol for providing cultural heritage information during the ACHA. Please note that more detailed information will be provided in due course and as part of the developing ACHA.

1 LOCATION OF DEVELOPMENT

The subject area is within the City of Penrith Local Government Area (LGA). The subject area covers approximately 330,000 m² and is bounded by Mamre Road and Lot 61 DP 259135 to the west, Lot 1 DP 104958 to the north, Lots 56-58 DP 259135 to the south and Lots 34-37 DP 258949 and Lot 40 DP 708347 to the east. The immediate surrounds comprise predominantly semi-rural properties.

2 DESCRIPTION OF THE DEVELOPMENT

The proposed development includes site preparation works, construction and use of five (5) warehouse and distribution buildings, retaining walls, stormwater and associated works, internal road network, associated carparking, signage and landscaping.

The development is proposed to comprise a first and second stage of works The first stage is to be completed by 2021 and will comprise site preparation works, including bulk earthworks, services and associated landscaping, as well as the construction of two warehouses. The second stage of works, to be completed by 2023, will include the construction of a further three warehouses.



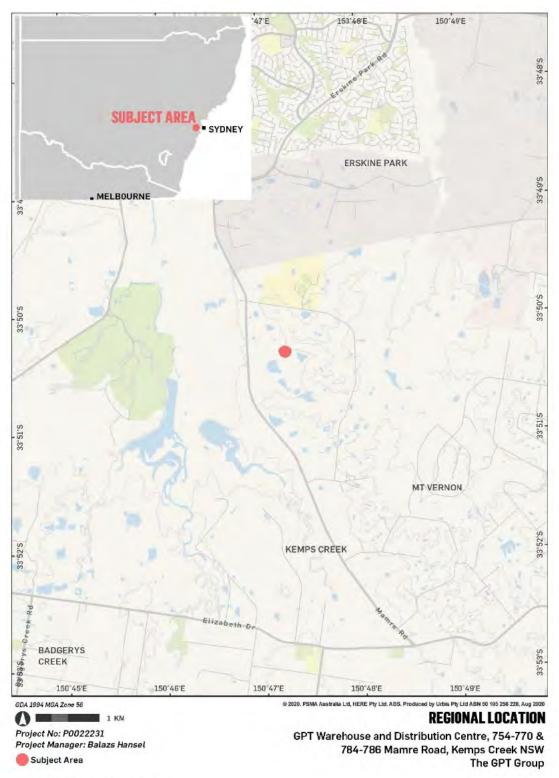


Figure 1 - Regional location





Figure 2 - Location of the subject area



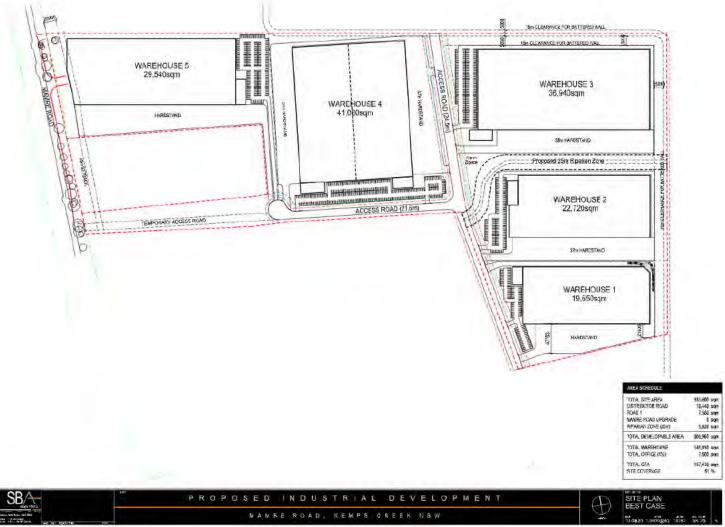


Figure 3 – Proposed Development Source: GPT Group



3 ARCHAEOLOGICAL BACKGROUND INFORMATION

This section comprises the summary of the archaeological background research completed to date for Aboriginal cultural heritage resources including the search of the Aboriginal Heritage Information Management System (AHIMS) and additional archaeological background information.

3.1 ABORIGINAL HERITAGE INFORMATION MANAGEMENT SYSTEM (AHIMS)

The AHIMS database comprises previously registered Aboriginal archaeological objects and cultural heritage places in NSW and it is managed by the Department of Planning, Industry and Environment (DPIE) under Section 90Q of the *National Parks and Wildlife Act 1974* (NPW Act).

The Extensive search of the AHIMS was carried out on the 2nd July 2020 (Client Service ID: 517484) for an area of approximately 4km².

Altogether 79 Aboriginal objects and no Aboriginal places were identified within the Extensive AHIMS search area identifies the spatial location of sites across the search area.

Aboriginal objects are the official terminology in AHIMS for Aboriginal archaeological sites. From this point in the assessment forward the terms of 'Aboriginal sites', 'AHIMS sites' or 'sites' will be used to describe the nature and spatial distribution of archaeological resources in relation to the subject area.

There are four registered Aboriginal sites (AHIMS ID# 45-5-3029, 45-5-3031, 45-5-3034 and 45-5-3035) within the subject area, all of which are listed as 'valid' in the AHIMS. There are also four registered Aboriginal sites (AHIMS ID# 45-5-3030, 45-5-3036, 45-5-4102 and 45-5-5186) in close proximity to the subject area, all of which are listed as 'valid' in the AHIMS. These sites are discussed in detail below.

AHIMS ID# 45-5-3029, 3030, 3031, 3034, 3035 & 3036

AHIMS ID# 45-5-3029 (EPTA4), 45-5-3030 (EPTA5) and 45-5-3031 (EPTA6), 45-5-3034 (EP-I 1), 45-5-3035 (EP-I 2) or 45-5-3036 (EP-I 3) were all recorded by Navin Officer Heritage Consultants Pty Ltd. According to the AHIMS report and associated GPS coordinates, they are located within the subject area or within Lot 1 DP 104958 immediately to north of the subject area.

The site cards for AHIMS ID# 45-5-3029, 45-5-3030 and 45-5-3031 indicate that they are artefact scatters. No site cards or Aboriginal heritage reports are available through the AHIMS website for AHIMS ID#45-5-3034, 45-5-3035 or 45-5-3036. Communication via email with David Gordon, Senior Heritage Information Officer (Aboriginal) with the NSW Department of Premier and Cabinet, has established the following regarding the missing AHIMS site data:

"The electronic record for these cards show they were completed in 2005. Back at that time it was common that sites were recorded with little or no information as to create site numbers in AHIMS for the production of Permits or the destruction of those sites. This is the case in this request." (David Gordon pers. comms. 2019).

Each of the six sites were subject to a Section 90 'Consent to carry out the destruction of an Aboriginal object/place' (Consent #2188). Consent #2188 was issued to CSR Limited for the then proposed industrial development of 'CSR Lands, Erskine Park' (Figure 4) dated 23rd August 2005. Consent #2188 indicates that AHIMS ID#45-5-3034 (EP-I 1), 45-5-3035 (EP-I 2) or 45-5-3036 (EP-I 3) are isolated finds.

The co-ordinates of the six sites indicated in the AHIMS report match the co-ordinates recorded in Consent #2188. However, a map of the CSR land in Erskine Park for which Consent #2188 was



requested indicate that it is approximately 1km north of the present subject area, placing the six sites well-outside the subject area. A report produced by Dominic Steel Consulting Archaeology (DSCA 2010, p.48-49) notes the locational discrepancy and concludes that the co-ordinates of the six sites are registered incorrectly with AHIMS:

"Following a subsequent review of all DECCW AHIMS information that was gathered in May and June 2010, it became apparent that all of these sites noted above had been recorded by Navin Officer Heritage Consultants during ongoing (and various) works undertaken during 2005.

This consultancy firm was subsequently contacted by DSCA in early June 2010 to best determine the nature of these previous Aboriginal site recordings and their location.

This revealed that the site coordinates were in error, and in fact related to sites previously recorded during archaeological excavation works undertaken to the north of the Sydney Water pipeline and were therefore located a kilometre or so north of the LOGOS Estate site."

Based on the information available, it is clear that the coordinates of AHIMS ID# 45-5-3029 (EPTA4), 45-5-3030 (EPTA5), 45-5-3031 (EPTA6), 45-5-3034 (EP-I 1), 45-5-3035 (EP-I 2) and 45-5-3036 (EP-I 3) are incorrectly registered. These six sites fall within the CSR lands indicated in Figure 4, approximately 1km north of the present subject area. Accordingly, there are no correctly recorded Aboriginal sites within the subject area (refer to Figure 8 for corrected site locations).

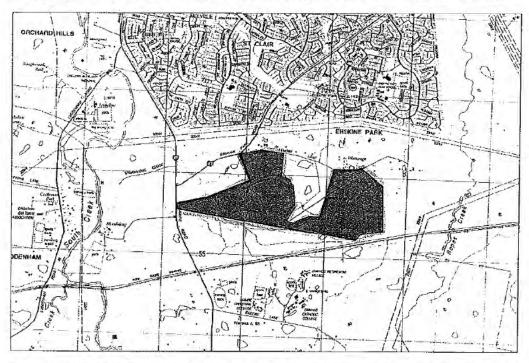


Figure 4 – Erskine Park CSR lands for which Section 90 Consent to Destroy #2188 was requested (dark polygon). Source: Consent #2188



AHIMS ID# 45-5-4102

AHIMS ID# 45-5-4102 is identified as an isolated find and has been given the site name 'Kemps Creek IF1'. The AHIMS report indicates that this site is 'valid'. The site comprises a single mottled grey quartzite flaked piece (16mm x 8mm x 4mm) on the bank of a small agricultural dam. AHIMS ID# 45-5-4102 is located outside the subject area, in the south-eastern corner of 708 Mamre Road, Lot 1 DP 104958.

AHIMS ID# 45-5-5186

AHIMS ID# 45-5-5186 is identified as an artefact scatter with an associated potential archaeological deposit (PAD) and has been given the site name 'Mamre Road Artefact Scatter 1901 (MAM AS1901)'. The AHIMS report indicates that this site is 'valid'. The artefact scatter comprises a ground edge axe, nine silcrete flakes, a mudstone flake, a quartzite flake and a chert flake. The artefacts were eroding out of a gentle slope on the edge of a dam. The site card notes that there is potential for further artefacts to be uncovered in the surrounds and subsurface.

The artefact scatter is located outside the subject area to the south west, at the rear of 788-804 Mamre Road, Lot 58 DP 259135. The PAD encompasses two separate areas within Lots 56, 57 and 58 DP 259135, both of which are abutting the boundary of the subject area (Figure 5). The PAD is located on the mid- to lower-slope of the raised area next to the first order drainage line of South Creek.

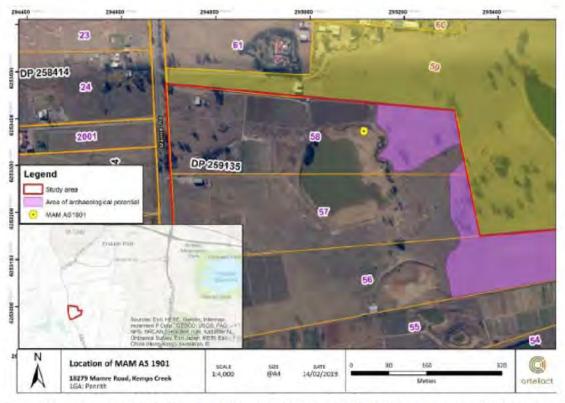


Figure 5 – Location of AHIMS ID# 45-5-5186 artefact scatter (MAM AS1901) and associated PAD. The current subject area is indicated by the yellow shading.

Source: AHIMS ID# 45-5-5186 site card



Table 1 below identifies the breakdown of site types within the broader search area. Identified sites are all open context sites, reflecting a lack of rock overhangs in the area. The most common site types identified in the search area are artefact scatters, which comprised 65% (n=51) of search results, and isolated finds, which comprised 29% (n=23) of search results. The densities of the artefact scatters vary from small scatters of as a few as two objects up to hundreds of objects. Spatially, objects within the search area tend to be located primarily within proximity of South Creek and its tributaries.

These results reinforce the generic predictive model for the Cumberland Plain, which suggests that Aboriginal objects are anticipated to occur in higher frequency and density within 200m of high order streams. Aboriginal objects are also anticipated within 200m in context of lower order streams, but these are generally low density, background scatters and generally reflective of less prolonged, transitional use of the landscape.

Table 1 – AHIMS search results (Client Service ID: 517484)

Site Type	Context	Number	Percentage
Artefact Scatter	Open	51	65%
Isolated Find	Open	23	29%
Not Recorded	Open	3	4%
Artefact Scatter with PAD	Open	1	1%
Artefact Scatter with Scarred Tree	Open	1	1%
Total	N/A	79	100

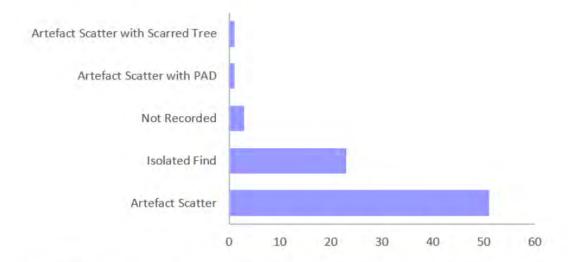


Figure 6 - Graph showing the results of AHIMS Search for Client Service ID: 517484



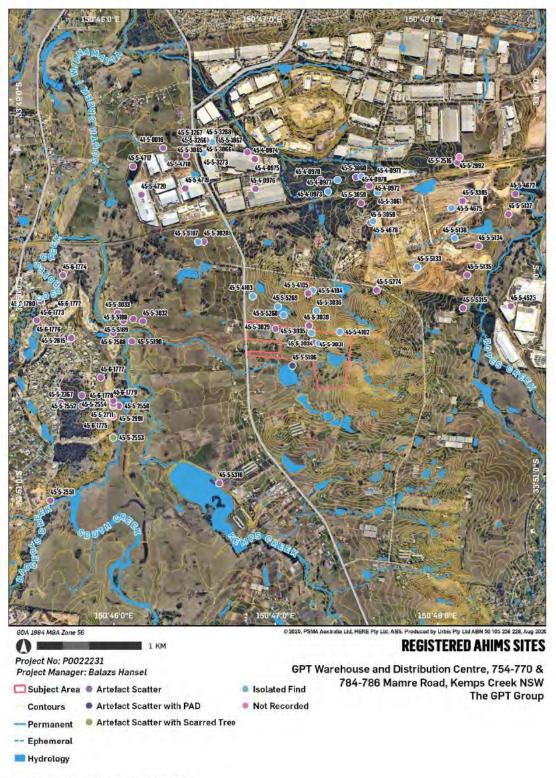


Figure 7 - Registered AHIMS Sites



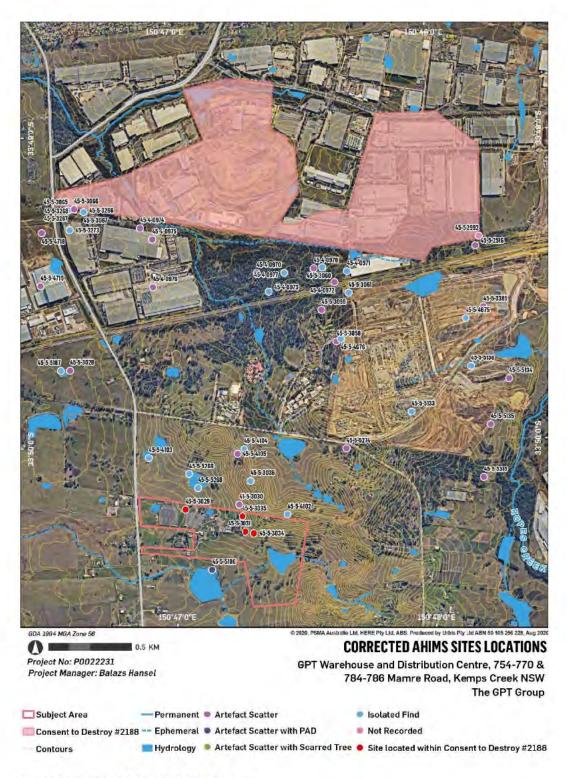


Figure 8 - Corrected AHIMS Sites Locations



4 CURRENT ENVIRONMENT

4.1 TOPOGRPAHY

The landform within the eastern portion of the subject area comprises a south-westerly open depression. A tributary of South Creek runs through this depression and, by post-settlement damming of that watercourse, has partly modified the landform. The depression is flanked by southerly and westerly slopes, which have a maximal upper slope and waning lower slope. The western portion of the subject area comprises a slight westerly crest.

4.2 GEOLOGY AND SOILS

The subject area is located within the Sydney Basin, upon the Cumberland Plain. The Cumberland Plain lies on Triassic shales and overlain by Hawkesbury sandstone. The region consists of mostly low rolling hills and wide valleys.

There are two soil landscapes identified within the subject area (Figure 7), the Luddenham soil landscape and the Blacktown soil landscape.

The Luddenham Soil Landscape is present in the eastern portion of the subject area. This soil landscape is described as residing upon Wianamatta Group Ashfield Shale and Bringelly Shale formations. The Ashfield Shale consists of laminite and dark grey shale. Bringelly Shale consists of shale, calcareous claystone, and laminite. Between these two shale members is the Minchinbury Sandstone consisting of fine to medium-grained lithic quartz sandstone. Soils are described as shallow (<100m) dark podzolic soils (Dd3.51) or massive earthy clays (Uf6.71) on crests; moderately deep (70-150cm) red podzolic soils (Dr2.11, Dr2.41, Dr3.11) on upper slopes; moderately deep (<150cm) yellow podzolic soils (Dy4.22) and prairie soils (Gn3.26) on lower slopes and drainage lines. Dominant soil materials include Friable dark brown loam, Hard setting brown clay loam, whole coloured strongly pedal clay, mottled grey plastic clay and apedal brown sandy clay.

The Blacktown Soil Landscape is present in the western portion of the subject area. This is described as residing upon gently undulating rises on Wianamatta Group shales and Hawkesbury shale. Soils are described as shallow to moderately deep (<100 cm) Red and Brown Podzolic Soils (Dr3.21, Dr3.11, Db2.11) on crests, upper slopes and well-drained areas; deep (150-300 cm) Yellow Podzolic Soils and Soloths (Dy2.11, Dy3.11) on lower slopes and in areas of poor drainage. Dominant soil materials include friable brownish-black loam, hard setting brown clay loam, strongly pedal mottled brown light clay, and light grey plastic mottled clays.

The depth of natural soils is relevant to the potential for archaeological materials to be present, especially in areas where disturbance is high. In general, as disturbance increases, archaeological potential decreases. Historic land use activities are discussed in Section 2.6 of this report, however in general disturbance is determined to be low across the subject area with the land primarily used for agricultural processes. There is high potential that the soil profile remains intact.

4.3 HYDROLOGY

The subject area contains one tributary of South Creek, which runs through the west of the subject area. The subject area is also approximately 200m north of another tributary of South Creek, which itself runs approximately 1.2km to the west. The subject area straddles the two catchments of South Creek (approximately 1.5km to the west) and Ropes Creek (approximately 1.5km to the east).



The hydrology of the subject area and surrounds is important given the correlation between Aboriginal archaeological sites and high order waterways. Predictive models for the Cumberland Plain suggest that Aboriginal archaeological sites are more likely to be present within 200-250m of a reliable watercourse (Smith, 1989; JMCHM, 1992). There are a number of archaeological sites registered along both Vineyard and the Ponds Creeks, as demonstrated in Figure 6.

4.4 VEGETATION

Vegetation within the Luddenham Soil Landscape is typified by extensively cleared open forest (dry sclerophyll forest). Dominant tree species include *Eucalyptus maculate* (spotted gum) and *E. moluccana* (grey box). Lesser occurrences of *E. fibrosa* (broad-leaved ironbark), *E. crebra* (narrow-leaved ironbark), *E. tereticornis* (forest red gum) and *E. longifolia* (woollybutt) occur. Understorey shrub species include *Bursaria spinosa* (blackthorn), *Breynia oblongifolia* (coffee bush), *Allocasuarina torulosa* (forest oak), *Acacia implexa* (hickory) and *Clerodendrum tomentosum* (hairy clerodendrum).

Vegetation within the Blacktown Soil Landscape is typified by almost completely cleared open-forest and open-woodland (dry sclerophyll forest). The original woodland and open-forest were dominated by *Eucalyptus tereticornis* (forest red gum), *E. crebra* (narrow-leaved ironbark), *E. moluccana* (grey box) and *E. maculata* (spotted gum)



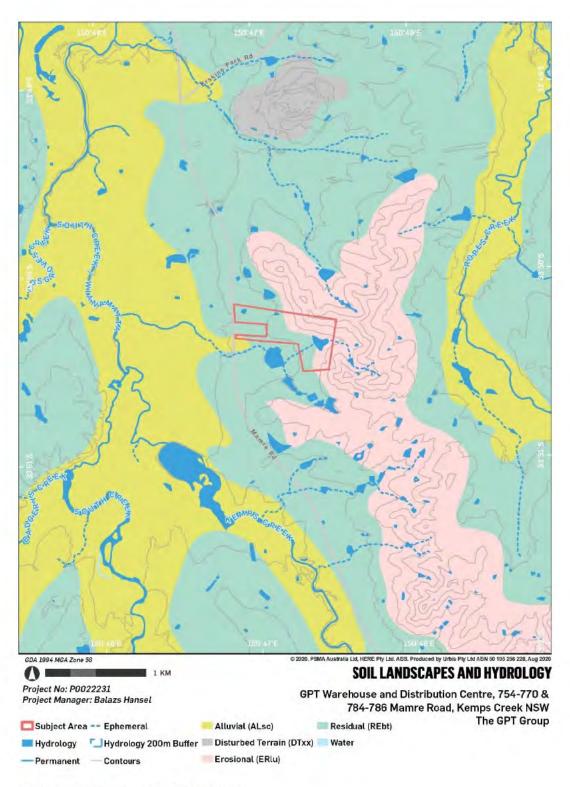


Figure 9 - Soil Landscapes and Hydrology



5 REGIONAL ARCHAEOLOGICAL CONTEXT

Previous archaeological assessments across the Cumberland Plain and of significance to this assessment, the Sydney Central Business District, provide important data on Aboriginal archaeological site distribution and typology. An understanding of the archaeological landscape within the subject area can be developed from this analysis.

Aboriginal people have lived in the Sydney area for more than 20,000 years. The oldest archaeologically accepted date for a site in the greater Sydney region is 17,800 years before present (BP), which was recorded in a rock shelter at Shaw's Creek (Nanson et al 1987), near Castlereagh. Evidence of Aboriginal occupation has been found dated to 50-60,000 years before present (BP) at Lake Mungo in western NSW, so given the various disperse models of human occupation, it is likely that Aboriginal people have lived in the Sydney region for even longer than indicated by the oldest recorded dates we have at present. The archaeological material record provides evidence of this long occupation, but also provides evidence of a dynamic culture that has changed through time.

The existing archaeological record is limited to certain materials and objects that were able to withstand degradation and decay. As a result, the most common type of Aboriginal objects remaining in the archaeological record are stone artefacts. Archaeological analyses of these artefacts in their contexts have provided the basis for the interpretation of change in material culture over time. Technologies used for making tools changed, along with preference of raw material. Different types of tools appeared at certain times, for example ground stone hatchets are first observed in the archaeological record around 4,000 BP in the Sydney region (Attenbrow 2010:102). It is argued that these changes in material culture were an indication of changes in social organisation and behaviour.

The Eastern Regional Sequence (ERS) was first developed by McCarthy in 1948 to explain the typological differences he was seeing in stone tool technology in different stratigraphic levels during excavations such as Lapstone Creek near the foot of the Blue Mountains (McCarthy et al 1948). The sequence had three phases that corresponded to different technologies and tool types (the Capertian, Bondaian and Eloueran). The categories have been refined through the interpretation of further excavation data and radiocarbon dates (Hiscock & Attenbrow 2005, JMcDCHM 2005). It is now thought that prior to 8,500 BP tool technology remained fairly static with a preference for silicified tuff, quartz and some unheated silcrete. Bipolar flaking was rare with unifacial flaking predominant. No backed artefacts have been found of this antiquity.

After 8,500 BP silcrete was more dominant as a raw material and bifacial flaking became the most common technique for tool manufacture. From about 4,000 BP to 1,000 BP backed artefacts appear more frequently. Tool manufacture techniques become more varied and bipolar flaking increases (JMcD CHM 2006). It has been argued that from 1,400 to 1,000 years before contact there is evidence of a decline in tool manufacture. This reduction may be the result of decreased tool making, an increase in the use of organic materials, changes in the way tools were made, or changes in what types of tools were preferred (Attenbrow 2010). The reduction in evidence coincides with the reduction in frequency of backed blades as a percentage of the assemblage.

After European colonisation, Aboriginal people of the Cumberland Plain often continued to manufacture tools, sometimes with new materials such as bottle glass or ceramics. There are several sites in Western Sydney were flaked glass has been recorded, for example at Prospect (Ngara Consulting 2003) and Oran Park (JMCHM 2007).



6 HISTORICAL LAND USE

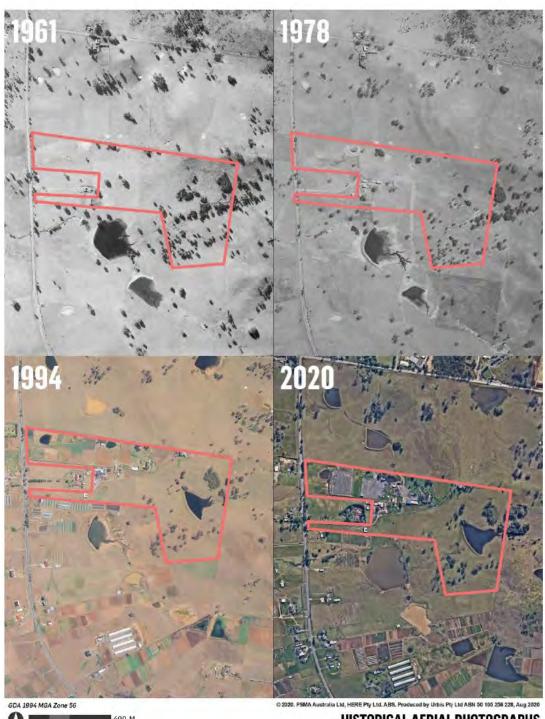
The development of the subject area has caused localised moderate to high levels of ground disturbance (damn and building construction) whilst the majority of the subject area has been subject to low levels of physical impact (vegetation clearance and pastoral uses).

The above characterisation of disturbance levels within the subject area have been determined through the analysis of historical aerial imagery. Historic aerial images from 1930, 1961, 1994 and 2020 were analysed to develop an understanding of disturbance (see Figure 10) and is included in Table 2.

Table 2 – Analysis of historical aerials

Year	Observation
1961	By 1961, the subject area has been largely cleared of vegetation, with only scattered trees remain in the western portion of the subject area. Small stands of trees remain in the eastern portion of the subject area adjacent to the watercourse. A large stand of trees remains in the north-eastern corner of the subject area. A small watercourse in the western portion has been dammed at the northern boundary of the subject area by this date. A rectilinear area at the southern boundary of the western portion may be small-scale agriculture associated with buildings in the adjacent lot.
1978	By this stage, the watercourse running through the eastern portion of the subject area has been dammed. More vegetation has been cleared downstream (west) of this dam, likely associated with its construction. The large stand of trees present in the north-eastern corner of the subject area from the 1961 aerial remains. Several small dams have been built in the western and eastern portions of the subject area. A number of buildings have also been constructed in the western portion of the subject area, along with roads associated unsealed vehicle tracks.
1994	The largest impact visible in the eastern portion of the subject area by this date is the large dam now established. The western portion of the subject area shows cultivated lots in the north western portion closer to Mamre Road with associated small-scale structures and a residential dwelling.
2020	The cultivated north-west portion of the subject area by this date has been converted into hardstand/laydown areas of asphalt/concrete. The eastern portion of the subject area looks largely unchanged from the 1994 aerial imagery.

URBIS



Project No: P0022231
Project Manager: Balazs Hansel
Subject Area

Figure 10 - Historic Aerial Photographs

HISTORICAL AERIAL PHOTOGRAPHS

GPT Warehouse and Distribution Centre, 754-770 & 784-786 Mamre Road, Kemps Creek NSW The GPT Group



7 PREDICTIVE MODEL

The Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales requires that an appropriate predictive model be used when undertaking an ACHA. A predictive model is used to estimate the nature and distribution of evidence of Aboriginal land use in a subject area. The results produced by a predictive model can be used to identify potential archaeological deposits (PADs).

A predictive model should consider variables that may influence the location, distribution and density of sites, features or artefacts within a subject area. Variables typically relate to the environment and topography, such as soils, landscape features, slope, landform and cultural resources. The following predictions for the subject area have been formulated on the basis of previous assessments, regional models and the AHIMS data provided above

There are several site types which are known to occur within New South Wales. These site types and their likelihood to occur within the subject area are evaluated in Table 4 below.

The general process archaeologists employ to determine the likelihood of any particular site type (artefact scatter, shelter, midden etc) to occur within a given subject area requires the synthetises of information for general distribution of archaeological sites within the wider area including:

- Detailed analysis of previous archaeological investigations within the same Region.
- Presence or absence of landscape features that present potential for archaeological resources (human occupation, use) such as raised terraces adjacent to permanent water.
- Analysis of the geology and soil landscape within the subject area which allows for a
 determination to be made of the type of raw material that would have been available for artefact
 production (silcrete, tuff, quartz etc) and the potential for the accumulation of archaeological
 resource within the subject area.
- Investigation of and determination of the level of disturbance/historical land use within the subject area which may impact on or remove entirely any potential archaeological material.

The combination of these would give us an indication of various levels of possibility of finding archaeological resource within a given area. Please refer to Table 3 below for an example of the indicative process of determining the likelihood of a given site occurring within a subject area.

Table 3 – Indicative process of determining the likelihood of a given site occurring within a subject area

Likelihood	Indicative subject area context	Indicative action
High	Low level of disturbance, presence of one or more archaeologically sensitive landforms (raised terrace adjacent to permanent water, sand dunes, rock shelter etc), presence of archaeologically sensitive soil landscape (Tuggerah, Blacktown, South Creek etc), presence of previously recorded archaeological site(s) and/or identification of	Detailed archaeological investigation including but not limited to survey, test excavation and potentially (depending on density and/or significance of archaeological deposit) salvage excavation.



Likelihood	Indicative subject area context	Indicative action
	previously unrecorded archaeological site(s) within the subject area	
Moderate	Moderate level of disturbance, presence of one or more archaeologically sensitive landforms (raised terrace adjacent to permanent water, sand dunes, rock shelter etc), presence of archaeologically sensitive soil landscape (Tuggerah, Blacktown, South Creek etc), presence of previously recorded archaeological site(s) and/or identification of previously unrecorded archaeological site(s) within the subject area	Detailed archaeological investigation including but not limited to survey, test excavation and potentially (depending on density and/or significance of archaeological deposit) salvage excavation.
Low	High level of disturbance, presence of one archaeologically sensitive landform (raised terrace adjacent to permanent water, sand dunes, rock shelter etc), presence of archaeologically sensitive soil landscape (Tuggerah, Blacktown, South Creek etc).	Employ chance finds procedure and works can continue without further archaeological investigation.
Nil	Complete removal of natural soil landscape, zero archaeologically sensitive landform, geological or soil features. Zero previously recorded archaeological sites.	Employ chance finds procedure and works can continue without further archaeological investigation.



Table 4 - Predictive Model

Site type	Description	Potential	Justification
Artefact Scatters/ Camp Sites	Artefact scatters/camp sites represent past Aboriginal occupation and possible stone knapping activities and include archaeological remains such as stone artefacts and potentially hearths. This site type usually appears as surface accumulation of stone artefacts in areas where vegetation is limited, and ground surface visibility increases. Such scatters of artefacts are also often exposed by erosion, agricultural events such as ploughing, and the creation of informal, unsealed vehicle access tracks and walking paths. These types of sites are often located on dry, relatively flat and elevated land along or adjacent to rivers and creeks.	Moderate to high	 The subject area contains archaeologically sensitive landforms (raised terraces, hill-slopes adjacent to watercourse). The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. The level of historical land disturbance within the majority of the subject are is low, increasing the potential that these site types would remain in situ.
Isolated Finds	Isolated finds represent artefactual material in singular, one off occurrences. Isolated finds are generally indicative of stone tool production, although can also include contact sites. Isolated finds may represent a single item discard event or be the result of limited stone knapping activity. The presence of such isolated artefacts may indicate the presence of a more extensive, in situ buried archaeological deposit, or a larger deposit obscured by low ground visibility. Isolated artefacts are likely to be located on landforms associated with past Aboriginal activities, such as ridgelines that would have provided ease of movement through the area, and level areas with access to water, particularly creeks and rivers.	Moderate to high	 The subject area contains archaeologically sensitive landforms (raised terraces, hill-slopes adjacent to watercourse) The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. The level of historical land disturbance within the majority of the sensitive majority of the subject area.



Site type	Description	Potential	Justification
			the subject are is low, increasing the potential that these site types would remain in situ.
PAD	Potential Archaeological Deposits (or PADs) are areas where there is no surface expression of stone artefacts, but due to a landscape feature there is a strong likelihood that the area will contain buried deposits of stone artefacts. Landscape features which may feature in PADs include proximity to waterways, particularly terraces and flats near 3rd order streams and above; ridge lines, ridge tops and sand dune systems.	Moderate to high	 The subject area contains archaeologically sensitive landforms (raised terraces, hill-slopes adjacent to watercourse). The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. The level of historical land disturbance within the majority of the subject are is low, increasing the potential that these site types would remain in situ.
Scarred Trees	Scarred trees are the results of the stripping-off the bark by Aboriginal people for various reasons, including the construction of shelters (huts), canoes, paddles, shields, baskets and bowls, fishing lines, cloaks, torches and bedding, as well as being beaten into fibre for string bags or ornaments (sources cited in Attenbrow 2002: 113). The removal of bark exposes the heart wood of the tree, resulting in a scar that can heal by the regrowth of the bark or remain an exposed scar for a prolonged period. Such scars, when they occur, are typically described as scarred trees. These sites most often occur in areas with mature, remnant native vegetation. The locations of scarred trees often reflect an absence of historical	Low	 Historical vegetation clearance is reasonably extensive, however, in the eastern and northern portions of the subject area there are stands of mature trees which may have potential for human modification.



Site type	Description	Potential	Justification
	clearance of vegetation rather than the actual pattern of scarred trees. Carved trees are different from scarred trees, and the carved designs may indicate totemic affiliation (Attenbrow 2002: 204); they may also have been carved for ceremonial purposes or as grave markers.		
Axe Grinding Grooves	Grinding grooves are the physical evidence of tool making or food processing activities undertaken by Aboriginal people. The manual rubbing of stones against other stones creates grooves in the rock; these are usually found on flat areas of abrasive rock such as sandstone. They may be associated with creek beds, or water sources such as rock pools in creek beds and on platforms, as water enables wet grinding to occur.	Low	 It is unlikely that the exposed sandstone outcrops required for this site type would occur within the subject area.
Bora/Ceremonial	Aboriginal ceremonial sites are locations that have spiritual or ceremonial values to Aboriginal people. Aboriginal ceremonial sites may comprise natural landforms and, in some cases, will also have archaeological material. Bora grounds are a ceremonial site type, usually consisting of a cleared area around one or more raised earth circles, and often comprised of two circles of different sizes, connected by a pathway, and accompanied by ground drawings or mouldings of people, animals or deities, and geometrically carved designs on the surrounding trees.	Low	 Historical land-use in the subject area is likely to have destroyed any bora grounds or ceremonial sites.
Burial	Aboriginal burial of the dead often took place relatively close to camp site locations. This is due to the fact that most people tended to die in or close to camp (unless killed in warfare or hunting accidents), and it is difficult to move a body long distances. Soft, sandy soils on, or close to, rivers and creeks allowed for easier movement of earth for burial; and burials may also occur within rock shelters or middens. Aboriginal burial sites may be marked by stone cairns, carved trees or a natural landmark. Burial sites may also be identified through historic records or oral histories.	Low	 The subject area is not situated on soft, sandy soils. The subject area does not include any rock shelters.



Site type	Description	Potential	Justification
Contact site	These types of sites are most likely to occur in locations of Aboriginal and settler interaction, such as on the edge of pastoral properties or towns. Artefacts located at such sites may involve the use of introduced materials such as glass or ceramics by Aboriginal people or be sites of Aboriginal occupation in the historical period.	Low	 Contact sites in the area are possible due to early European settlement. Historical land-use in the subject area reduces the potential for these sites.
Midden	Midden sites are indicative of Aboriginal habitation, subsistence and resource extraction. Midden sites are expressed through the occurrence of shell deposits of edible shell species often associated with dark, ashy soil and charcoal. Middens often occur in shelters, or in eroded or collapsed sand dunes. Middens occur along the coast or in proximity to waterways, where edible resources were extracted. Midden may represent a single meal or an accumulation over a long period of time involving many different activities. They are also often associated with other artefact types.	Nil to low	 The subject area is not situated near the coast. The lower order tributary within the subject area is not conducive to this type of site.
Art	Art sites can occur in the form of rock engravings or pigment on sandstone outcrops or within shelters (discussed below). An engraving is some form of image which has been pecked or carved into a rock surface. Engravings typically vary in size and nature, with small abstract geometric forms as well as anthropomorphic Figures and animals also depicted (DECCW, 2010c). In the Sydney region engravings tend to be located on the tops of Hawkesbury Sandstone ridges where vistas occur. Pigment art is the result of the application of material to a stone to leave a distinct impression. Pigment types include ochre, charcoal and pipeclay. Pigment art within the Sydney region is usually located in areas associated with habitation and sustenance.	Nil to low	 The subject area does not include any shelters. It is unlikely that the exposed sandstone outcrops required for this site type would occur within the subject area.
Shelters	Shelter sites are places of Aboriginal habitation. They take the form of rock overhangs which provided shelter and safety to Aboriginal people. Suitable	Nil to low	 The subject area does not include any shelters.

P22231_GPTMamreRoad_F01_Stage2.3



Site type	Description	Potential	Justification
	overhangs must be large and wide enough to have accommodated people with low flooding risk. Due to the nature of these sites, with generic rock over hangs common particularly in areas with an abundance of sandstone, their use by Aboriginal people is generally confirmed through the correlation of other site types including middens, art, PAD and/or artefactual deposits.		 It is unlikely that the exposed sandstone outcrops required for this site type would occur within the subject area.



7.1 SUMMARY

It should be noted that the AHIMS register does not represent a comprehensive list of all Aboriginal objects or sites in a specified area as it lists recorded sites only identified during previous archaeological survey effort. The wider surroundings of the subject area have been the subject of various levels and intensity of archaeological investigations during the last few decades. Most of the registered sites have been identified through targeted, pre-development surveys for infrastructure and maintenance works, with the restrictions on extent and scope of those developments.

The conclusions from the summary of the AHIMS results, previous reports and predictive modelling are the following:

- Based on the information available, it is clear that the coordinates of AHIMS ID# 45-5-3029 (EPTA4), 45-5-3031 (EPTA6), 45-5-3034 (EP-I 1), and 45-5-3035 (EP-I 2) are incorrectly registered. These sites fall within the CSR lands indicated in Figure 4 and Figure 8, approximately 1km north of the present subject area. Accordingly, there are no recorded Aboriginal sites within the subject area.
- While intact natural soils may be present within urban environments, they may not necessarily
 contain Aboriginal archaeological objects as landscape factors play a decisive role in Aboriginal
 utilisation of the land prior to European occupation.
- While disturbance may impact the likelihood for Aboriginal archaeological materials to survive on the surface, in situ deposits may remain below imported fill.
- Within the regional context of the subject area, registered Aboriginal sites tend to be located within proximity of waterways.
- Dominant site types within the region include artefact sites and potential archaeological deposits.
- The subject area shows evidence of moderate-high disturbance within the north-western portion as a result of development associated with cultivation, residential and hardstand construction. It is considered likely that these high levels of disturbance will have reduced the archaeological potential of that portion of subject area to low. The archaeological potential of the remaining eastern and southern portions of the subject area are considered to be moderate to high based on the low level of disturbance identified and the archaeologically sensitive landform (terraces adjacent to water).

8 SCOPE AND METHODOLOGY FOR THE ACHA

8.1 SCOPE

The ACHA will be prepared in accordance with the legislative requirements of the NPW Act and the following guidelines:

- Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW, 2010).
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010).
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales (OEH, 2011).
- The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013.



The ACHA will:

- Synthesise the results of the technical investigation including the environment, existing Aboriginal cultural heritage and archaeological resources in the vicinity of the subject area;
- Include detailed research into the historical land use and impacts on the subject area;
- Include community consultation and any Aboriginal cultural heritage values identified, in compliance with the consultation requirements (DECCW, 2010);
- Include an assessment of significance of any Aboriginal objects or Aboriginal cultural heritage values that may exist within the subject area; and
- Include an impact assessment and provide management and mitigation measures to inform the SSD application.

8.2 PROPOSED METHODOLOGY

The ACHA will follow the general methodology described below:

- Desktop assessment, including synthesising and evaluating background information of archaeological resources, existing and past environment and developing a predictive model.
- Consultation with the Registered Aboriginal Parties (RAPs) throughout the preparation of the ACHA.
- On-site meeting including site inspection of the subject area with the RAPs to allow for ample opportunity for cultural information to be provided and for the RAPs to familiarise themselves with the subject area and discuss the archaeological approach.
 - Note: This will be subject to Covid-19 social distancing measures, as applied by both the Federal and State governments, as well as those established by the client and Urbis.
- Undertake proposed test excavation program in accordance with methodology provided below.
- Preparation of draft ACHA synthesising all information collected during the process and providing the draft to the proponent and the RAPs for comments.
- Incorporate all comments and finalise the ACHA.

9 ARCHAEOLOGICAL RESEARCH DESIGN, ARCHAEOLOGICAL SURVEY AND TEST EXCAVATION METHODOLOGY

9.1 INTRODUCTION

The purpose of this Archaeological Research Design (ARD) was to provide a framework for the investigation of Aboriginal archaeological resources within the subject area. It also aims to formulate research questions to interpret the potential finds and results in context of local and regional archaeological modelling.

This ARD was designed in line with the requirements of the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010) (hereafter referenced as the Code of Practice).



The purpose of the archaeological survey and test excavation is to obtain information about the nature, extent and integrity of artefacts and any archaeological features that may exist in surface or subsurface context within the subject area. This information will be used to better to understand the significance of the archaeology at this location and to better guide its management. The archaeological survey and excavation is proposed to be carried out following the closure of Stage 2 and 3 of the ACHA, in September/October 2020.

Results of the desktop assessment, archaeological survey, and test excavations will be presented in a draft ACHAR and Archaeological Technical Report (ATR). The ACHAR and ATR will include any areas of constraint that will require further analysis and/or will support any avoidance or mitigation strategies with respect to possible impacts to Aboriginal objects or other places of importance to the Aboriginal community. The reports will be made available for the RAP's to comment on with comments incorporated in the final reports.

9.2 RESEARCH QUESTIONS

The below research questions have been formulated to analyse and interpret the findings of the archaeological survey and test excavation program in light of the existing predictive models and hypotheses for the Cumberland Plain and more specifically for the subject area and immediate surroundings. The research questions outlined below include broad questions that attempt to show the level of information the subject area may be expected to reveal as well as questions specifically related to the site:

- What is the spatial distribution of evidence of past Aboriginal land use and occupation within the study area?
- Are there any patterns of concentration of archaeological resources that reflect on landscape features and perhaps water courses?
- How does artefact distribution vary regarding proximity to a water source?
- What types of raw materials, artefact types and tool types are present within the assemblage?
- What types of stone tool technology are present within the sites?
- Have the test excavations revealed other site types such as hearths, heating ovens, knapping floors or other foci or activities areas? How are these features can be interpreted in context of the artefact distribution of the assemblage?
- Do the results of the test excavation demonstrate any evidence of disturbance associated with historical land use or natural agencies within the study area?
- How does artefact distribution vary regarding different soil landscapes?
- What can the artefact assemblage (or lack thereof) indicate about previous land use by Aboriginal people?
- How do the test excavation results compare with other archaeological investigations in the region?
- How does the pattern of landscape use compare to previous studies in the region?

The research design questions developed to guide the testing program are not limited to the questions above and other pertinent questions may arise (or be fine-tuned) during the course of the work being undertaken and through consultation with the Aboriginal community.



9.3 FIELD SURVEY METHODOLOGY

Prior to test excavations Urbis archaeologists and selected members of the RAPs will conduct an archaeological field survey of the entire subject area in order to attempt to relocate any known archaeological sites, and to identify any previously unrecorded Aboriginal sites or objects.

The field survey methodology will include:

- Systematic pedestrian survey of the entire subject area to identify any previously unrecorded sites, areas of archaeological potential, and any areas of historical land use and disturbance.
- Documentation of cultural information as provided by Aboriginal representatives.
- Any Aboriginal sites and / or PADs identified during the survey will be recorded using standard archaeological methods, including description of the site, number of features and artefacts, GPS coordinates and extent, level of disturbance and photographic records.
- All AHIMS sites registered within the subject are will also be inspected (ground-truthed), and
 assessment of the subsurface potential was discussed. As discussed above there are four AHIMS
 sites incorrectly registered within the subject area, these will be address during the survey
- Any new Aboriginal sites will require the completion of an Aboriginal heritage site recording form (AHIMS Site Card) as required by DPC.

9.4 TEST EXCAVATION METHODOLOGY

The test excavation will be undertaken in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) in order to understand the nature, extent, integrity and research significance of the Aboriginal archaeological resource. The test excavation will also aim to sample the various landscape features located within the subject area for any potential sub-surface archaeological deposits.

This section presents the methodology for the proposed test excavation program. According to the Code of Practice "test excavations should be sufficiently comprehensive to allow characterisation of the Aboriginal objects present without having a significant impact on the archaeological value of the subject area".

The test excavation methodology will include:

- The initial approach to testing will include the excavation of 50 cm by 50 cm test pits in various transects on a 10m grid system. The exact location of the transects and test pits will be informed by the results of the archaeological survey and the predictive model of the ACHAR.
- The location and number of transects and test pits will be further adjusted by on-site observation of localised disturbance and in consultation with the Aboriginal site officers on site.

9.4.1 Archaeological Test Excavation Stage 1

- The test pits shall be excavated by hand (inclusive of trowels, spades and other hand tools) along each transects at intervals of 10m.
- The first test pit within each transect and/or landform shall be excavated in 5cm spits to establish the depth and nature of soil and any stratigraphy present. Subsequent test pits conducted within the same transect and/or landform or PAD area shall then be excavated in either 10cm spits or



stratigraphic units (whichever is smaller) to the base of Aboriginal object-bearing units being the removal of the A-horizon soil deposit down to the sterile clay layer (B-horizon).

- All test pits will be excavated using the above methods in each transect before any further adjustment is made to the transect or additional pits are excavated.
- All excavated soil will be sieved through 5mm nested sieves using wet sieving method.

9.4.2 Archaeological Test Excavation Stage 2

- Following the completion of Stage 1, decision will be made to excavate additional 50cm by 50 cm test pits to identify the spatial extent of identified archaeological resources, or existing pits will be expanded to further excavate those pits that yielded archaeological material or features to better understand the nature, extent and integrity of the identified archaeological resources.
- Test pits may be expanded into a 1m x 1m square or other arrangements in line with the Code of Practice at the discretion of the Excavation Director. The additional pits would be excavated in 50cm x 50cm test pit units, to further understand the archaeological resource.
- Additional 50cm x 50cm test pits may be placed at an interval of 3, 5 or 10m(or other justifiable and regular spacing appropriate to the scale of the area being tested) from the test pits that yielded archaeological resource to test further the immediate area for artefact concentrations and/or archaeological features, or to define a site boundary. These additional test pits would be excavated using the same methodology outline above.
- Expansion test pits were combined and excavated as necessary in 50cm x 50cm units for the purposes of further understanding site characteristics. Note that under the Code of Practice, the maximum area that can be excavated in any one continuous area is 3m².

9.4.3 General procedures

- The Code of Practice dictates that the maximum surface area of all test excavation units must be no greater than 0.5% of the PAD or landform unit area being investigated.
- All excavated soil was sieved in 5 mm sieves preferably using wet sieving method. The proposed sieving method will be discussed during the site survey and in context with the soil present.
- Artefacts will be collected, bagged and tagged with a unique identification number according to test pit location, spit or context number.
- Each test pit shall be recorded using standard archaeological procedure, including standardised recording forms, coordinates collected using a GPS, photographic recording with scale and stratigraphic / soil profile for each test pit shall be recorded in scale drawings as required by Code of Practice recording requirements.
- Test excavation units shall be backfilled as soon as practicable, to be organised by the proponent.
- An AHIMS site card shall be prepared and submitted to the AHIMS Registrar for any new sites identified during test excavations.
- An AHIMS Site Impact Recording form shall be completed and submitted to the AHIMS Registrar for any sites impacted during test excavations.
- In the unlikely event that suspected human remains are identified works will immediately cease and the NSW Police and DPC will be notified.



 Test excavations ceased when enough information* had been recovered to adequately characterise the objects present with regard to their nature and significance.

*Enough information is defined by DPC as meaning "that the sample of excavated material clearly and self-evidently demonstrates the deposit's nature and significance. This may include things like locally or regionally high object density: presence of rare or representative objects: presence of archaeological features: or locally or regionally significant deposits stratified or not" (DECCW 2010a).

9.4.4 Lithic Analysis

All collected materials shall be temporarily held at the Urbis office, where they shall be analysed and catalogued by Urbis archaeological staff using the standard artefact curation protocol of the Australian Museum. Selected artefacts or representative samples will be photographed and included and further analysed in detail in the report. The collection shall be analysed using *A Record in Stone* (Holdaway & Stern 2004) and other contemporary methods.

9.4.5 Care and control

A strategy for management of Aboriginal artefacts recovered from the site shall be developed through consultation with the RAPs. The RAPs are invited to provide comment on the long-term management of artefacts.

Artefacts identified and collected during test excavations will be temporarily held in a lockable, secure location at the Urbis Sydney office (ANGEL PLACE, LEVEL 8, 123 PITT STREET SYDNEY, NSW 2000, AUSTRALIA) where they shall be catalogued and analysed by an Urbis archaeologist / artefact specialist.

Following completion of artefact cataloguing and analysis any artefacts recovered during test excavations and subsequent salvage excavations (if necessary) will be moved to the agreed long-term keeping place as soon as practicable in accordance with:

 Requirement 26 "Stone artefact deposition and storage" in the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (24 September 2010)

10 ABORIGINAL COMMUNITY INPUT POINTS FOR THE ACHA PROCESS

Urbis welcomes input and information from the RAPs at any stage throughout the entire process of the ACHA. In line with the Consultation Requirements, the main input points for the consultation are the following:

- During Stage 2 Presentation of information about the proposed project (this project information and methodology).
- During Stage 3 Gathering information about cultural significance (this methodology and throughout the assessment process).
- During site inspection in consultation with and approval from the proponent.
- During Stage 4 Review of the draft ACHA.



11 GATHERING INFORMATION ABOUT CULTURAL SIGNIFICANCE

In accordance with Section 4.3 of the Consultation Requirements, Urbis welcomes any information on cultural heritage and cultural significance of the subject area. Urbis is seeking information on cultural values and archaeological significance of the subject area, including:

- Whether there are any Aboriginal objects of cultural value to Aboriginal people in and near the subject area.
- Whether there are any places of cultural value to Aboriginal people in the area of the proposed project (whether they are Aboriginal places declared under s.84 of the NPW Act or not). This will include places of social, spiritual and cultural value, historic places with cultural significance, and potential places/areas of historic, social, spiritual and/or cultural significance.

Please also consider the following when providing information:

- Do you have information on any Aboriginal objects within or near the subject area?
- Do you or somebody you know have information of cultural values, stories in relation to the subject area and if that information can be shared?

In order to comply with the Consultation Requirements, streamline information provided during Stage 2 and 3, and to inform the proponent for the field inspection component, Urbis would like to collect information from you in relation to the following:

- Cultural connection: Please describe the nature of your cultural connection to the country on which the subject area is situated. Please include any relevant cultural knowledge or knowledge of Aboriginal objects or places within the subject area. Have you ever lived in or near the subject area? If you are a Traditional Owner, please state this clearly.
- 2. Representing your community members: Please state who you or your organisation represents. Do you or your organisation represent other members of the Aboriginal community? If so, please describe how information is provided to the other members, and how their information and knowledge may be provided back to the proponent and Urbis.
- 3. Previous experience: Please list your relevant (for example, in the area of the proposed project) previous experience in providing cultural heritage advice and survey participation.
- 4. Schedule of Rates: Please provide your Certificate of Currency including Product and Public Liability Insurance and Worker's Compensation. Please also include a schedule of rates (hourly/half day/day) for fieldwork participation, and include any expenses you may expect to incur, and these will be sought to be reimbursed. Please note that it is for the discretion for the proponent to decide if they invite RAPs for site works and the consultation process does not guarantee paid employment.

Please find the above list at the end of this document in Appendix 4 for your convenience to fill-out and send back to Urbis.

Please note that in accordance with Section 3.4 of the Consultation Requirements consultation does not include the employment of Aboriginal people to assist in field assessment and/or site monitoring. Aboriginal people may provide services to the proponent through a contractual arrangement; however, this is separate from consultation. The proponent is not obliged to employ those Aboriginal people



registered for consultation. Consultation as per these requirements will continue irrespective of potential or actual employment opportunities for Aboriginal people.

12 SENSITIVE CULTURAL INFORMATION – MANAGEMENT PROTOCOL

If you or your organisation has sensitive or restricted public access information for determining or managing the heritage values of the subject area, it is proposed that the proponent will manage this information (if provided by the Aboriginal community) in accordance with a sensitive cultural information management protocol. It is anticipated that the protocol will include making note of and managing the material in accordance with the following key limitations as advised by Aboriginal people at the time of the information being provided:

- Any restrictions on access of the material.
- Any restrictions on communication of the material (confidentiality).
- Any restrictions on the location/storage of the material.
- Any cultural recommendations on handling the material.
- Any names and contact details of persons authorised within the relevant Aboriginal group to make decisions concerning the Aboriginal material and degree of authorisation.
- Any details of any consent given in accordance with customary law.
- Any access and use by the RAPs of the cultural information in the material.

Please consider the above list when providing your recommendations regarding any culturally sensitive information.

13 CRITICAL TIMELINES

Critical timelines for the ACHA are outlined in Table 5 below. Please note that some of these timeframes are estimates at this stage in the process and are provided to allow forward planning of personnel and resources.

Table 5 - Critical timelines.

Project Stage/Task	Date
Stage 2 and 3: Provision of comments on the provided project information and proposed methodology (this document).	Within 28 days from delivery of this document, by Close of Business 9 October 2020.
Stage 3: Site survey (if agreed to by proponent).	On or after the 12 October 2020.
Stage 3: Test Excavation Program	To be confirmed Option 1 - Late October 2020 for entire subject area. Option 2 - Late October 2020 for northern Lot and April 2021 for Southern Lot.
Stage 4: Provision of the draft ACHA report (including the proposed	Within 1 month of the end of the test excavation program.



Project Stage/Task	Date
management and mitigation measures) to the RAPs.	
Stage 4: Provision of comments on draft ACHA report.	Within 28 days from delivery of the draft ACHA report to the RAPs.
Stage 4: Finalisation of the ACHA report including the consideration of all comments and feedback.	Within one week of the closing of the comment period for the draft ACHA report.

Please provide the requested information by Close of Business 9 October 2020. Comments received after this date might be excluded from the draft ACHA. Please provide your comments in writing to:

Andrew Crisp Urbis Pty Ltd Level 8 Angel Place 123 Pitt Street Sydney, 2000 NSW P: +61 2 8233 7642

Email: acrisp@urbis.com.au

Andrew Crisp

Senior Archaeologist

+61 2 8233 7642



APPENDIX 1 – BASIC AND EXTENSIVE AHIMS SEARCH RESULTS



AHIMS Web Services (AWS) Search Result

Purchase Order/Reference : Mamre_Bas

Client Service ID: 517484

Date: 02 July 2020

Urbis Pty Ltd - Angel Place L8 123 Pitt Street

Level 8 123 Angel Street Sydney New South Wales 2000

Attention: Aaron Olsen

Email: aolsen@urbis.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 292617 - 297343, Northings : 6251502 - 6255555 with a Buffer of 0 meters, conducted by Aaron Olsen on 02 July 2020,

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it.
 Aboriginal places gazetted after 2001 are available on the NSW Government Gazette
 (http://www.nsw.gov au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are
 recorded as grid references and it is important to note that there may be errors or omissions in these
 recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.

ABN 30 841 387 271

Email: ahims@environment.nsw.gov.au

Web: www.environment nsw.gov.au

• This search can form part of your due diligence and remains valid for 12 months.

Your Ref/PO Number : Mamre_Ext

<u>SiteID</u>	SiteName	<u>Datum</u>	<u>Zone</u>	Easting	Northing	Context	Site Status	<u>SiteFeatures</u>	<u>SiteTypes</u>	Reports

Your Ref/PO Number : Mamre_Ext

SiteID	SiteName	<u>Datum</u>	<u>Zone</u>	Easting	Northing Context	<u>Site</u>	<u>Status</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	Reports

Your Ref/PO Number : Mamre_Ext

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	Zone	Easting	<u>Northing</u>	<u>Context</u>	Site Status	<u>SiteFeatures</u>	<u>SiteTypes</u>	Reports

Your Ref/PO Number : Mamre_Ext

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	Easting	Northing	<u>Context</u>	Site Status	<u>SiteFeatures</u>	<u>SiteTypes</u>	Reports



AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Mamre_Ext

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	Easting	Northing	<u>Context</u>	Site Status	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>



APPENDIX 2 - QUESTIONNAIRE

 Cultural connection: Please describe the nature of your cultural connection to the country on which the subject area is situated. Please include any relevant cultural knowledge or knowledge of Aboriginal objects or places within the subject area. Have you ever lived in or near the subject area? If you are a Traditional Owner, please state this clearly.



2. Representing your community members: Please state who you or your organisation represents. Do you or your organisation represent other members of the Aboriginal community? If so, please describe how information is provided to the other members, and how their information and knowledge may be provided back to the Proponent and Urbis.



 Previous experience: Please list your relevant (for example, in the area of the proposed project) previous experience in providing cultural heritage advice and survey participation.



4. Schedule of Rates: Please provide your Certificate of Currency including Product and Public Liability Insurance and Worker's Compensation. Please also schedule of rates (hourly/half day/day) for fieldwork participation, and include any expenses you may expect to incur, and these will be sought to be reimbursed. Please note that it is for the discretion for the Proponent to decide if they invite RAPs for site works and the consultation process does not guarantee paid employment.



Yours sincerely,

Charuollen

Andrew Crisp Senior Consultant +61 2 8233 7642 acrisp@urbis.com.au

STAGES 2 & 3 – RAP RESPONSES

From: <u>lilly carroll</u>
To: <u>Andrew Crisp</u>

Cc: <u>Balazs Hansel</u>; <u>Aaron Olsen</u>

Subject: Re: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document

Date: Saturday, 12 September 2020 7:03:31 AM

Attachments: <u>image002.png</u>

image008.png image010.png image004.png image006.png

Hi Andrew,

DNC is happy with the go ahead for Mamre Rd / Kemp's Creek project

Kind regards Paul

Sent from Yahoo Mail for iPhone

On Friday, September 11, 2020, 1:41 pm, Andrew Crisp <acrisp@urbis.com.au> wrote:

Good afternoon.

In accordance with Stage 2 and Stage 3 of the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010) please find attached the combined Stage 2 (presentation of information about the proposed project) and Stage 3 (gathering information about cultural significance) document for the proposed industrial development of 754-770 & 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135.

Please provide all comments by 5pm 9th October 2020.

Please supply any comments to the details provided below:

C/- Urbis

Angel Place, Level 8, 123 Pitt Street, Sydney 2000

Primary Contact: Andrew Crisp

P: 02 8233 7642

E: acrisp@urbis.com.au

By: 9th October 2020.

Please reach out if you have any questions.

Kind regards,

ANDREW CRISP

SENIOR CONSULTANT

D +61 2 8233 7642

T +61 2 8233 9900

E acrisp@urbis.com.au

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APPENDIX 2 – QUESTIONNAIRE

 Cultural connection: Please describe the nature of your cultural connection to the country on which the subject area is situated. Please include any relevant cultural knowledge or knowledge of Aboriginal objects or places within the subject area. Have you ever lived in or near the subject area? If you are a Traditional Owner, please state this clearly.

Warrami - (hello) - please allow Me to introduce myself, My name is Jamie (Mugudun) Eastwood. I am A proud First Nations Indigenous Man of - Darug - Gadidgal - Nygamba Aboriginal Heritage.

My cultural connection to country around the subject area is directly link to my Mothers people of the Darug Nation .

As a local of this area for the past 40 years - growing up as a kid I explored, played, swam and fished in (Kempts creek, South creek, Baddgerys creek And Ropes Creek) and have fond memories of these water ways when they were a lot cleaner, as an adult I have continue to explore the same water ways throughout my work as an Aboriginal cultural Sites Officer over the past 17 years.

Having Grown up with and being mentor by Aboriginal Elders (Knowledge Holders) I have been taught of the Spiritual Significance of water and waterways to Aboriginal People ,used in the past for there abundant natural resources ,there land forms as natural boundary Clan Markers ,and travel routes for songlines and ceremony water and water courses were highly valued.

As a Aboriginal Cultural site Officer I have found that most Aboriginal Objects (artefacts) are closly associated to water courses which makes a lot of sense as water was a highly significantly culturaly valued.

Given that the proposed Project area is situated closley and between two major creeks South Creek And Ropes Creek I Feel that the area has a high potential for both surface and uncovered Aborigial Objects as previous archaeological investigations have through Artefact Find in and around the area.

Artefacts found during Archaeological investigation in the past around the project area have provided myself and other Aboriginal people of the local community a hands on direct link to our Ancestry and provide the wider local community a history of Aboriginal occupation of the area.



 Representing your community members: Please state who you or your organisation represents. Do you or your organisation represent other members of the Aboriginal community? If so, please describe how information is provided to the other members, and how their information and knowledge may be provided back to the Proponent and Urbis.

ARAGUNG Aboriginal Cultural Heritage site assessments is a Aboriginal agency who main interest is protecting the past and preserving the future through Heritage Works and cultural work shops in schools and local communites events in a continual effort to maintain and promote our proud Indigenous Cutur.

Our agency represent family with traditional cultural links in our local community and members from the wider Aboriginal community. Information is shared among our members as to various Heritage Projects - government initatives - community and other events via email phone or word of mouth.

Should one of our member have information or specialise Knowledge history to a certain area of local country or have a Elders Standing in the community with there permission knowledge is avaliable and shared.



 Previous experience: Please list your relevant (for example, in the area of the proposed project) previous experience in providing cultural heritage advice and survey participation.

Having Work as a Aboriginal Cultural site Officer for the past 17 year and also been employed by Archaeological consultants as a Archaeological assisstant my experience and cultural knowledge could be described as being highly experience and Qualified

I have work in and around the propossed Archaeological study area for many years conducting Archaeological test excavations, Archaeological Savage Works, Archaeological surveys, Surface collections and the reburial of Aboriginal artefacts.

Should you require a reference

Jillian comber Comber consultants 0418788802

Neville Baker Baker Archaeology 0428378939 From: To: Aaron Olsen

FW: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document Subject:

Date: Tuesday, 29 September 2020 3:01:04 PM

Attachments: BARRABY AAMI Mobile Business Insurance Policy Schedule SPD013627709.pdf

GPT MAMRE ROAD BCS.pdf

Workers Insurance Certificate of Currency.pdf

image007.png image008.png image009.png image010.png image011.png

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From: Lee Field <barrabyculturalservices@gmail.com>

Sent: Thursday, 24 September 2020 2:05 PM To: Andrew Crisp <acrisp@urbis.com.au>

Subject: Re: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document

Dear Andrew.

I on behalf of Barraby Cultural Services have reviewed and agree with the methodology for this project. I have previously been involved and assisted in other projects within close proximity to the project area, such as the M12 Motorway and the WSA. Both projects were able to identify Aboriginal occupation in the Kemps Creek area and contained very high numbers of artefacts retrieved from PADs identified as Aboriginal camp sites and knapping sites, especially those areas within close proximity to the creeks. South Creek in particular is a very rich area and I believe

that the project area definitely has potential to contain artefact scatters and PADs.

The Kemps Creek and surrounding areas were of great importance to Aboriginal people in the past and still remain very important to us RAPs whom share a connection with those who occupied the lands thousands of years ago. I would like the opportunity to be able participate and be included in both the field inspection and the test excavation program.

Please see our attached insurances and a PDF document containing our rates, experience and references.

If you require any more information please contact be on the details below.

Many Thanks

Lee Field 0431 314 892

On 11 Sep 2020, at 1:41 pm, Andrew Crisp acrisp@urbis.com.au> wrote:

<P22231_GPTMamreRoad_F01_Stage2.3.pdf>

From: **Andrew Crisp** Aaron Olsen To:

FW: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document Subject:

Date: Monday, 12 October 2020 1:22:59 PM

Attachments: A1.PL2021.pdf A1.WC2021.pdf

P22231 GPTMamreRoad F01 Stage2.3 (3).pdf

image002.png image004.png image006.png image008.png image010.png image021.png image022.png image023.png image024.png image025.png

ANDREW CRISP

SENIOR CONSULTANT D +61 2 8233 7642 T+61 2 8233 9900 E acrisp@urbis.com.au













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From: Carolyn .H <cazadirect@live.com> Sent: Saturday, 10 October 2020 8:36 PM **To:** Andrew Crisp <acrisp@urbis.com.au>

Subject: Re: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document



Contact: Carolyn Hickey

M: 0411650057

E: Cazadirect@live.com

A: 10 Marie Pitt Place, Glenmore Park, NSW 2745

ACN: 639 868 876

ABN: 31 639 868 876

Hi Andrew,

I have reviewed the document and support the project information and Methodology.

Please find attached the completed document, and Insurances.

Kind regards, Carolyn Hickey



From: Andrew Crisp <a crisp@urbis.com.au>
Sent: Friday, 11 September 2020 1:41 PM

Cc: Balazs Hansel < <u>bhansel@urbis.com.au</u>>; Aaron Olsen < <u>aolsen@urbis.com.au</u>> **Subject:** P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document

Good afternoon.

In accordance with Stage 2 and Stage 3 of the *Aboriginal cultural heritage consultation requirements* for proponents (DECCW 2010) please find attached the combined Stage 2 (presentation of information about the proposed project) and Stage 3 (gathering information about cultural significance) document for the proposed industrial development of 754-770 & 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135.

Please provide all comments by 5pm 9th October 2020.

Please supply any comments to the details provided below:

C/- Urbis

Angel Place, Level 8, 123 Pitt Street, Sydney 2000

Primary Contact: Andrew Crisp

P: 02 8233 7642

E: acrisp@urbis.com.au By: 9th October 2020.

Please reach out if you have any questions.

Kind regards,

ANDREW CRISP

SENIOR CONSULTANT **D** +61 2 8233 7642 T +61 2 8233 9900 E acrisp@urbis.com.au

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From: Aaron Olsen To:

FW: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document Subject:

Date: Tuesday, 29 September 2020 2:55:41 PM

Attachments: P22231 GPTMamreRoad F01 Stage2.3 (2) information required.pdf

GIO Mobile Business Protect Certificate of Currency GPM004786956 (2).pdf

Workers Insurance Certificate of Currency.pdf

image002.png image003.png image004.png image005.png image006.png image007.png image008.png image009.png image010.png image011.png

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From: James Eastwood < james.eastwood@y7mail.com>

Sent: Monday, 21 September 2020 5:08 PM To: Andrew Crisp <acrisp@urbis.com.au>

Subject: Re: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document



Dear Andrew

Thank you for your email and sharing information RE:Proposed Industrial Development of 754-770 & 784 - 786 Mamre Road Kempts creek Lot 59 & 60 DP 259135 . I have read the information in its entirety and agree with all recommendations put forth.

please find attach to this email information sought in Appendix 2 - Questionnaire along with ARAGUNG Aboriginal Cultural heritage site assessment pay rate, and up to date insurance details.

kind regards ARAGUNG Co/Jamie Eastwood 0427793334

On Friday, 11 September 2020, 01:41:41 pm AEST, Andrew Crisp acrisp@urbis.com.au> wrote:

Good afternoon,

In accordance with Stage 2 and Stage 3 of the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010) please find attached the combined Stage 2 (presentation of information about the proposed project) and Stage 3 (gathering information about cultural significance) document for the proposed industrial development of 754-770 & 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135.

Please provide all comments by 5pm 9th October 2020.

Please supply any comments to the details provided below:

C/- Urbis

Angel Place, Level 8, 123 Pitt Street, Sydney 2000

Primary Contact: Andrew Crisp

P: 02 8233 7642

E: acrisp@urbis.com.au

By: 9th October 2020.

Please reach out if you have any questions.

Kind regards,

ANDREW CRISP

SENIOR CONSULTANT **D** +61 2 8233 7642 T +61 2 8233 9900 E acrisp@urbis.com.au













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From: **Andrew Crisp** To: **Aaron Olsen**

FW: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document Subject:

Date: Monday, 12 October 2020 1:20:57 PM

Attachments: image007.png

image008.png image009.png image010.png image011.png

ANDREW CRISP

SENIOR CONSULTANT D +61 2 8233 7642 T+61 2 8233 9900 E acrisp@urbis.com.au

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From: Clive Freeman <clive.freeman@y7mail.com> Sent: Wednesday, 30 September 2020 9:59 PM

To: Andrew Crisp <acrisp@urbis.com.au>

Subject: Re: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document

Hi Andrew,

I will be completing the read over of these documents this week and will let you know via email if I have any comment.

Kind regards

Clive Freeman Managing Director Freeman & Marx Pty Ltd

Sent from my iPhone

On 11 Sep 2020, at 1:41 pm, Andrew Crisp <a crisp@urbis.com.au> wrote:

Good afternoon,

In accordance with Stage 2 and Stage 3 of the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010) please find attached the combined Stage 2 (presentation of information about the proposed project) and Stage 3 (gathering information about cultural significance) document for the proposed industrial development of 754-770 & 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135.

Please provide all comments by 5pm 9th October 2020.

Please supply any comments to the details provided below:

C/- Urbis Angel Place, Level 8, 123 Pitt Street, Sydney 2000 Primary Contact: Andrew Crisp

P: 02 8233 7642

E: acrisp@urbis.com.au
By: 9th October 2020.

Please reach out if you have any questions.

Kind regards,

ANDREW CRISP

SENIOR CONSULTANT <image001.gif>
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T +61 2 8233 9900
E acrisp@urbis.com.au

<image002.png>

<image004.png><image010.png>

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<P22231_GPTMamreRoad_F01_Stage2.3.pdf>

From: **Andrew Crisp** To: **Aaron Olsen**

Subject: FW: EOI for field work -P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document

Date: Tuesday, 29 September 2020 2:55:41 PM

Attachments: image002.png

image003.png image004.png image005.png image006.png

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From: Corroboree Aboringinal Corporation <corroboreecorp@bigpond.com>

Sent: Tuesday, 15 September 2020 1:44 PM To: Andrew Crisp <acrisp@urbis.com.au>

Cc: Marilyn Carroll-Johnson <corroboreecorp@bigpond.com>

Subject: Re: EOI for field work -P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3

Consultation Document

Hi Andrew

Please refer EOI for field work.

Attention: Andrew Crisp

Senior Consultant +61 2 8233 7642

URBIS QUESTIONNAIRE FOR FIELD WORK -APPENDIX 2 – QUESTIONNAIRE -754-770 & 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135

- 1. Cultural connection: Please describe the nature of your cultural connection to the country on which the subject area is situated. Please include any relevant cultural knowledge or knowledge of Aboriginal objects or places within the subject area. We connect thru our Mother Earth on all of Australia. Have you ever lived in or near the subject area? We are Aboriginal people whose family have lived in the area and surrounding areas...If are a Traditional Owner: We as Aboriginal people are traditional owners. We are Aboriginal people whose family have lived in the area and surrounding areas. We have worked on surveys in the area fro many years.
- 2. Representing your community members: Please state who you or your organisation represents. We represent as Aboriginal people for the benefit of all Aboriginal people to aid the preservation of our heritage, our history, our culture. . Do you or your organisation represent other members of the Aboriginal community? We our members and stakeholders represent the members of Corroboree Aboriginal Corporations and also as Aboriginal people. Our family have knowledge of cultural heritage in the area and surrounding areas. If so, please describe how information is provided to the other members, and how their information and knowledge may be provided back to the Proponent and Urbis. We have discussions and meetings about the cultural heritage of our people. We share field experience and cultural finds, and relevant information with the members/RAPS of the Corporation. They can then share it further with other aboriginal people finds with our corporation members and the broader community. We have worked with a vast number of Archeologists on behalf of the proponent and have always engaged in a professional and timely manner. Any information would be relayed to the archeologists to shared with the proponent. This is how it's been done for many years.
- 3. Previous experience: Please list your relevant (for example, in the area of the proposed project) previous experience in providing cultural heritage advice and survey participation.
 We have worked with a vast number of Archaeologists in the subject area as have my family members. We can identify artefacts. We can do survey. Do test pits. We can wet
 - family members. We can identify artefacts. We can do survey. Do test pits. We can wet and dry sieve. We can soil test. We can record information, etc. Our members are all aware of the OH&S guidelines, etc. We have all the relevant safety gear required.
- 4. Schedule of Rates: Please provide your Certificate of Currency including Product and Public Liability Insurance and Worker's Compensation. Please also schedule of rates (hourly/half day/day) for fieldwork participation, and include any expenses you may expect to incur, and these will be sought to be reimbursed. Please note that it is for the discretion for the Proponent to decide if they invite RAPs for site works and the consultation process does not guarantee paid employment.

Kind regards
Marilyn Carroll-Johnson
Director
Corroboree Aboriginal Corporation

Mob: 0415911159 Ph: 0288244324

E: corroboreecorp@bigpond.com

Address: PO Box 3340 ROUSE HILL NSW 2155

On 11 Sep 2020, at 1:41 pm, Andrew Crisp acrisp@urbis.com.au> wrote:

Good afternoon,

In accordance with Stage 2 and Stage 3 of the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010) please find attached the combined Stage 2 (presentation of information about the proposed project) and Stage 3 (gathering information about cultural significance) document for the proposed industrial development of 754-770 & 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135.

Please provide all comments by 5pm 9th October 2020.

Please supply any comments to the details provided below:

C/- Urbis Angel Place, Level 8, 123 Pitt Street, Sydney 2000 Primary Contact: Andrew Crisp P: 02 8233 7642

E: acrisp@urbis.com.au
By: 9th October 2020.

Please reach out if you have any questions.

Kind regards,

ANDREW CRISP

SENIOR CONSULTANT <image001.gif> D +61 2 8233 7642 T +61 2 8233 9900 E acrisp@urbis.com.au

<image002.png>

<image004.png><image010.png>

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<P22231_GPTMamreRoad_F01_Stage2.3.pdf>

From: <u>lilly carroll</u>
To: <u>Andrew Crisp</u>

Cc: <u>Balazs Hansel</u>; <u>Aaron Olsen</u>

Subject: Re: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document

Date: Saturday, 12 September 2020 7:03:31 AM

Attachments: image002.png

image008.png image010.png image004.png image006.png

Hi Andrew,

DNC is happy with the go ahead for Mamre Rd / Kemp's Creek project

Kind regards Paul

Sent from Yahoo Mail for iPhone

On Friday, September 11, 2020, 1:41 pm, Andrew Crisp <acrisp@urbis.com.au> wrote:

Good afternoon.

In accordance with Stage 2 and Stage 3 of the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010) please find attached the combined Stage 2 (presentation of information about the proposed project) and Stage 3 (gathering information about cultural significance) document for the proposed industrial development of 754-770 & 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135.

Please provide all comments by 5pm 9th October 2020.

Please supply any comments to the details provided below:

C/- Urbis

Angel Place, Level 8, 123 Pitt Street, Sydney 2000

Primary Contact: Andrew Crisp

P: 02 8233 7642

E: acrisp@urbis.com.au

By: 9th October 2020.

Please reach out if you have any questions.

Kind regards,

ANDREW CRISP

SENIOR CONSULTANT

D +61 2 8233 7642

T +61 2 8233 9900

E acrisp@urbis.com.au

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From: Cherie Carroll Turrise
To: Andrew Crisp

Cc: Balazs Hansel; Aaron Olsen

Subject: Re: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document

Date: Tuesday, 15 September 2020 2:05:26 PM

Attachments: <u>IMG_2376.PNG</u>

image004.png image002.png image008.png image006.png image010.png



Attention: Andrew Crisp

Senior Consultant +61 2 8233 7642

acrisp@urbis.com.au

URBIS QUESTIONNAIRE FOR FIELD WORK -APPENDIX 2 – QUESTIONNAIRE -754-770 & 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135

- <!--[if !supportLists]-->1. <!--[endif]-->Cultural connection: Please describe the nature of your cultural connection to the country on which the subject area is situated. Please include any relevant cultural knowledge or knowledge of Aboriginal objects or places within the subject area. We connect as Aboriginal people. Have you ever lived in or near the subject area? We have lived in the area and surrounding areas. If are a Traditional Owner: Aboriginal people are traditional owners. Aboriginal people our family have lived in the area and surrounding areas. We worked on surveys in the area.
- <!--[if !supportLists]-->2. <!--[endif]-->Representing your community members: Please state who you or your organisation represents. We are Aboriginal people who work in Cultural Heritage for the benefit of all Aboriginal people. Do you or your organisation represent other members of the Aboriginal community. Our family have knowledge of cultural heritage in the area and surrounding areas. If so, please describe how information is provided to the other members, and how their information and knowledge may be provided back to the Proponent and Urbis. We have regular meetings. We have worked with Archeologists on behalf of the proponent in a professional manner. Any information forwarded via archeologists to the proponent.
- <!--[if !supportLists]-->3. <!--[endif]-->Previous experience: Please list your relevant (for example, in the area of the proposed project) previous experience in providing cultural heritage advice and survey participation.
 - We have worked with a vast number of Archaeologists in the subject area as have my family members. We can identify artefacts. We can do survey. We can peg test pits, wet & dry sieve, etc.

<!--[if !supportLists]-->4. <!--[endif]-->Schedule of Rates:

From: Andrew Crisp Aaron Olsen To:

Subject: FW: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document

Date: Monday, 12 October 2020 1:22:33 PM

Attachments: image.png

2732F8C9976B4B43AA74E67EFD2B8F66.png A0388978D064498B938E4EE10F5B3F94.png A03BD4E3934C465BABA7A5356E2AE75F.png 16214A3E43954A53BDEFC66BAF186667.png 0790A7B7C81E4DCF95A88011CF30EE48.png 45B11F44B2054B0AB96EE476F6344C6A.png

image007.png image008.png image009.png image010.png image011.png

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From: philip khan <philipkhan.acn@live.com.au>

Sent: Tuesday, 6 October 2020 2:51 PM To: Andrew Crisp <acrisp@urbis.com.au>

Subject: Re: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document

Dear Andrew,

I have reviewed your report for 754-770 & 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135. I believe the study area has high potential for Aboriginal cultural heritage, as Kemps creek is close by and may have room for Aboriginal finds. I believe further testing should be undertake as the area is highly significant to us Aboriginal people.

Warm regards

Kadibulla



From: Andrew Crisp <acrisp@urbis.com.au> Sent: Friday, 11 September 2020 1:41 PM

Cc: Balazs Hansel < <u>bhansel@urbis.com.au</u>>; Aaron Olsen < <u>aolsen@urbis.com.au</u>> Subject: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document

Good afternoon,

In accordance with Stage 2 and Stage 3 of the Aboriginal cultural heritage consultation requirements for proponents (DECCW 2010) please find attached the combined Stage 2 (presentation of information about the proposed project) and Stage 3 (gathering information about cultural significance) document for the proposed industrial development of 754-770 & 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135.

Please provide all comments by 5pm 9th October 2020.

Please supply any comments to the details provided below:

C/- Urbis Angel Place, Level 8, 123 Pitt Street, Sydney 2000 Primary Contact: Andrew Crisp P: 02 8233 7642

E: acrisp@urbis.com.au By: 9th October 2020.

Please reach out if you have any questions.

Kind regards,

ANDREW CRISP

SENIOR CONSULTANT **D** +61 2 8233 7642 T+61 2 8233 9900 E acrisp@urbis.com au













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From: To: **Aaron Olsen**

Subject: FW: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document

Date: Tuesday, 29 September 2020 2:57:46 PM Attachments: GPT MAMRE ROAD YURRANDAALI.pdf

YURRANDAALI AAMI Mobile Business Insurance Certificate of Currency SPD013721882.pdf

vurrandaali workers comp png

image002.png image004.png image006.png image008.png image010.png image017.png image018.png image019.png image020.png image021.png

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From: Bo Field <yurrandaali_cs@hotmail.com> Sent: Thursday, 24 September 2020 2:24 PM **To:** Andrew Crisp <acrisp@urbis.com.au>

Subject: Re: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document

Dear Andrew.

I on behalf of Yurrandaali have reviewed and agree with the methodology for this project. I have previously been involved and assisted in other projects within close proximity to the project area, such as the M12 Motorway and the WSA. Both projects were able to identify Aboriginal occupation in the Kemps Creek area and contained very high numbers of artefacts retrieved from PADs identified as Aboriginal camp sites and knapping sites, especially those areas within close proximity to the creeks. South Creek in particular is a very rich area and I believe that the project area definitely has potential to contain artefact scatters and PADs.

The Kemps Creek and surrounding areas were of great importance to Aboriginal people in the past and still remain very important to us RAPs whom share a connection with those who occupied the lands thousands of years ago. I would like the opportunity to be able participate and be included in both the field inspection and the test excavation program.

Please see our attached insurances and a PDF document containing our rates, experience and references.

If you require any more information please contact be on the details below.

Regards,

Bo Field - Manager Yurrandaali 0403 048 263 | <u>yurrandaali cs@hotmail.com</u>

From: Andrew Crisp <a crisp@urbis.com.au>
Sent: Friday, 11 September 2020 1:41 PM

Cc: Balazs Hansel < <u>bhansel@urbis.com.au</u>>; Aaron Olsen < <u>aolsen@urbis.com.au</u>>

Subject: P22231 - GPT Mamre Road, Kemps Creek - Stage 2 & 3 Consultation Document

Good afternoon,

In accordance with Stage 2 and Stage 3 of the *Aboriginal cultural heritage consultation requirements* for proponents (DECCW 2010) please find attached the combined Stage 2 (presentation of information about the proposed project) and Stage 3 (gathering information about cultural significance) document for the proposed industrial development of 754-770 & 784-786 Mamre Road, Kemps Creek, Lots 59 & 60 DP 259135.

Please provide all comments by 5pm 9th October 2020.

Please supply any comments to the details provided below:

C/- Urbis
Angel Place, Level 8, 123 Pitt Street, Sydney 2000
Primary Contact: Andrew Crisp

P: 02 8233 7642

E: acrisp@urbis.com.au
By: 9th October 2020.

Please reach out if you have any questions.

Kind regards,

ANDREW CRISP

SENIOR CONSULTANT D +61 2 8233 7642 T +61 2 8233 9900 E acrisp@urbis.com.au

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STAGE 4.2 – DRAFT ACHAR

From:

Cc: Aaron Olsen; Balazs Hansel

srandall@deerubbin.org.au; Reception@deerubbin.org.au; cazadirect@live.com; Bcc:

> amandahickey@live.com.au; James.eastwood@y7mail.com; barrabyculturalservices@gmail.com; barkingowlcorp@gmail.com; clive.freeman@y7mail.com; corroboreecorp@bigpond.com justinecoplin@optusnet.com.au; darug tribal@live.com.au; didgengunawalclan@yahoo.com.au;

gulagachts@gmail.com; gunjeewong@yahoo.com.au; philipkhan.acn@live.com.au;

merrigarn@hotmail.com; muragadi@yahoo.com.au; murrabidgeemullangari@yahoo.com.au; waarlan12@outlook.com; yulayculturalservices@gmail.com; yurrandaali_cs@hotmail.com; Butucarbin

Subject: P0022231/P0029273: 754-770 & 784-786 Mamre Road ACHA - Stage 4 RAP Review - Draft ACHAR & ATR

Friday, 9 July 2021 10:43:00 AM Date:

Attachments: image002.png

image004.png image006.png image008.png image010.png

Good morning

Thank you again for registering your interest in the above project. As part of Stage 4 of the Aboriginal Cultural Heritage Assessment (ACHA), we now provide a draft Aboriginal Cultural Heritage Assessment Report (ACHAR) and Archaeological Technical Report (ATR) for your consideration and comment.

The reports were too large to supply via email so please follow the link provided below to the Dropbox folder which will allow download of the reports. Please let me know if you have any issues accessing the reports.

Dropbox link - Draft ACHAR and ATR

https://www.dropbox.com/sh/p2ldaxpn5yc12xl/AADE5Tby8kiuso45IFHaMjzJa?dl=0

You will note that parts of the draft ACHAR and ATR include yellow highlighted text. These sections will be amended after completion of Stage 4 of the ACHA process.

Please provide any comments in relation to the draft ACHAR by COB 6 August 2021 to:

Andrew Crisp Senior Consultant Urbis Pty Ltd Level 8, 123 Pitt Street Sydney NSW 2000 E: acrisp@urbis.com.au

P: 02 8233 7642

If you have any questions, please reach out.

Kind regards

ANDREW CRISP

SENIOR CONSULTANT D +61 2 8233 7642 T+61 2 8233 9900 E acrisp@urbis.com.au















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STAGE 4.3 – RAP COMMENTS

From: <u>Carolyn .H</u>
To: <u>Andrew Crisp</u>

Subject: Re: P0022231/P0029273: 754-770 & 784-786 Mamre Road ACHA - Stage 4 RAP Review - Draft ACHAR &

ATR

Date: Thursday, 15 July 2021 5:25:16 PM

Attachments: image002.png

image004.png image006.png image008.png image010.png



Contact: Carolyn Hickey

M: 0411650057

E: Cazadirect@live.com

A: 10 Marie Pitt Place, Glenmore Park, NSW 2745

ACN: 639 868 876 ABN: 31 639 868 876

Hi,

I have reviewed the document and support the Information in the draft ACHAR and ATR.

Kind regards Carolyn Hickey

From: Andrew Crisp <acrisp@urbis.com.au>

Sent: Friday, 9 July 2021 10:43 AM

Cc: Aaron Olsen <aolsen@urbis.com.au>; Balazs Hansel
 bhansel@urbis.com.au>

Subject: P0022231/P0029273: 754-770 & 784-786 Mamre Road ACHA - Stage 4 RAP Review -

Draft ACHAR & ATR

Good morning

Thank you again for registering your interest in the above project. As part of Stage 4 of the Aboriginal Cultural Heritage Assessment (ACHA), we now provide a draft Aboriginal Cultural Heritage Assessment Report (ACHAR) and Archaeological Technical Report (ATR) for your consideration and comment.

The reports were too large to supply via email so please follow the link provided below to the Dropbox folder which will allow download of the reports. Please let me know if you have any issues accessing the reports.

Dropbox link - Draft ACHAR and ATR

https://www.dropbox.com/sh/p2ldaxpn5yc12xl/AADE5Tby8kiuso45lFHaMizJa?dl=0

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Please provide any comments in relation to the draft ACHAR by COB 6 August 2021 to:

Andrew Crisp Senior Consultant Urbis Pty Ltd Level 8, 123 Pitt Street Sydney NSW 2000

E: acrisp@urbis.com.au

P: 02 8233 7642

If you have any questions, please reach out.

Kind regards

ANDREW CRISP

SENIOR CONSULTANT **D** +61 2 8233 7642 T+61 2 8233 9900 E acrisp@urbis.com.au













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From: Gulaga
To: Andrew Crisp

Cc: <u>Aaron Olsen; Balazs Hansel</u>

Subject: Re: P0022231/P0029273: 754-770 & 784-786 Mamre Road ACHA - Stage 4 RAP Review - Draft ACHAR &

ATR

Date: Monday, 12 July 2021 5:01:39 PM

Attachments: <u>image002.png</u>

image004.png image006.png image008.png image010.png

Received, thank you.

Kind Regards Wendy Smith Cultural Heritage Officer Gulaga 0401 808 988

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On Fri, Jul 9, 2021 at 10:43 AM Andrew Crisp acrisp@urbis.com.au> wrote:

Good morning

Thank you again for registering your interest in the above project. As part of Stage 4 of the Aboriginal Cultural Heritage Assessment (ACHA), we now provide a draft Aboriginal Cultural Heritage Assessment Report (ACHAR) and Archaeological Technical Report (ATR) for your consideration and comment.

The reports were too large to supply via email so please follow the link provided below to the Dropbox folder which will allow download of the reports. Please let me know if you have any issues accessing the reports.

Dropbox link – Draft ACHAR and ATR

https://www.dropbox.com/sh/p2ldaxpn5yc12xl/AADE5Tby8kiuso45lFHaMjzJa?dl=0

You will note that parts of the draft ACHAR and ATR include yellow highlighted text. These sections will be amended after completion of Stage 4 of the ACHA process.

Please provide any comments in relation to the draft ACHAR by COB 6 August 2021 to:

Andrew Crisp

Senior Consultant

Urbis Pty Ltd

Level 8, 123 Pitt Street

Sydney NSW 2000

E: acrisp@urbis.com.au

P: 02 8233 7642

If you have any questions, please reach out.

Kind regards

ANDREW CRISP

SENIOR CONSULTANT D +61 2 8233 7642 T +61 2 8233 9900 E acrisp@urbis.com.au

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From: philip khan
To: Andrew Crisp

Subject: Re: P0022231/P0029273: 754-770 & 784-786 Mamre Road ACHA - Stage 4 RAP Review - Draft ACHAR & ATR

Date: Friday, 16 July 2021 11:18:26 AM

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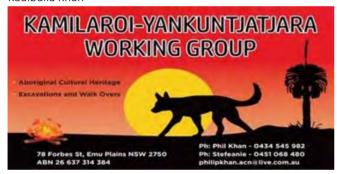
Dear Andrew,

Thank you for your report for ACHA for 754-770 & 784-786 Mamre Road. Here at K.Y.W.G we hold over 50 years of cultural knowledge, our aspiration is to conserve our cultural heritage and our aim is to pass on cultural knowledge. Aboriginal people have walked this land for tens of thousands of years and continue to do so. We follow the water ways as they provide resource, we hold a deep connection with mother earth and we are guided by the skies. Aboriginal people would camp, hunt, gather, practice lore and followed customs all across mother earth, we protect our sacred sites such as men's and woman's sites.

The whole study area is highly significant to our people as we occupied the land. There are water ways that hold significant to us and sky knowledge that is recognised to us. We would like to agree to your recommendations, we strongly push for salvage and we agree to your report. We look forward to working along side you on this project.

Kind Regards

Kadibulla Khan



From: Andrew Crisp <acrisp@urbis.com.au>

Sent: Friday, 9 July 2021 10:43 AM

Cc: Aaron Olsen <aolsen@urbis.com.au>; Balazs Hansel

 bhansel@urbis.com.au>

Subject: P0022231/P0029273: 754-770 & 784-786 Mamre Road ACHA - Stage 4 RAP Review - Draft ACHAR & ATR

Good morning

Thank you again for registering your interest in the above project. As part of Stage 4 of the Aboriginal Cultural Heritage Assessment (ACHA), we now provide a draft Aboriginal Cultural Heritage Assessment Report (ACHAR) and Archaeological Technical Report (ATR) for your consideration and comment.

The reports were too large to supply via email so please follow the link provided below to the Dropbox folder which will allow download of the reports. Please let me know if you have any issues accessing the reports.

Dropbox link - Draft ACHAR and ATR

https://www.dropbox.com/sh/p2ldaxpn5yc12xl/AADE5Tby8kiuso45IFHaMjzJa?dl=0

You will note that parts of the draft ACHAR and ATR include yellow highlighted text. These sections will be amended after completion of Stage 4 of the ACHA process.

Please provide any comments in relation to the draft ACHAR by COB 6 August 2021 to:

Andrew Crisp Senior Consultant Urbis Pty Ltd Level 8, 123 Pitt Street Sydney NSW 2000 E: acrisp@urbis.com.au

P: 02 8233 7642

If you have any questions, please reach out.

Kind regards

ANDREW CRISP

SENIOR CONSULTANT **D** +61 2 8233 7642 T +61 2 8233 9900 E acrisp@urbis.com au

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APPENDIX D ARCHAEOLOGICAL TECHNICAL REPORT

URBIS

ARCHAEOLOGICAL TECHNICAL REPORT

754-770 & 784-786 MAMRE ROAD, KEMPS CREEK

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Associate Director Balazs Hansel, MA Archaeology, MA History

Senior Archaeologist Andrew Crisp, BA Archaeology (Hons), M. ICOMOS
Assistant Archaeologist Owen Barrett, BA Archaeology and Paleoanthropology

Project Code P0029273

Report Number D01 - Issued 6 July 2021

F01 – Issued 6 August 2021 F02 – Issued 30 August 2021

Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.

All information supplied to Urbis in order to conduct this research has been treated in the strictest confidence. It shall only be used in this context and shall not be made available to third parties without client authorisation. Confidential information has been stored securely and data provided by respondents, as well as their identity, has been treated in the strictest confidence and all assurance given to respondents have been and shall be fulfilled.

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EXECUTIVE SUMMARY

Urbis Pty Ltd (Urbis) has been engaged by The GPT Group (the proponent) to produce an Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 & 784-786 Mamre Road, Kemps Creek (Lots 59 & 60 DP 259135) (hereafter referred as the 'subject area'). The ACHA informed the preparation of the Aboriginal Cultural Heritage Assessment Report (ACHAR), which will accompany State Significant Development (SSD) application for a warehousing and distribution centre within the subject area. This Archaeological Technical Report (ATR) has been prepared to accompany the ACHAR.

This ATR is intended to detail the methodology and results of test excavation. Refer to Section 1.2 of the ACHAR for detailed information regarding the proposed development at the subject area.

This ATR has been prepared in accordance with the following statutory guidelines:

- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) (CoP).

Test excavation was undertaken in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) to understand the nature, extent, integrity and research significance of the Aboriginal archaeological resource. The test excavation also aimed to sample the various landscape features for any potential sub-surface archaeological deposits.

The test excavation included:

- The Stage 1 and Stage 2 test excavation undertaken in the subject area (Lot 59 and 60 DP 259135) recovered 370 Aboriginal objects, all stone artefacts, from a total of 344 excavated test units (TUs) and expansion units (EUs).
- The highest densities of artefacts were located in Areas B and E (Lot 59 DP 259135).
- Area B contained 138 artefacts out of 129 excavated test pits and accounted for 37 % of the total subsurface assemblage.
- Area E contained 219 artefacts out of 91 excavated test pits and accounted for 59 % of the total subsurface assemblage.
- The remaining Areas A, C, D, F and G contained very low artefact densities
- All excavated material was wet sieved through a 5mm metal sieve station.

The predictive model formulated for the ACHAR anticipated that artefact scatters, PADs and isolated finds had moderate-high potential to occur in areas of low historical ground disturbance, on the basis of the distribution of artefact sites in the region as well as the landscape features present – including elevated ground/terraces associated with waterways and crests/spurs.

The results of the test excavation confirmed:

- Artefacts found during the test excavation program were predominantly concentrated adjacent to the waterway running through the subject area, specifically in Areas B and E. The entirety of the subsurface assemblage was situated within the alluvial terraces/lower slopes in proximity to the water course.
- Distance from water correlated with reduced artefact density. The crest landform portion of the subject area excavated (Area G) contained zero subsurface assemblage.
- The evidence gathered during the archaeological Stage 1 and Stage 2 test excavations indicates that Areas E and B contain evidence of a long term or repeat camp sites. The archaeological test excavations conducted at Open Areas B and E have identified moderate density, relatively intact subsurface deposits.
- Areas B and E of the 784-786 Mamre Road Subsurface Assemblage are considered to represent moderate scientific significance because of the moderate to high density of artefacts, reduction sequence and tool types.
- The remainder of 784-786 Mamre Road Subsurface Assemblage is considered to represent low scientific significance. Low density subsurface assemblage, common artefact types produced from local silcrete

resources. Distribution of artefacts was across the landscape and evident on all landforms predicted to contain subsurface deposits.

Isolate Find 01 (IF-1) is considered to represent low scientific significance. Common artefact and site type
in the Cumberland Plain discovered in a disturbed context.

The project can proceed in accordance with the following recommendations:

Recommendation 1 - Archaeological salvage excavation at Open Area B, Open Area E and Test Unit E66 post-SSDA approval and prior to construction

It is recommended that salvage excavation be conducted for Open Area B, Open Area E and Test Unit E66 to recover sub-surface artefacts which will be impacted as a part of the proposed development. The purpose of the salvage excavation is to provide conclusive data on the artefact typology, material type and subsurface density/extent.

It is recommended that this be undertaken as a condition of the SSDA approval and prior to construction.

The additional salvage report will be produced following the completion of the salvage excavation and provided as an addendum report.

Recommendation 2 - Surface Collection post-SSDA approval and prior to construction

Following SSDA approval and prior to construction surface collection of the isolated surface artefact IF1 must be undertaken in accordance with the Code of Practice and with the involvement of the Registered Aboriginal Parties.

Isolated Find 01 (IF-1) – GPS coordinates 0295424E, 6253350N

Recommendation 3 - Repatriation or Deposition in Keeping Place

Through consultation with the RAPs a decision will be made as to the destination for the artefacts recovered during both the test excavation and surface collection programs.

Care and Control of Artefacts

Through the ACHA process a determination must be made in consultation with the RAPs the final keeping place of the artefacts collected during the project. All project artefacts will be sorted and packaged in accordance with Australian Museum Standards.

The general options are:

Option 1: Deerubbin LALC enters into a Care and Control agreement and the artefacts are then stored at their designated keeping place (Old Parramatta Gaol).

Option 2: Repatriation of artefacts to 'Country'. Following construction the artefacts would be reburied within the subject area and the location registered on AHIMS.

Option 3: Designation of alternative keeping place such as local museum, Australian Museum or with other RAP group.

Recommendation 4 – Aboriginal Cultural Heritage Induction

It is recommended that induction materials be prepared for inclusion in site inductions for any contractors working at the subject area. The induction material should include an overview of the types of sites to be aware of (i.e. artefact scatters or concentrations of shells that could be middens), obligations under the NPW Act, and the requirements of an archaeological finds' procedure (refer below). This process should be included in the Construction Environmental Management Plan (CEMP) and any site management plans.

The induction material may be paper based, included in any hard copy site management documents; or electronic, such as "PowerPoint" for any face to face site inductions.

Recommendation 5 - Archaeological Chance Find Procedure

Although considered highly unlikely, should any archaeological deposits be uncovered during any site works, a procedure must be implemented. The following steps must be carried out:

1. All works stop in the vicinity of the find. The find must not be moved 'out of the way' without assessment.

- 2. Site supervisor, or another nominated site representative must contact either the project archaeologist (if relevant) or DPC to contact a suitably qualified archaeologist.
- 3. The nominated archaeologist examines the find, provides a preliminary assessment of significance, records the item and decides on appropriate management, in conjunction with the RAPs for the project. Such management may require further consultation with DPC, preparation of a research design and archaeological investigation/salvage methodology and preparation of AHIMS Site Card.
- 4. Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required, and further archaeological investigation undertaken.
- 5. Reporting may need to be prepared regarding the find and approved management strategies. Any such documentation should be appended to this ACHAR and revised accordingly.
- 6. Works in the vicinity of the find can only recommence upon relevant approvals from DPC.

Recommendation 6 - Human Remains Procedure

In the unlikely event that human remains are uncovered during any site works, the following must be undertaken:

- 1. All works within the vicinity of the find immediately stop.
- 2. Site supervisor or other nominated manager must notify the NSW Police and DPC.
- 3. The find must be assessed by the NSW Police, and may include the assistance of a qualified forensic anthropologist.
- 4. Management recommendations are to be formulated by the Police, DPC and site representatives.
- 5. Works are not to recommence until the find has been appropriately managed.

Recommendation 7 - RAP consultation

A copy of the final ACHAR was provided to all Project RAPs on 30 August 2021. Ongoing consultation with RAPs should occur as the project progresses, to ensure ongoing communication about the project and key milestones, and to ensure the consultation process does not lapse, particularly with regard to consultation should the CFP be enacted.

INTRODUCTION AND BACKGROUND

PROJECT BACKGROUND 1.1.

Urbis Pty Ltd (Urbis) has been engaged by The GPT Group (the proponent) to produce an Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 & 784-786 Mamre Road, Kemps Creek (Lots 59 & 60 DP 259135) (hereafter referred as the 'subject area'). The ACHA informed the preparation of the present Aboriginal Cultural Heritage Assessment Report (ACHAR), which will accompany State Significant Development (SSD) application for a warehousing and distribution centre within the subject area. This Archaeological Technical Report (ATR) has been prepared to accompany the ACHAR.

The subject area is within the City of Penrith Local Government Area (LGA). The subject area covers approximately 330,000 m² and is bounded by Mamre Road and Lot 61 DP 259135 to the west, Lot 1 DP 104958 to the north, Lots 56-58 DP 259135 to the south and Lots 34-37 DP 258949 and Lot 40 DP 708347 to the east. The immediate surrounds comprise predominantly semi-rural properties.

1.2. PROPOSED DEVELOPMENT

The proposed development includes site preparation works, construction and use of five (5) warehouse and distribution buildings, retaining walls, stormwater and associated works, internal road network, associated carparking, signage and landscaping (Figure 3).

The development is proposed to comprise a first stage of works, to be commenced by 2022. The first stage will comprise site preparation works, including bulk earthworks, services and associated landscaping, as well as the construction of two (2) warehouses. Construction of a further three (3) warehouses will be subject to future DAs.

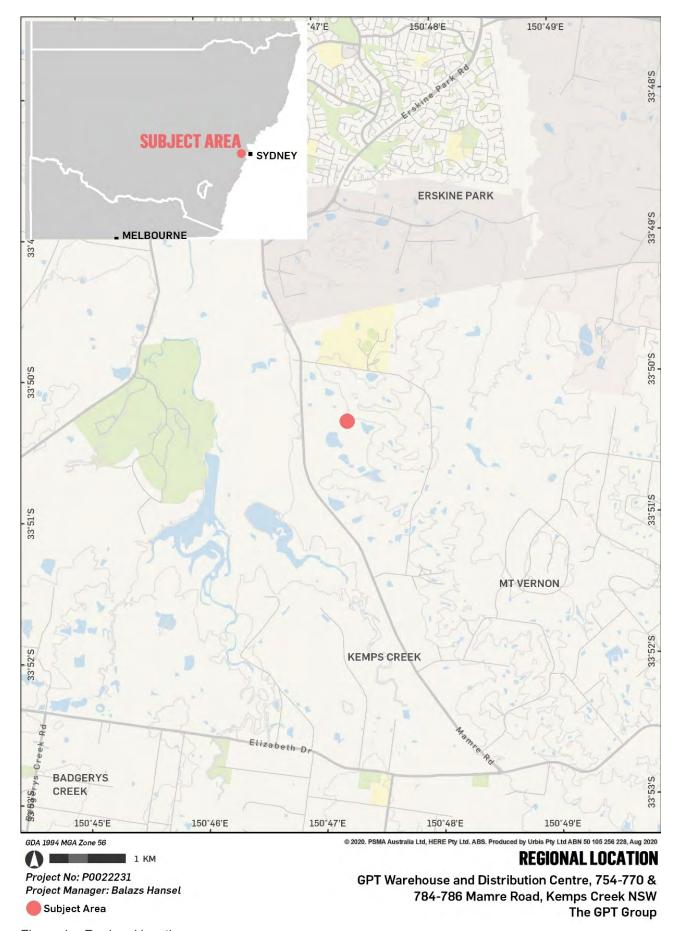


Figure 1 – Regional location



Figure 2 – Subject area



Figure 3 – Proposed SSDA Masterplan Source: The GPT Group

OBJECTIVES AND REQUIREMENTS OF THIS REPORT 1.3.

This ATR has been prepared in accordance with the following statutory guidelines:

- Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines).
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) (the Code of Practice).
- The Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013 (Burra Charter).

This ATR has been prepared to address the following objectives:

- Investigate the nature, spatial and stratigraphical extent, condition and integrity of any archaeological deposits that may be present.
- If archaeological deposits are identified, apply relevant research questions to interpret the finds and results in context of local and regional archaeological modelling.

This report complies with the requirements of the Code of Practice. Please refer to Table 1 for details on where each requirement is met. Please note, the below table refers to sections of the accompanying ACHAR for some requirements. Where this is the case, the ACHAR provides a more detailed overview of the requirement, which will be summarised within this ATR. The relevant sections of both the ACHAR and the present ATR are indicated.

Table 1 - Code of Practice Requirements

Requirement	Response
1 – Review previous archaeological work	ACHAR Section 2.1.2
	ATR Section 3
2 – Review the Landscape Context	ACHAR Section 2.2 – 2.3
	ATR Section 2
3 – Summarise and discuss the local and regional	ACHAR Section 2.1.1 – 2.1.2
character of Aboriginal land use and its material traces.	ATR Section 3
4 – Predict the nature and distribution of evidence	ACHAR Section 2.4
	ATR Section 4
5 – Archaeological Survey	ACHAR Section 2.8
	ATR Section 6.1
6 – Site definition	ATR Section 7.1 & Appendix C
7 – Site recording	ATR Section 7.1 & Appendix C

Requirement	Response	
8 – Location information and geographic reporting	ATR Section 7.1 & Appendix C	
9 – Record survey coverage data	ACHAR Section 2.8	
	ATR Section 6.1	
10 – Analyse survey coverage	ACHAR Section 2.8	
	ATR Section 6.1	
11 – Archaeological Report content and format	The ACHAR and ATR have been formatted in accordance with the requirements of the Code of Practice.	
12 – Records	Records have been stored and will be made available upon request.	
13 – Notifying DECCW and reporting	This assessment has complied with the Code of Practice. Urbis will provide all information on request.	
14 – Test Excavation which is not excluded from the definition of harm	No excavation was undertaken in any of the identified areas or exclusion zones.	
15 – Pre-Conditions to carrying out Test excavation.	Urbis has complied with all requirements for notification, strategy and consultation prior to commencing excavation.	
16 – Test excavation that can be carried out in accordance with this code.	Test excavation was undertaken in accordance with the requirements of the Code of Practice. Management protocols for objects uncovered are in accordance with the protocols.	
17 – When to stop test excavation.	Test excavation was ceased following the testing of an adequate sample of the subject area.	
18 – Artefact recording.	Artefact recording complies with the requirements of the Code of Practice.	
19 – Attribute recording	Attribute recording complies with the requirements of the Code of Practice.	
20 – Photography and drawing	Photos of each pit are also reproduced in Appendix B of this report. Pertinent section drawings are provided in Appendix C	

ABORIGINAL COMMUNITY CONSULTATION 1.4.

Consultation with Aboriginal community was undertaken in accordance with the Consultation Guidelines as part of the ACHA process. A brief summary of the consultation to date is included in Table 2 below. Full details of the consultation process followed is included in Section 3 of the accompanying ACHA.

Table 2 - Consultation summary table

Stage	Date commenced	Date completed	Comment
1.1	25 August 2020	26 August 2020	The search identified the subject area as freehold tenure, which extinguishes Native Title.
1.2	6 July 2020	28 July 2020	A total of 59 Aboriginal groups and individuals with a potential interest in the subject area were identified.
1.3	29 July 2020	26 August 2020	A total of 17 groups registered interested in the project (see Table 3 below).
1.6	11 September 2020	11 September 2020	A list of all Registered Aboriginal Parties (RAPs) was provided to the DPC and Deerubbin Local Aboriginal Land Council.
2	11 September 2020	11 September 2020	An information pack, which included a brief introduction to the project, the project location, and AHIMS search result to provide understanding of the registered cultural sites in the local area, was sent to all RAPs via email.
3	11 September 2020	9 October 2020	Nine responses were received to the Stage 2 information pack. These responses are included in the ACHAR.
4	9 July 2021	6 August 2021	Three comments received. These responses are included in the ACHAR.

The Registered Aboriginal Parties (RAPs) who indicated an interest in the project during Stage 1.2 of the community consultation process are listed in Table 3 below.

Table 3 - Registered Aboriginal Parties (RAPs)

Name	Contact
Aragung Aboriginal Cultural Heritage Site Assessments	Jamie Eastwood
Barraby Cultural Services	Lee Field
Barking Owl Aboriginal Corporation	Jody Kulakowski
Butucarbin Aboriginal Corporation	Jennifer Beale
Clive Freeman	Clive Freeman
Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson

Name	Contact
Darug Custodian Aboriginal Corporation	Justine Coplin
Dharug Ngurra Aboriginal Corporation	Dirk Schmitt
Didge Ngunawal Clan	Lilly Carroll / Paul Boyd
Gulaga	Wendy Smith
Gunjeewong Cultural Heritage Aboriginal Corporation	Cherie Carroll Turrise
Kamilaroi Yankuntjatjara Working Group	Phil Khan
Merrigarn	Shaun Carroll
Muragadi Heritage Indigenous Corporation	Jesse Johnson
Murra Bidgee Mullangari Aboriginal Corporation	Darleen Johnson / Ryan Johnson
Wailwan Aboriginal Group	Philip Boney
Yulay Cultural Services	Arika Jalomaki
Yurrandaali Pty Ltd	Bo Field

1.5. PERSONNEL AND AUTHORSHIP

This ATR has been prepared by Owen Barrett, Urbis Consultant Archaeologist, and Andrew Crisp, Urbis Senior Archaeologist. Review and quality control were undertaken by Balazs Hansel, Urbis Associate Director Archaeology.

Owen Barrett holds a Bachelor of Arts (Archaeology and Paleoanthropology) and a Diploma in Indigenous Archaeology from the University of New England. Andrew Crisp holds a Bachelor of Arts (Honours - First Class in Archaeology) from the University of Sydney. Balazs Hansel holds a Masters (History) from the University of Szeged in addition to Masters (Archaeology and Museum Studies) from the University of Szeged and is currently completing a PhD (Archaeology) at the University of Sydney.

The personnel involved in the test excavations are listed in Tables 4 and 5.

Table 4 - Lot 60 DP259135Test Excavation Team

Name	Organisation	Role
Andrew Crisp	Urbis	Excavation Director
Aaron Olsen	Urbis	Archaeologist & Recording
Steven Knight	Deerubbin Local Aboriginal Land Council	Cultural Heritage Officer
Tevita Tai	Deerubbin Local Aboriginal Land Council	Cultural Heritage Officer

Table 5- Lot 59 DP259135Test Excavation Team

Name	Organisation	Role		
Andrew Crisp	Urbis	Excavation Director		
Meggan Walker	Urbis	Archaeologist & Recording		
Owen Barrett	Urbis	Archaeologist & Recording		
Phil Boney	Wailwan Aboriginal Group	Cultural Heritage Officer		
Braydon MacDougall	Wailwan Aboriginal Group	Cultural Heritage Officer		
Joshua MacDougall	Wailwan Aboriginal Group	Cultural Heritage Officer		
Kyleiah Caldeel	Wailwan Aboriginal Group	Cultural Heritage Officer		
Joseph Hampton	Wailwan Aboriginal Group	Cultural Heritage Officer		
Jamie Currell	Kamilaroi Yankuntjatjara Working Group	Cultural Heritage Officer		
Grant Fenton	Kamilaroi Yankuntjatjara Working Group	Cultural Heritage Officer		
Kadibulla Khan	Kamilaroi Yankuntjatjara Working Group	Cultural Heritage Officer		
Ralph Hampton	Kamilaroi Yankuntjatjara Working Group	Cultural Heritage Officer		
Belinda Jackson	Kamilaroi Yankuntjatjara Working Group	Cultural Heritage Officer		

ENVIRONMENTAL CONTEXT

The environmental context for the study area is elaborated in Sections 2.2 and 2.3 of the accompanying ACHAR. Presented here is a summary as identifies through desktop assessment and field survey.

- The subject area is located within the Sydney Basin, upon the Cumberland Plain. The Cumberland Plain lies on Triassic shales and overlain by Hawkesbury sandstone. There are two soil landscapes identified within the subject area (Figure 13), the Luddenham soil landscape and the Blacktown soil landscape.
- The subject area contains one tributary of South Creek, which runs through the west of the subject area. The subject area is also approximately 200m north of another tributary of South Creek, which itself runs approximately 1.2km to the west. The subject area straddles the two catchments of South Creek (approximately 1.5km to the west) and Ropes Creek (approximately 1.5km to the east).
- The subject area has been subjected to localised moderate to high levels of ground disturbance (dam and building construction), while the ma
- The majority of the subject area has been subject to low levels of physical impact (vegetation clearance and pastoral uses).

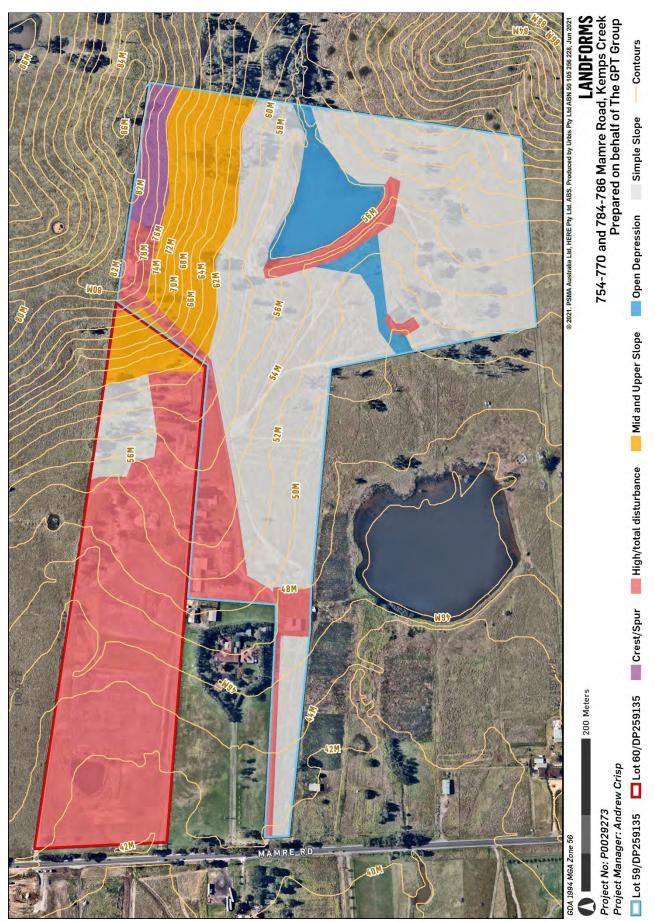


Figure 4 – Landforms and areas of disturbance within the subject area

ARCHAEOLOGICAL CONTEXT

A detailed discussion of the archaeological context of the subject area is provided in Section 2 of the accompanying ACHAR. This includes the search of the Aboriginal Heritage Information Management System (AHIMS) previous archaeological investigations pertinent to the subject area and broader region. Presented here is a summary of the archaeological context of the subject area:

- There are four Aboriginal sites registered within the subject area and a further four registered as being located in close proximity to the subject area.
- Each of the four sites within the recorded in the AHIMS register as being within the subject area and two of those recorded as being in close proximity to the subject area have incorrect GPS coordinates and, according to the details of the sites, are located approximately 1 km to north, well outside of the subject
- There are two correctly registered Aboriginal sites in the immediate vicinity of the subject area: an isolated find (AHIMS ID# 45-5-4102) and an artefact scatter with an associated PAD (AHIMS ID# 45-5-5186).
- The subject area should be considered archaeologically sensitive as a result of registered Aboriginal sites and the landform within (ridge line, number of low rises adjacent to open depressions) and the registered sites in the vicinity.
- Archaeological sites can be found across a variety of landforms in the Cumberland Plain with more frequency in the vicinity of permanent water. Of particular archaeological potential are lower slopes and river terraces.
- Previous archaeological investigation within the subject area was insufficient in identifying the significance/extent as well as the appropriate management approach to both identified and potential archaeological sites.
- Recent archaeological investigations immediately adjacent to the subject area have identified a complex subsurface archaeological assemblage across a number of landforms despite minimal surface archaeological expressions such as isolated finds and scatters.

It should be noted that the AHIMS register does not represent a comprehensive list of all Aboriginal objects or sites in a specified area. It lists recorded sites identified during previous archaeological survey effort. The wider surroundings of the subject area have experienced various levels and intensity of archaeological investigations during the last few decades. Most of the registered sites have been identified through targeted, predevelopment surveys for infrastructure and maintenance works, with the restrictions on extent and scope of those developments. Archaeological sites can be found across a variety of landforms in the Cumberland Plain, with greater frequency in the vicinity of waterways, lower slopes and river terraces.

PREDICTIVE MODEL 4_

The following predictive model reproduced in Table 6 was developed to inform the accompanying ACHAR. For a detailed description on the development of the predictive model, refer to Section 2.4 of the accompanying ACHAR.

The predictive model took accounts for the results of the desktop study and field survey including:

- Detailed analysis of previous archaeological investigations within the same Region.
- Presence or absence of landscape features that present potential for archaeological resources (human occupation, use) such as raised terraces adjacent to a water source.
- Analysis of the geology and soil landscape within the subject area which allows for a determination to be made of the type of raw material that would have been available for artefact production (silcrete, tuff, quartz etc) and the potential for the accumulation of archaeological resource within the subject area.
- Investigation of and determination of the level of disturbance/historical land use within the subject area which may impact on or remove entirely any potential archaeological material.

In summary, due to the hydrology and archaeologically sensitive landscape features, the subject area retains moderate to high potential for the presence of Aboriginal archaeological resources, isolated finds, artefact scatters and/or PADs. This informed the decision to undertake archaeological test excavation at the subject area in accordance with The Code.

Table 6 - Predictive Model

Site Type	Description	Likelihood	Justification
Artefact Scatters	Artefact scatters represent past Aboriginal subsistence and stone knapping activities and include archaeological remains such as stone artefacts and hearths. This site type usually appears as surface scatters of stone artefacts in areas where vegetation is limited, and ground surface visibility increases. Such scatters of artefacts are also often exposed by erosion, agricultural events such as ploughing, and the creation of informal, unsealed vehicle access tracks and walking paths. These types of sites are often located on dry, relatively flat land along or adjacent to rivers and creeks. Camp sites containing surface or subsurface deposit from repeated or continued occupation are more likely to occur on elevated ground near the most permanent, reliable water sources. Flat, open areas associated with creeks and their resource-rich surrounds would have offered ideal camping areas to the Aboriginal inhabitants of the local area.	Moderate to high	 The subject area contains archaeologically sensitive landforms (raised terraces, hill-slopes adjacent to watercourse). The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. The level of historical land disturbance within the majority of the subject are is low, increasing the potential that these site types would remain in situ.
Isolated Finds	Isolated finds represent artefactual material in singular, one off occurrences. Isolated finds are generally indicative of stone tool production, although can also include contact sites. Isolated finds may represent a single item discard event or be the result of limited stone knapping activity. The presence of such isolated artefacts may indicate the presence of a more extensive, in situ buried archaeological deposit, or a larger deposit obscured by low ground visibility. Isolated artefacts are likely to be located on landforms associated with past Aboriginal activities, such as ridgelines that would have provided ease of movement through the area, and level areas with access to water, particularly creeks and rivers.	Moderate to high	 The subject area contains archaeologically sensitive landforms (raised terraces, hill-slopes adjacent to watercourse). The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. The level of historical land disturbance within the majority of the subject are is low, increasing the potential that these site types would remain in situ.
PAD	Potential Archaeological Deposits (or PADs) are areas where there is no surface expression of stone artefacts, but due to a landscape feature there is a strong likelihood that the area will contain buried deposits of	Moderate to high	 The subject area contains archaeologically sensitive landforms (raised terraces, hill-slopes adjacent to watercourse).

Site Type	Description	Likelihood	Justification
	stone artefacts. Landscape features which may feature in PADs include proximity to waterways, particularly terraces and flats near 3rd order streams and above; ridge lines, ridge tops and sand dune systems.		 The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. The level of historical land disturbance within the majority of the subject are is low, increasing the potential that these site types would remain in situ.
Scarred Trees	Tree bark was utilised by Aboriginal people for various purposes, including the construction of shelters (huts), canoes, paddles, shields, baskets and bowls, fishing lines, cloaks, torches and bedding, as well as being beaten into fibre for string bags or ornaments (sources cited in Attenbrow 2002: 113). The removal of bark exposes the heart wood of the tree, resulting in a scar. Trees may also have been scarred in order to gain access to food resources (e.g. cutting toeholds so as to climb the tree and catch possums or birds), or to mark locations such as tribal territories. Such scars, when they occur, are typically described as scarred trees. These sites most often occur in areas with mature, remnant native vegetation. The locations of scarred trees often reflect an absence of historical clearance of vegetation rather than the actual pattern of scarred trees. Carved trees are different from scarred trees, and the carved designs may indicate totemic affiliation (Attenbrow 2002: 204); they may also have been carved for ceremonial purposes or as grave markers.	Nil	Historical vegetation clearance is reasonably extensive, however, in the eastern and northern portions of the subject area there are stands of mature trees which may have potential for human modification.
Axe Grinding Grooves	Grinding grooves are the physical evidence of tool making or food processing activities undertaken by Aboriginal people. The manual rubbing of stones against other stones creates grooves in the rock; these are usually found on flat areas of abrasive rock such as sandstone. They may be associated with creek beds, or water sources such as rock pools in creek beds and on platforms, as water enables wet-grinding to occur.	Nil	 It is unlikely that the exposed sandstone outcrops required for this site type would occur within the subject area.

Site Type	Description	Likelihood	Justification
Bora/Ceremonial	Aboriginal ceremonial sites are locations that have spiritual or ceremonial values to Aboriginal people. Aboriginal ceremonial sites may comprise natural landforms and, in some cases, will also have archaeological material. Bora grounds are a ceremonial site type, usually consisting of a cleared area around one or more raised earth circles, and often comprised of two circles of different sizes, connected by a pathway, and accompanied by ground drawings or mouldings of people, animals or deities, and geometrically carved designs on the surrounding trees.	Nil	 Historical land-use in the subject area is likely to have destroyed any bora grounds or ceremonial sites.
Burial	Aboriginal burial of the dead often took place relatively close to camp site locations. This is due to the fact that most people tended to die in or close to camp (unless killed in warfare or hunting accidents), and it is difficult to move a body long distance. Soft, sandy soils on, or close to, rivers and creeks allowed for easier movement of earth for burial; and burials may also occur within rock shelters or middens. Aboriginal burial sites may be marked by stone cairns, carved trees or a natural landmark. Burial sites may also be identified through historic records or oral histories.	Low	 The subject area is not situated on soft, sandy soils. The subject area does not include any rock shelters.
Contact site	These types of sites are most likely to occur in locations of Aboriginal and settler interaction, such as on the edge of pastoral properties or towns. Artefacts located at such sites may involve the use of introduced materials such as glass or ceramics by Aboriginal people or be sites of Aboriginal occupation in the historical period.	Low	 Contact sites in the area are possible due to early European settlement. Historical land-use in the subject area reduces the potential for these sites.
Midden	Midden sites are indicative of Aboriginal habitation, subsistence and resource extraction. Midden sites are expressed through the occurrence of shell deposits of edible shell species often associated with dark, ashy soil and charcoal. Middens often occur in shelters, or in eroded or collapsed sand dunes. Middens occur along the coast or in proximity to waterways, where edible resources were extracted. Midden may represent a single meal or an accumulation over a long period of time	Nil to low	 The subject area is not situated near the coast. The lower order tributary within the subject area is not conducive to this type of site.

Site Type	Description	Likelihood	Justification
	involving many different activities. They are also often associated with other artefact types.		
Art	Art sites can occur in the form of rock engravings or pigment on sandstone outcrops or within shelters (discussed below). An engraving is some form of image which has been pecked or carved into a rock surface. Engravings typically vary in size and nature, with small abstract geometric forms as well as anthropomorphic figures and animals also depicted (DECCW, 2010c). In the Sydney region engravings tend to be located on the tops of Hawkesbury Sandstone ridges where vistas occur. Pigment art is the result of the application of material to a stone to leave a distinct impression. Pigment types include ochre, charcoal and pipeclay. Pigment art within the Sydney region is usually located in areas associated with habitation and sustenance.	Nil to low	 The subject area does not include any shelters. It is unlikely that the exposed sandstone outcrops required for this site type would occur within the subject area.
Shelters	Shelter sites are places of Aboriginal habitation. They take the form of rock overhangs which provided shelter and safety to Aboriginal people. Suitable overhangs must be large and wide enough to have accommodated people with low flooding risk. Due to the nature of these sites, with generic rock over hangs common particularly in areas with an abundance of sandstone, their use by Aboriginal people is generally confirmed through the correlation of other site types including middens, art, PAD and/or artefactual deposits.	Nil	 The subject area does not include any shelters. It is unlikely that the exposed sandstone outcrops required for this site type would occur within the subject area.

FIELDWORK AIMS AND PROCEDURES 5.

5.1. RESEARCH METHODOLOGY

The below Archaeological Research Design (ARD) has been developed to provide a framework to investigate the nature and origin of the potential archaeological resource within the subject area.

This ARD has been designed based on the results of the Aboriginal Cultural Heritage Assessment Report (ACHAR), particularly the results of the archaeological background research and predictive model.

This ARD has been prepared to cover the following objectives:

- Investigate the nature, spatial and stratigraphical extent, condition and integrity of any archaeological deposits that may be present.
- If archaeological deposits are identified, apply relevant research questions to interpret the finds and results in context of local and regional archaeological modelling.

In order to fulfil the objectives of the ARD, the following indicative research questions have been formulated:

- Is there a subsurface archaeological deposit present? 1.
- 2. If an archaeological deposit present, how can it be interpreted?

What is the spatial and vertical extent of the deposit?

What is the integrity and condition of the deposit?

What are the physical attributes and compositions of the deposit (e.g. stone artefacts, features, remains of original environment, contact period artefacts)?

What are the characteristics of the stone artefact assemblage? What types of artefacts are present and what specialisation if any can be detected in the assemblage?

Does the archaeological deposit have evidence of intra-site patterning or various occupational periods?

Should faunal and/or shell material be located, what species present were utilised by Aboriginal people?

3. Can the archaeological deposit be interpreted in a local context?

Are there similarities or differences with nearby archaeological sites?

Is there evidence of connection to nearby sites in terms of raw material, composition and nature of the assemblage?

Can the archaeological deposit be interpreted in the regional context? 4.

Where did the raw materials originate from?

Is there any indication of trade in connection of raw material procurement?

How does the assemblage compare to other archaeological sites within the region?

5. Do the results if the archaeological excavation changes the scientific and cultural significance of the

What is the scientific and cultural value of the assemblage?

How do the Aboriginal stakeholders view the cultural value of the deposit and assemblage?

5.2. TEST EXCAVATION METHODOLOGY

The test excavations will be undertaken in line with the Code of Practice in order to understand the nature, extent, integrity and research significance of the Aboriginal archaeological resource. The test excavation will also aim to sample the various landscape features located within the subject area for any potential sub-surface archaeological deposits.

This section presents the methodology for the proposed test excavation programs. According to the Code of Practice "test excavations should be sufficiently comprehensive to allow characterisation of the Aboriginal objects present without having a significant impact on the archaeological value of the subject area".

The test excavation will include:

- The initial approach to testing will include the excavation of 50 cm by 50 cm test pits in various transects on a 10m and 20m grid system. The exact location of the transects and test pits have been informed by the results of the archaeological survey and the predictive model of the ACHAR.
- The location and number of transects and test pits will be further adjusted by on-site observation of localised disturbance and in consultation with the Aboriginal officers on site.
- All excavated material will be wet sieved through a 5mm metal sieve station.

5.2.1. Test Excavation Stage 1

The test pits shall be excavated by hand (inclusive of trowels, spades and other hand tools) along each transects at intervals of 10m.

The first test pit within each transect and/or landform shall be excavated in 5cm spits to establish the depth and nature of soil and any stratigraphy present. Subsequent test pits conducted within the same transect and/or landform and/or potential archaeological deposit shall then be excavated in either 10cm spits or stratigraphic units (whichever is smaller) to the base of Aboriginal object-bearing units being the removal of the A-horizon soil deposit down to the sterile clay layer (B-horizon).

All test pits will be excavated using the above methods in each transect before any further adjustment is made to the transect or additional pits are excavated.

All excavated soil will be sieved through 5mm nested sieves using wet sieving method.

5.2.2. Test Excavation Stage 2

Following the completion of Stage 1, the Excavation Director (Andrew Crisp) will make the decision whether it is necessary to excavate additional 50cm by 50 cm test pits in order to identify the spatial extent of identified archaeological resources, or existing pits will be expanded to further excavate those pits that yielded archaeological material or features to better understand the nature, extent and integrity of the identified archaeological resources.

Test pits may be expanded into a 1m x 1m square or other arrangements in line with the Code of Practice at the discretion of the Excavation Director. The additional pits would be excavated in 50cm x 50cm test pit units, to further understand the archaeological resource.

Additional 50cm x 50cm test pits may be placed at an interval of 5 or 10m (or other justifiable and regular spacing appropriate to the scale of the area being tested) from the test pits that yielded archaeological resource to test further the immediate area for artefact concentrations and/or archaeological features, or to define a site boundary. These additional test pits would be excavated using the same methodology outlined above.

Expansion test pits may be combined and excavated as necessary in 50cm x 50cm units for the purposes of further understanding site characteristics. Note that under the Code of Practice, the maximum area that can be excavated in any one continuous area is 3m².

5.2.3. General Procedures

The Code of Practice dictates that the maximum surface area of all test excavation units must be no greater than 0.5% of the PAD or landform unit area being investigated.

All excavated soil shall be sieved in 5 mm sieves using wet sieving method.

Artefacts will be collected, bagged and tagged with a unique identification number according to test pit location, spit or context number.

Each test pit shall be recorded using standard archaeological procedure, including standardised recording forms, coordinates collected using a GPS, photographic recording with scale and stratigraphic / soil profile for each test pit shall be recorded in scale drawings as required by Code of Practice recording requirements.

Test excavation units shall be backfilled as soon as practicable, to be organised by the proponent. Alternatively, if manual collapse of the test pits is deemed appropriate this will be agreed to prior to the test excavation program.

An AHIMS site card shall be prepared and submitted to the AHIMS Registrar for any new sites identified during test excavations.

An AHIMS Site Impact Recording form shall be completed and submitted to the AHIMS Registrar for any sites impacted during test excavations.

In the unlikely event that suspected human remains are identified works will immediately cease and the NSW Police and DPC will be notified.

Test excavations shall cease when enough information* has been recovered to adequately characterise the objects/assemblage(s) present with regard to their nature and significance. Enough information is defined by DPC as meaning "that the sample of excavated material clearly and self-evidently demonstrates the deposit's nature and significance. This may include things like locally or regionally high object density: presence of rare or representative objects: presence of archaeological features: or locally or regionally significant deposits stratified or not" (DECCW 2010a).

Details of the excavation in relation to Requirement 16a of the Code of Practice (DECCW, 2011) are discussed below. As Aboriginal archaeological deposits were located, the Code of Practice requirement 16b is relevant to this assessment and discussed below.

Requirement 16a - Test Excavations

1. Test excavation units must be placed on a systematic grid appropriate to the scale of the area either PAD or site - being investigated e.g. 10 m intervals, 20 m intervals, or other justifiable and regular spacing.

Transects were laid to sample the site and landforms present including upper, lower and mid slopes, the ridgeline, spurs, and areas near the drainage line.

2. Any test excavation point must be separated by at least 5 m.

No test pits were located within 5m of each other. All test pits were separated by a minimum of 10m.

3. Test excavations units must be excavated using hand tools only.

The test excavation was conducted using hand tools for all pits.

4. Test excavations must be excavated in 50 cm x 50 cm units.

All test excavation units were excavated in 50 cm x 50 cm units.

- 5. Test excavations units may be combined and excavated as necessary to understand the site characteristics, however:
- i) the maximum continuous surface area of a combination of test excavation units at any single excavation point conducted in accordance with point 1 (above) must be no greater than 3 m²

Adhered to in both Stage 1 test excavation and Stage 2 extension excavations.

ii) the maximum surface area of all test excavation units must be no greater than 0.5% of the area either PAD or site - being investigated.

Prominent landforms within the study were the focus of test excavations within the site. Within the areas which excavations took place there was a minimum of 10m spacing between test excavation units. Therefore the surface area investigated was less than 0.5% of the site and PADs being investigated.

6. Where the 50 cm x 50 cm excavation unit is greater than 0.5% of the area then point 5 (ii) (above) does not apply.

Not relevant in this case.

7. The first excavation unit must be excavated and documented in 5 cm spits at each area – either PAD or site – being investigated. Based on the evidence of the first excavation unit, 10 cm spits or sediment profile/stratigraphic excavation (whichever is smaller) may then be implemented.

The first 50 cm x 50 cm excavation unit at each landform was excavated in 5cm spits. As no distinct stratigraphic layers were identified proceeding excavation units were excavated in 10 cm spits.

8. All material excavated from the test excavation units must be sieved using a 5 mm aperture wiremesh sieve.

All excavated material was separated into spits using buckets and sieved using a 5mm aperture wiremesh metal sieve station.

9. Test excavation units must be excavated to at least the base of the identified Aboriginal objectbearing units, and must continue to confirm the soils below are culturally sterile.

All test excavation units were excavated into cultural sterile basal clay.

11. Photographic and scale-drawn records of the stratigraphy/soil profile, features and informative Aboriginal objects must be made for each single excavation point.

Each pit was recorded with basal and section photographs and spit recording sheets describing the soils, depth, inclusions and presence/absence of artefacts. Soil samples were taken from one pit in each transect. Recording sheets and soil samples are stored physically at the Urbis office in a locked tambour, and digitally on One Drive.

12. Test excavations units must be backfilled as soon as practicable.

Each pit was backfilled through collapsing at the completion of the excavation program. Open Areas B and E remain open and fenced off until the post-excavation analysis for this report could be undertaken and a determination as to whether salvage excavations are warranted.

13. Following test excavation, an Aboriginal Site Impact Recording form must be completed and submitted to the AHIMS Registrar as soon as practicable, for each AHIMS site that has been the subject of test excavation in accordance with the requirements of this Code. The DECCW Aboriginal Site Impact Recording Form is available on the DECCW website.

ASIR form pending.

Requirement 16b - Objects Recovered During Test Excavations

Any Aboriginal objects that are moved during test excavation must be reburied as soon as practicable in a secure temporary storage location in accordance with Requirement 26 pending any agreement reached as to the long-term management of the salvaged Aboriginal objects.

The person carrying out the test excavation is responsible for ensuring that procedures are put in place so that Aboriginal objects that are reburied are not harmed.

The location of the secure temporary storage location must be submitted to AHIMS with a site update record card for the site(s) in question.

The Aboriginal objects were removed to the Urbis Offices at Angel Place, Level 8, 123 Pitt Street, Sydney NSW 2000, as a temporary storage location. The Aboriginal objects were stored in a locked cabinet in office space with around-the-clock security surveillance. The final keeping place of the artefacts will be made in consultation with the Registered Aboriginal Parties (RAPs).

5.2.4. Post-Excavation Analysis

All collected materials shall be temporarily held at the Urbis office, where they shall be analysed and catalogued by Urbis archaeological staff using the standard artefact curation protocol of the Australian Museum. Selected artefacts or representative samples will be photographed and included and further analysed in detail in the report. The collection shall be analysed using A Record in Stone (Holdaway & Stern 2004) and other contemporary methods.

A strategy for management of Aboriginal artefacts recovered from the site shall be developed through consultation with the RAPs. The RAPs are invited to provide comment on the long-term management of artefacts.

Artefacts identified and collected during test excavations will be temporarily held in a lockable, secure location at the Urbis Sydney office (Angel Place, Level 8, 123 Pitt Street, Sydney NSW 2000) where they shall be catalogued and analysed by an Urbis archaeologist / artefact specialist.

Following completion of artefact cataloguing and analysis any artefacts recovered during test excavations and subsequent salvage excavations (if necessary) will be moved to the agreed long-term keeping place as soon as practicable in accordance with:

Requirement 26 "Stone artefact deposition and storage" in the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (24 September 2010.

6. RESULTS

6.1. ARCHAEOLOGICAL SURVEY RESULTS

A field survey of the subject area was undertaken on 19th October 2020 by Urbis Senior Archaeologist Andrew Crisp and Urbis Consultant Archaeologist Aaron Olsen, with three RAP site officers in attendance. Representatives are listed in Table 7 below.

Table 7 – RAP survey attendees

RAP Group	Representative
Deerubbin Local Aboriginal Land Council (DLALC)	Steven Randall
Deerubbin Local Aboriginal Land Council (DLALC)	Kevin Meredith
Deerubbin Local Aboriginal Land Council (DLALC)	David Whitlam

The study area was walked on foot with opportunistic inspection of areas of surface exposure. Landforms identified as having a potential for containing a subsurface archaeological deposit were identified. The archaeological survey was undertaken in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010a).

In accordance with the Code of Practice the study area was surveyed according to survey units, landforms, and landscapes. All survey units are described in Table 8, shown in Figure 5 and Figure 6, with sampled landform areas described in Table 9.

The field survey was undertaken in generally clear, sunny conditions with some cloud present in the morning. The field survey was undertaken via pedestrian transects with individuals distanced at approximately 5-10m where possible, and archaeologists with GPS trackers on either end of the group.

The coverage of the field survey as shown by GPS data is represented in Figure 5 below.

Generally, visibility was low across the subject area due to grass and vegetation coverage, with visibility limited to areas of exposure resulting from disturbance including paths and tracks, dam embankments and edges, and localised erosion scours at the base of mature trees (caused by cattle movement/impacts).

No new Aboriginal sites were identified during the survey.

Table 8 - Field Survey Data - Survey Coverage

Survey Unit	Landform	Unit Area (m²)	Visibility %	Exposure %	Effective Coverage (m²)	Effective Coverage %
1	Lower Hillslope	50760	20	20	2030.4	4
2	Upper Hillslope/Ridge	18630	20	10	372.6	2
3	Lower Hillslope	27060	20	20	1082.4	4
4	Lower Hillslope	75330	20	10	1506.6	2
5	Lower Hillslope	60300	20	20	2412	4

During the course of the survey disturbance was noted and areas of potential were recorded. The test excavation will target undisturbed landforms within close proximity to freshwater, locations of erroneously recorded AHIMS sites and areas considered to be moderately to highly disturbed (control area). No previously unidentified sites were recorded as a result of the survey.

Table 9 - Field Survey Data - Landform Summary

Landform	Landform Area (m²)	Area Effectively Surveyed (m²)	Percentage of Landform Effectively Covered	Number of Aboriginal Sites	Number of Artefact Features
Lower Hillslope	213450	2030.4	0.951229796	-	-
Upper Hillslope/Ridge	18630	372.6	2	-	-

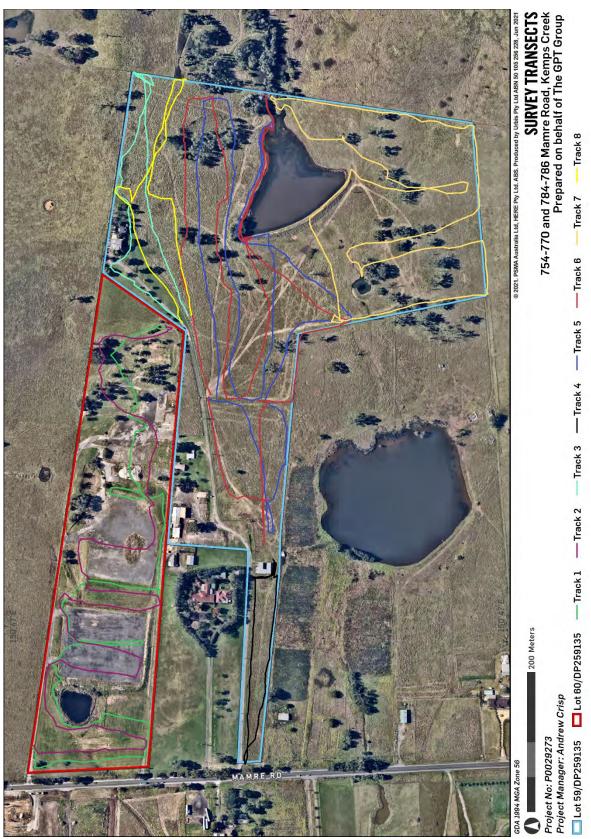


Figure 5 – Archaeological survey GPS tracks – Andrew Crisp and Aaron Olsen

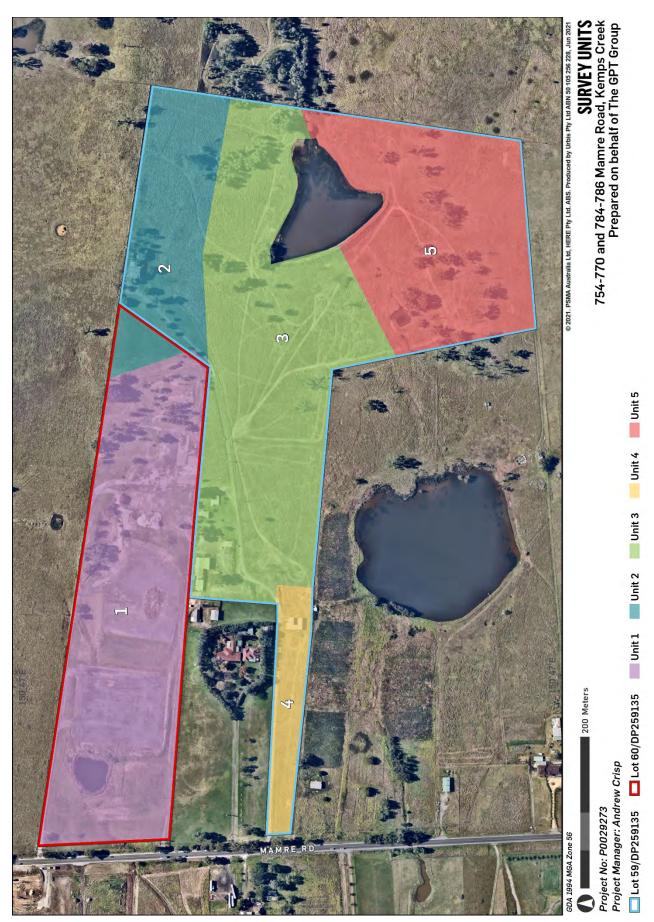


Figure 6 – Archaeological Survey Units

6.1.1. Survey Unit 1

Survey Unit 1 (SU1) incorporates the majority of Lot 60 DP 259135.

The eastern most portion of SU1 is a contains lower hillslope landform with low density residential dwelling. The entirety of the remainder of SU1 contains truncated and artificially terraced simple slope in addition to low density industrial use/warehouse/sheds.

SU 1 was heavily grassed with some sparce regrowth and planted vegetation and trees. Visibility in SU1 was low, at approximately 20%. Exposures were associated with the areas of disturbance including the dam embankments, unsealed tracks, livestock impacts at the base of trees and in association truncation of the natural landform.

No Aboriginal sites were identified in SU1.



Figure 7 - Survey team, SU1. Aspect west



Figure 9 – Erosion exposure within embankment between hardstands. Aspect south



Figure 11 - Lower hillslope adjacent to dwelling in eastern portion of SU1. Aspect south



Figure 8 – Dam within SU1. Aspect east



Figure 10 – Extant shed complex. Aspect south-east



Figure 12 – Lower hillslope to rear (east of dwelling). Aspect north

6.1.2. Survey Unit 2

Survey Unit 2 (SU2) incorporates the eastern most portion of Lot 60 DP 259135 and the north eastern portion of Lot 59 DP 259135.

SU2 contains mid hillslope rising to the east into upper hillslope and ridge landform. Atop the ridge is a low-density residential dwelling and garden.

SU2 was heavily grassed with some sparce regrowth and planted vegetation and trees. Visibility in SU2 was low, at approximately 20%. Exposures were associated with the areas of disturbance including livestock impacts at the base of trees and in association with vehicle movements.

No Aboriginal sites were identified in SU2.



Figure 13 – Western portion of SU2. Aspect west



Figure 15 – Garden and dwelling on ridge in SU2



Figure 17 – View along ridge from north-east corner of subject area. Aspect west



Figure 14 – View east from mid hillslope



Figure 16 – Ridge top in north-east of subject area. Aspect east



Figure 18 – View south toward tributary

6.1.3. Survey Unit 3

Survey Unit 3 (SU3) incorporates the central portion of Lot 59 DP 259135 to the north of the low order tributary (now dammed).

SU3 entirely consisted of lower hillslope landform utilised as pastural land, with small stands of native vegetation a large dam the most significant historic impact.

SU3 was heavily grassed with small stands of native trees, predominantly regrowth. Visibility in SU3 was low, at approximately 20%. Exposures were associated with the areas of disturbance including the dam embankments, unsealed tracks, and livestock impacts at the base of trees and areas or repeat movement (near gates, fence lines).

No Aboriginal sites were identified in SU3.



Figure 19 - Northern bank of dam. Aspect west



Figure 21 – stand of regrowth native trees



Figure 23 – View east along lower hillslope



Figure 20 – Western bank of dam. Aspect south



Figure 22 – survey team traversing lower hillslope landform. Aspect north



Figure 24 - View west toward SU4

6.1.4. Survey Unit 4

Survey Unit 4 (SU4) incorporates the western portion of Lot 59 DP 259135.

The eastern most portion of SU4 is a contains an artificially terraced simple slope in addition to established livestock barn/shed. The remainder of SU4 is gently westerly sloping paddock down toward Mamre Road easement.

SU4 was heavily grassed with some sparce native trees. Visibility in SU4 was low, at approximately 20%. Exposures were associated with the areas of disturbance including unsealed tracks, livestock impacts at the base of trees and in association truncation of the natural landform.

No Aboriginal sites were identified in SU1.



Figure 25 – Structure in eastern portion of SU4



Figure 27 - Felled mature native tree in SU4



Figure 29 - Remnant mature native tree in SU4



Figure 26 – Erosion in eastern portion of SU4



Figure 28 – Survey team traversing SU4. Aspect north



Figure 30 - View eastward along SU4

6.1.5. Survey Unit 5

Survey Unit 5 (SU5) incorporates the southern portion of Lot 59 DP 259135 to the south of the low order tributary (now dammed).

SU5 entirely consisted of lower hillslope landform utilised as pastural land, with small stands of native vegetation a large dam the most significant historic impact.

SU5 was heavily grassed with small stands of native trees, predominantly regrowth. Visibility in SU3 was low, at approximately 20%. Exposures were associated with the areas of disturbance including the dam embankments, unsealed tracks, and livestock impacts at the base of trees and areas or repeat movement (near gates, fence lines).

No Aboriginal sites were identified in SU5.



Figure 31 – Survey team traversing through stand of native trees. Aspect north-east



Figure 32 – View north toward tributary



Figure 33 – Indicative erosion cause by cattle movement



Figure 34 – View east along southern boundary of subject area



Figure 35 – View north along eastern boundary of subject area



Figure 36 – View along southern bank of dam. Aspect west

6.2. TEST EXCAVATION RESULTS

The archaeological test excavation of the subject area was undertaken was conducted in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010). The archaeological excavation of the subject area was undertaken in two field programs (Table 10).

Table 10 - Test excavation schedule

Portion of subject area	Notification of excavation to DPC under Requirement 15c	Date of excavation program
60 DP 259135	10 th November 2020	24, 25 and 26 November 2020
59 DP 259135	12 th March 2021	17-23 May, 24-28 May, 31 May-4 June and 7-9 June 2021.

6.2.1. Stage 1 Test Excavation Results – Lot 60 DP 259135

The following section presents a transect-by-transect summary of the test excavation results. The general locations of the test pits are shown by each package in Figure 55 and Figure 64. Test excavation was undertaken in accordance with the methodology and sampling strategy provided to Heritage NSW on 10th November 2021 under Requirement 15C. The excavation team is provided below and incorporated participants from the Registered Aboriginal Parties (RAPs) and Urbis archaeologists.

The excavation team included:

- Excavation Director/Senior Archaeologist, Urbis Andrew Crisp
- Consultant Archaeologist Aaron Olsen
- Deerubbin Local Aboriginal Land Council Site Officer Steven Knight
- Deerubbin Local Aboriginal Land Council Site Officer Tevita Tai

A total of twenty-three (23) 50cm by 50cm test units (TUs) were excavated within the Lot 60 portion of the subject area (Figure 37). Six TUs were excavated in Transect A with seventeen (17) TUs excavated in the Northbound portion.

Zero Aboriginal artefacts were identified in TUs excavated within the Lot 60 DP 259135 portion of the subject area.

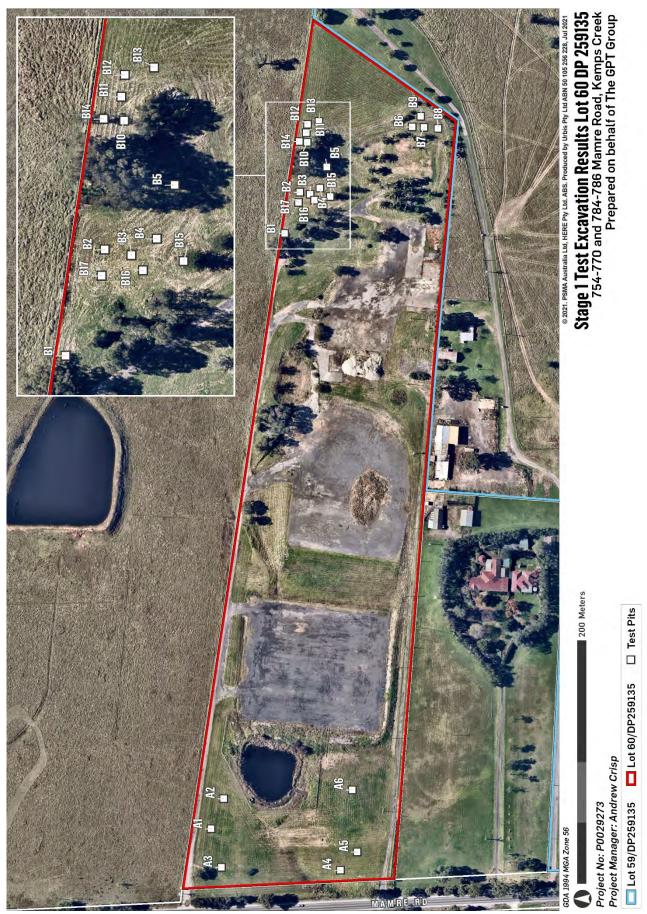


Figure 37 – Stage 1 Test Excavation Results Lot 60 DP 259135

6.2.1.1. Transect A

High levels of disturbance were identified across the entirety of Transect A which included shallow deposit (10cm-30cm) of archaeologically sterile mixed basal/levelling clay and topsoil.



Figure 38 – Indicative pre-ex. conditions Transect A



Figure 39 – Indicative post-ex TU in Transect A

6.2.1.2. Transect B

Transect B presented a largely natural soil profile of between approximately 20cm-40cm in depth. A light grey-brown humic deposit gradually transitioned into a firm basal clay.



Figure 40 – Indicative pre-ex. conditions Transect B



Figure 41 – Indicative post-ex TU in Transect B

6.2.2. Stage 1 Test Excavation Results - Lot 59 DP 259135

The following section presents a transect-by-transect summary of the test excavation results. The general locations of the test pits are shown below (Figure 44 to Figure 49). Test excavation was undertaken in accordance with the methodology and sampling strategy provided to Heritage NSW on 12th March 2021 under Requirement 15C. The excavation team is provided below and incorporated participants from the Registered Aboriginal Parties (RAPs) and Urbis archaeologists.

The excavation team included:

- Excavation Director/Senior Archaeologist, Urbis Andrew Crisp
- Consultant Archaeologist Owen Barrett
- Consultant Archaeologist Meggan Walker
- Wailwan Aboriginal Group Site Officer Phil Boney

- Wailwan Aboriginal Group Site Officer Braydon MacDougall
- Wailwan Aboriginal Group Site Officer Joshua MacDougall
- Wailwan Aboriginal Group Site Officer Joseph Hampton
- Wailwan Aboriginal Group Site Officer Kyleiah Caldeel
- Kamilaroi Yankuntjatjara Working Group Site Officer Jamie Currell
- Kamilaroi Yankuntjatjara Working Group Site Officer Kadibulla Khan
- Kamilaroi Yankuntjatjara Working Group Site Officer Grant Fenton
- Kamilaroi Yankuntjatjara Working Group Site Officer Ralph Hampton
- Kamilaroi Yankuntjatjara Working Group Site Officer –Belinda Jackson

The study area was defined by property boundaries which spanned approximately 1 km east from Mamre rd. at Kemps Creek. While narrow at its street frontage, approximately 80 meters, it became wider at its eastern end to a width of approximately 500 m. This eastern portion was bounded by a high, roughly semicircular ridgeline which forms an upper catchment area which currently provides water to large and small dams within, and adjacent to, the study area. Prior to European occupation and subsequent land clearing and dam construction the study area was likely to have consisted of ephemeral water holes and swampy areas attracting native fauna and providing resources for Aboriginal people.

A total of two hundred and sixty-eight (268) 50cm by 50cm test units (TUs) were excavated within the subject area. A low density artefact scatter was identified in areas B and E. TU B58 and TU E33, with the highest artefact counts of 5 were expanded under Stage 2 of the test excavation program to refine an understanding of artefact distribution in these two areas.

TU E47 approximately twenty (20) metres north of TU E33 also had five (five) artefacts and TU E66 approximately forty (40) metres south east of TU E33 was later found to have fourteen (14) artefacts however this was not discovered until the final days of the excavation program.

Table 11 - Stage 1 Artefact Count and Types from Areas A to G

Area	Number of Artefacts	Core	Distal Fragment	Flake	Flake Tool	Flaked Piece	Medial Flake	Other	Proximal Flake
Α	3	0	1	1	0	1	0	0	0
В	39	4	8	3	0	0	1	15	8
С	4	1	2	0	0	0	0	1	0
D	5	1	0	3	0	0	0	0	1
E	45	5	2	8	2	0	0	18	10
F	2	0	0	1	0	0	0	1	0
G	0	0	0	0	0	0	0	0	0

Stage 1 archaeological test excavation was undertaken at **five** prominent landforms within the study area. These were divided into areas designated A to G; however, areas E, D and F formed a continuous stretch of lower slopes at varying distances from the original creek line.

<u>Areas A and C:</u> Moderate slopes on the southern and northern flanks, respectively, of the large dam in the eastern part of the study area within the upper catchment area surrounded by high ridgelines. Vegetation consisted of scattered mature eucalypts and casuarina groves with exotic grass and weed species. Twenty-seven (27) Test units (TUs) were excavated at area A labelled A1 – A27. Twenty-seven TUs were also excavated at area C labelled C1-C27.and C. Area A returned three (3) artefacts and Area C returned four (4) artefacts.

Areas B and E: Located west and down slope of the afore mentioned large dam consisted of slightly raised areas north and south, respectively, of the original creek line and current swampy low-lying land forms and a small dam. Broad spurs rising from these areas to the upper catchment ridgeline may have provided a travel route to the lower lying flood plains. A low density artefact scatter was identified in these two locations. Vegetation in areas B and E consisted of sparse eucalypts and exotic grass and weed species. A small grove of casuarinas was located next to the small dam adjacent to area B. Under Stage 1 of the test excavation program one hundred (100) TUs were excavated at area B and sixty-seven (67) TUs were excavated at area E. Area B returned thirty-nine (39) artefacts and Area E returned forty-five (45) artefacts.

Areas D and F: These areas were a continuation of broad gentle slopes continuing west from area E towards Mamre Rd. These two areas were separated by cut and filled land on which a shed had been situated. Vegetation at areas D and F consisted of sparse living and dead eucalypts and exotic grass and weed species. Area D returned five (5) artefacts and area F returned two (2) artefacts.

<u>Area G</u>: Upper crest of the catchment area in the north-east of the study area. Vegetation in this area consisted of exotic grass species. Area G returned no artefacts.

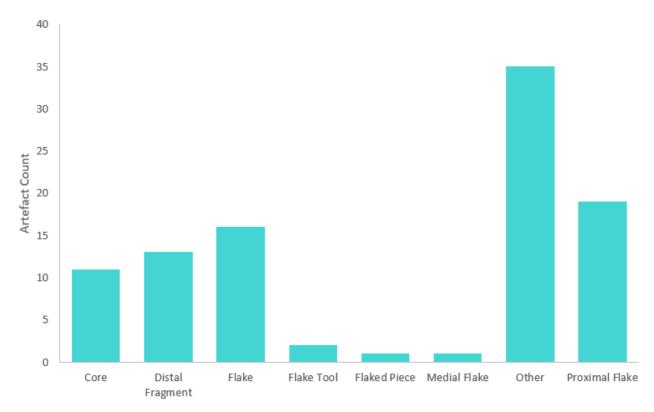


Figure 42 – Stage 1 Artefacts by Type

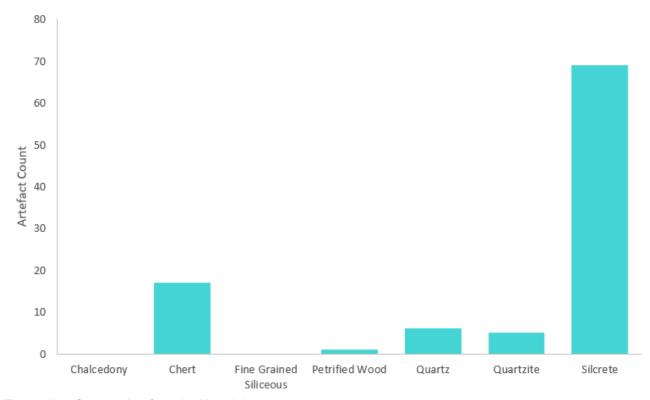


Figure 43 – Stage 1 Artefacts by Material

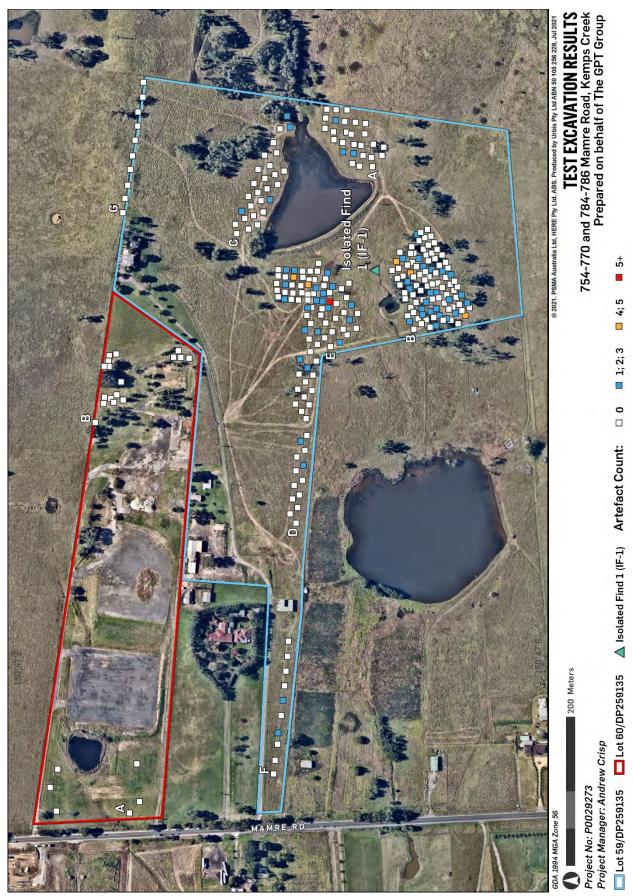


Figure 44 – Stage 1 Test Excavation Results



Figure 45 – Lot 59 Stage 1 Test Excavation Results, Transect A and Transect C

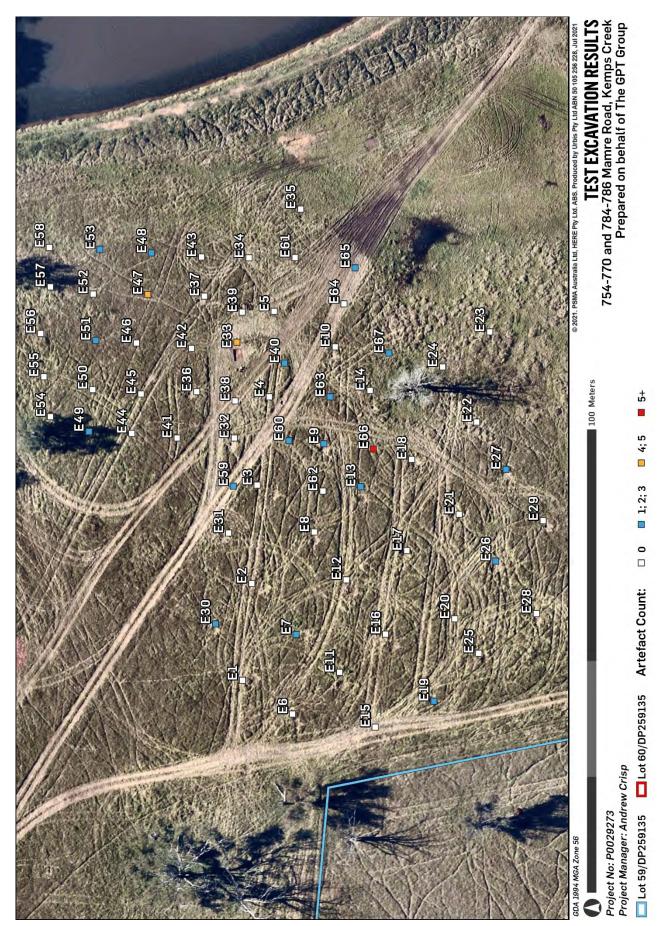


Figure 46 - Lot 59 Stage 1 Test Excavation Results, Transect E

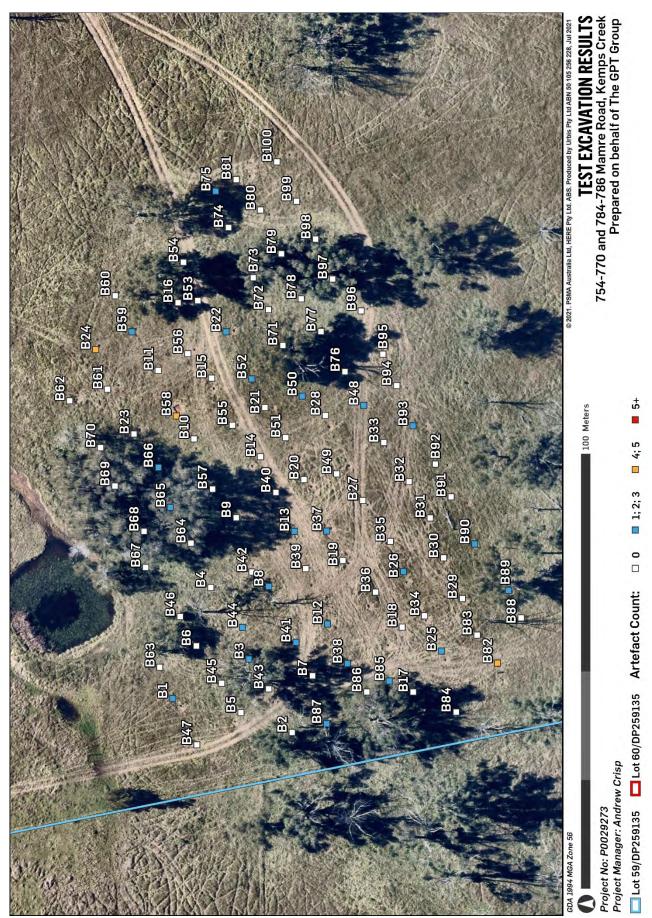


Figure 47 – Lot 59 Stage 1 Test Excavation Results, Transect B

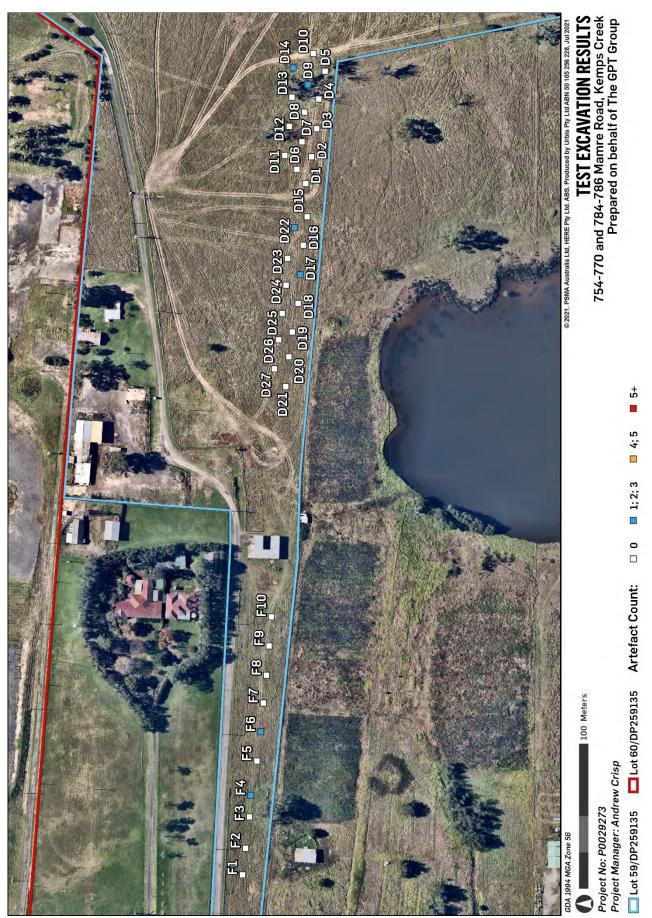


Figure 48 – Lot 59 Stage 1 Test Excavation Results, Transect D and Transect F

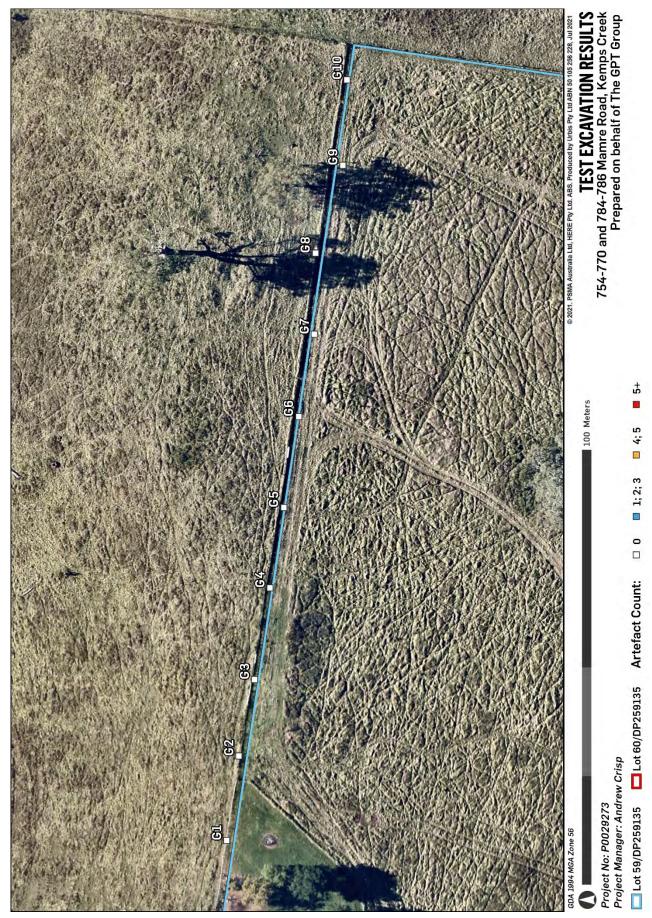


Figure 49 - Lot 59 Stage 1 Test Excavation Results, Transect G

6.2.2.1. Area A

Area A consisted of moderate slopes_on the southern flank of the large dam in the eastern part of the study area within the upper catchment area surrounded by high ridgelines. Vegetation consisted of scattered mature eucalypts and casuarina groves with exotic grass and weed species.

Twenty-seven (27) Test units (TUs) were excavated at area A at 20m intervals on 6 transects spaced 10m apart. These were labelled A1–A27.

Soil profiles at area A displayed considerable variation in depth and levels of disturbance. Soils had an average depth of 15cm, and a depth range of 15cm to 30cm. The shallowest TUs showed signs of truncation and mechanical disturbance. The deeper TUs appeared to have intact soil profiles.



Figure 50 – Area A view north-west. Lower slopes adjacent to dam. Area C (lower slopes) and area G (ridge line) in background. Test pit A1 location in foreground.



Figure 51 – Area A view south-east. Gentle slopes rising to upper catchment ridgeline in east of study area. Location of Test pit A2 in foreground.

A Typical undisturbed soil profile in Area A such as at A4 consisted of:

- I. 0-25cm: Dark brown silty clay loam; scattered baked clay and charcoal; few inclusions. Munsell 5YR 3/3. pH 6.5.
- II. 25cm to base: increasingly clayey bioturbated transition to:
- III. Base: yellowish to reddish silty clay. Munsell 5YR 4/4. pH 6.



Figure 52 - TU A4. Typical soil profile



Figure 53 – TU A17. Truncated and disturbed soil profile.

6.2.2.2. Area B

Area B was located west of the large dam in the east of the study area. It consisted of a slightly raised area south of the original creek line and current swampy low-lying landforms and a small dam. A broad spur rising from this area to the upper catchment ridgeline may have provided a travel route to the lower lying flood plains. A low-level artefact scatter was retrieved from Area B. Vegetation in area B consisted of sparse eucalypts and exotic grass and weed species. A small grove of casuarinas was located next to the small dam adjacent to Area B.

One hundred (100) TUs were excavated at area B and were labelled B1-B100. Initially test pits were placed at 20m intervals on multiple transects spaced 10m apart. A low-level artefact scatter was found across the landform with no clear focus, therefore further test pits were excavated to create a 10m grid covering the landform. This revealed a slightly higher concentration at TU B58 (five artefacts). TU58 was therefore flagged for expansion under Stage 2 to examine the nature and extent of the archaeological deposit in this location.

Soil profiles in area B showed considerable variation in depth and levels of disturbance. Soils had an average depth of 21cm and a depth range of 10cm to 45cm. As was the case in Area A, this variation was partially due to disturbance and erosion evident in some test units.



Figure 54 – Area B view south. Lower slopes below spur leading to upper catchment ridgeline. Location or TU B8 in foreground.



Figure 55 – Area B view north. Small dam and drainage line in background. Location of TU B58 in foreground.

A typical soil profile at Area B such as at B1 consisted of:

- I. 0-20cm; Reddish brown silty clay loam with few inclusions. Varying degrees of insect/ earthworm/tree root bioturbation. Munsell 7.5YR 3/3. pH 5.5.
- 11. 20cm -base: Bioturbated transition to:
- III. Base: reddish brown silty clay. Munsell 2.5YR 3/6.pH 6.



Figure 56 – Typical soil profile in Area B. TU B7.



Figure 57 – Truncated and disturbed soil profile. TU B32.

6.2.2.3. Area C

Area C consisted of moderate slopes on the northern flank of the large dam in the eastern part of the study area within the upper catchment area surrounded by high ridgelines. Vegetation consisted of one large mature eucalypt and casuarina groves with exotic grass and weed species.

Twenty-seven (27) Test units (TUs) were excavated at area C at 20m on four transects spaced 10m apart. These were labelled C1 - C27.

Soil profiles at area C displayed considerable variation in depth and levels of disturbance. Soils had an average depth of 23.5cm, and a depth range of 8cm to 48cm. The shallowest TUs showed signs of truncation and mechanical disturbance. The deeper TUs appeared to have intact soil profiles.



Figure 58 – Area C view west. Moderate to gentle slopes adjacent to dam. Location of TU27 in foreground.



Figure 59 – Area C view east towards upper catchment area. TU C16 in foreground.

A typical undisturbed soil profile in Area C such as at A4 consisted of:

- 0-25cm: Dark brown silty clay loam; scattered baked clay and charcoal; few inclusions. Munsell 5YR 3/3. pH 6.5.
- II. 25cm to base: increasingly clayey bioturbated transition to:
- III. Base: yellowish to reddish silty clay. Munsell 5YR 4/4. pH 6.

In the eastern part of Area C TUs C25, C26 and C27 displayed a deeper soil profile. TU C25 provides an indicative example consisting of

- I. 0-35cm: Very dark grey brown silty clay loam; scattered charcoal flecks; few other inclusions... Munsell 10YR 3/2. Diffuse transition to:
- 35-40cm: Pale grey, brown silty clay loam; ferromanganese flecks and small nodules <5mm -10%; 11. Munsell 10YR 5/2.
- III. 40cm-base: Yellowish brown transition to:
- IV. Base: Reddish brown silty clay. Munsell 10YR 4/3.







Figure 61 – Typical soil profile. TU C24

6.2.2.4. Area D

Area D consisted of broad gentle slopes continuing west from area E towards Mamre Rd. Vegetation at Area D consisted of sparse living and dead eucalypts and exotic grass and weed species.

Twenty-seven (27) Test units (TUs) were excavated at Area D at 20m intervals on five transects spaced 10m apart. These were labelled D1 – D27.

Soil profiles at Area D were relatively uniform. Soils had an average depth of 24cm, and a depth range of 18cm to 34cm.



Figure 62 – Area D view south towards drainage line and dam in background. Location of D22 in foreground.



Figure 63 – Area D view north-east towards the upper ridge line in the north east of the study area.

A typical undisturbed soil profile in Area D such as at D4 consisted of:

- 0-20cm: Brown silty clay loam with few inclusions; Munsell 7.5YR 4/3. pH 6.
- II. 20cm to base: Bioturbated transition to:
- III. Base: Dark yellowish brown silty clay. Munsell 10YR 3/4. pH 6.5.



Figure 64 – A typical soil profile for Area D. TU D4



Figure 65 – A bioturbated soil profile. TU D10.

6.2.2.5. Area E

Area E was located west of the large dam in the eastern end of the study area. It consisted of a slightly raised area north of the original creek line and current swampy low-lying landforms and a small dam. A broad spur rising from this area to the upper catchment ridgeline may have provided a travel route to the lower lying flood plains. A low-level artefact scatter was retrieved from Area E. Vegetation in area E consisted of one dead mature eucalypt and exotic grass and weed species.

Sixty-seven (67) TUs were excavated at area E and were labelled E1-E67. TU E33 was extended to examine the extent of a higher concentration of artefacts. TUs were placed at 20m intervals on multiple spaced 10m apart. Extra TUs were placed to create a 10m grid to assess the extent of the artefact concentration centred at TU E33 (five artefacts).

Soil profiles in area E were relatively uniform in depth and showed little disturbance. Soils had an average depth of 28cm and a depth range of 19cm to 47cm. The exception was TU E23 in the lowest lying part of Area E which had a 33cm deep capping of mixed clay fill over 32cm of natural soil profile.

The lower lying TUs closest to the original creek line contained Ferromanganese nodules indicative of periodic saturation of the soil. This contributes evidence that the eastern portion of the study area contained ephemeral water sources in the past. Artefact distribution an Areas E and B adjacent to the creek line indicate this was a focus of activity for Aboriginal people in the past.



Figure 66 – Area E view north east towards upper ridge line. TU E5 in foreground.



Figure 67 – Area E view east TU E25 in foreground. Dammed drainage line in background.

A typical soil profile at Area E such as at E33 consisted of:

- I. 0cm-base: Reddish brown silty clay loam with few inclusions. Munsell 7.5YR 3/2. pH 6. Bioturbated transition to:
- II. Base: reddish brown silty clay. Munsell 7.5YR 4/4 pH 6.

A bleached ferromanganese rich soil profile closer to the original drainage line prior to dam construction such as at TU E10 consisted of:

- I. 0-20cm: Dark greyish brown silty loam; sparse Fe/Mn flecks and small nodules increasing with depth; Munsell Munsell 10YR 4/2; bioturbated transition to:
- II. 20 -30cm: Bleached zone, greyish brown; Munsell 10YR 5/2; Fe/Mn -10%; bioturbated transition to:
- III. Base: Brown silty clay; Munsell 10YR 5/3; grey in biopores.



Figure – 68 Area E TU E33. Animal burrow in east section.



Figure 69 – Ferromanganese rich bleached soil horizon. TU E10

6.2.2.6. Area F

Area F was located in the western end of the study area adjacent to Mamre Rd. In this area the landform levelled out to an undulating floodplain morphology associated with South creek. Vegetation consisted of one large eucalypt and exotic grasses and weeds.

Area F showed varying levels of disturbance such as post holes, mounds and depressions, and dumped rubbish. Test units (TUs), however, revealed predominantly intact soil profiles. F9 and F10 close to a shed in the east of Area F showed evidence of earthworks. F9 appeared truncated and F10 had a capping of redeposited soil and clay.

A total of ten (10) test units (Tus) were excavated in Area F on a single transect at 20m intervals and were labelled F1 – F10. TUs had a depth range of 20cm – 55cm with an average depth of 34cm.





Figure 70 - Area F view east.

Figure 71 – Area F view west.

A typical soil profile at Area F such as at F3 consisted of

- I. 0cm base: Reddish brown silty clay loam with ironstone gravels increasing with depth; Munsell 7.5YR 5/4
- II. Base: Reddish brown silty clay. Munsell 2.5YR 3/6.



Figure 72 – Area F typical soil profile. TU F3



Figure 73 – TU F10 showing a capping of redeposited soil and clay.

6.2.2.7. Area G

Area G was located on the upper crest of the catchment area in the north-east of the study area. Vegetation in this area consisted of exotic grass species.

A total of ten (10) test excavation units were excavated on a single transect at twenty metre intervals. These were labelled G1 - G10. The transect was placed parallel to the property boundary close to the crest of the landform. Soil depth had a range of 22cm – 40cm with an average depth of 29cm. Soils were relatively uniform, with varying amounts of degraded bedrock. Only TU G3 with the shallowest profile appeared to have been disturbed





Figure 74 – Area G view east. TU G1 in foreground.

Figure 75 – Area G view west. TU G6 in foreground.

A typical soil profile at Area G such as at G5 consisted of

- I. 0cm - base: Dark reddish brown silty clay loam with degrading bedrock small and large pieces. Munsell 5YR 3/4.
- II. Base: Dark reddish brown clay. Munsell 7.5YR 3/3.



Figure 76 – Area FG typical soil profile. TU G5.



Figure 77 – Disturbed soil profile in TU G3

6.2.3. Stage 2 Test Excavation Results – Lot 59 DP 259135

6.2.3.1. Open Area B

Area B was located west of the large dam in the eastern end of the study area. It consisted of a slightly elevated rise below a broad spur leading to the ridge line of the upper water catchment, and adjacent to a current swampy low-lying landform and a small dam. A low-level artefact scatter of 43 artefacts was retrieved from one hundred (100) test excavation units (TUs) across Area B during Stage 1.

TU B58 had the highest count at five (5) artefacts. The decision was made to expand TU B58 to examine whether there was a significant concentration of artefacts present or a continuation of a diffuse scatter. TU's adjacent to TU B58 on a 10 metre grid contained zero (0) artefacts to the east, south and west and one (1) to the north which provided an outer limit of the artefact concentration if present.

Stage 2 expansion of TU B58 proceeded in 50cm x 50cm excavation units (EUs) which were sieved as soon as practicable to guide if and where further excavation units would be placed. This was to continue until the focus and outer edges of the artefact scatter could be identified or until limits specified in OEH's Code of practice for archaeological investigation of Aboriginal objects in NSW Requirement 16, 5 (i) which imposes a constraint on the maximum extent of open area excavations within a test excavation. A total of twenty-nine (29) additional EUs were excavated at Open Area B.

Soil profiles were consistent throughout Open Area B with only slight variations in depth.

A typical soil profile at Area B consisted of:

- 0-20cm: Reddish brown silty clay loam with few inclusions. Munsell 7.5YR 3/3. pH 5.5.
- 11. 20cm -base: Bioturbated transition to:
- III. Base: reddish brown silty clay. Munsell 2.5YR 3/6.pH 6

Disturbance was limited to one infilled animal burrow.

The first step of the process was to expand in the shape of a cross with a further excavation unit to the north, south, east and west to immediately provide some directionality to the archaeological deposit. Figure 78 and Figure 79 below show this initial phase of expansion.





Figure 78 - Open Area B. View north

Figure 79 – Extension B plan view.

The northern expansion of these four EUs contained five (5) artefacts, triggering the next stage of expansion which involved completing a 1.5m x 1.5m square. Figure 80 and Figure 81 below show this stage of excavation.



Figure 80 – Open Area B 1.5 x 1.5m square view north

Figure 81 - Open area B plan view

Excavation continued by expanding to follow artefact densities. Figure 82 to Figure 83 below show intermediate stages of excavation at Open Area B.



Figure 82 – Open Area B intermediate stage. View north



Figure 83 - Open Area B. Plan view



Figure 84 – Open Area B south section



Figure 85 – Open Area B. Animal burrow disturbance.

Excavation continued until limits imposed by OEH's Code of practice for archaeological investigation of Aboriginal objects in NSW was met. Final photographs of open Area B can be seen below. Overall artefact count in Open Area B by EU is presented below in Figure 94.



Figure 86 - Open Area B view north



Figure 87 - Open Area B view east



Figure 88 - Open Area B view south



Figure 89 - Open Area B view west



Figure 90 – Open Area B north section



Figure 91 – Open Area B east section







Figure 93 – Open Area B west section

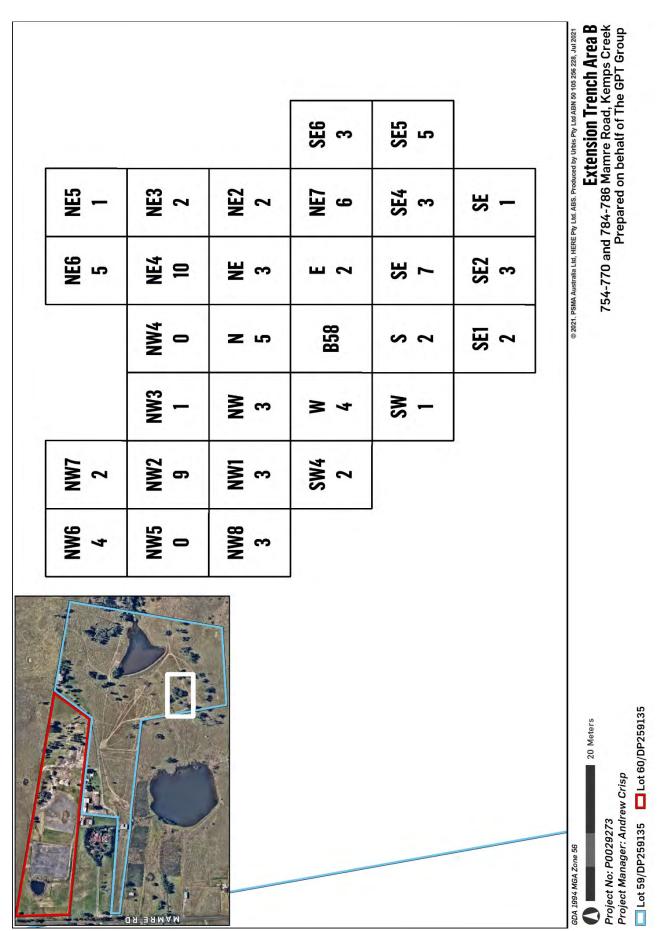


Figure 94 – Stage 2 Open Area B

6.2.3.2. Open Area E

Area E was located west of the large dam in the eastern end of the study area. It consisted of a slightly elevated rise and lower slopes below a broad spur leading to the ridge line of the upper water catchment, and adjacent to a current swampy low-lying landform.

A low density artefact scatter of fifty (50) artefacts was retrieved from sixty-seven (67) test excavation units (TUs) across Area E in Stage 1. TU E33 which was chosen for expansion had an artefact count at five (5). TU47 approximately twenty (20) metres north of TU E47 also had five (five) artefacts and TU E66 approximately forty (40) metres south east of TU E33 was later found to have fourteen (14) artefacts however this was not discovered until the final days of the excavation program.

Stage 2 expansion into an open area excavation was undertaken at TU E33 to examine whether there was a significant concentration of artefacts present or a continuation of a diffuse scatter. TU's adjacent to TU E33 at 10 metre intervals contained low numbers of artefacts, zero to two (0-2), which indicated an outer limit of the artefact concentration if present.

Expansion of Open Area E proceeded in 50cm x 50cm excavation units (EUs) which were sieved as soon as practicable to guide if and where further excavation units would be placed. This was to continue until the focus and outer edges of the artefact scatter could be identified or until limits specified in OEH's Code of practice for archaeological investigation of Aboriginal objects in NSW Requirement 16.5 (i) which imposes a constraint on the maximum extent of open area excavations within a test excavation. A total of twenty-four (24) additional EUs were excavated at Open Area E.

The soil profile within the open area excavation were consistent with TU E33, with only slight variations in depth.

A typical soil profile at Open Area E consisted of:

- 0cm-base: Reddish brown silty clay loam with few inclusions. Munsell 7.5YR 3/2. pH 6. Bioturbated transition to:
- II. Base: reddish brown silty clay. Munsell 7.5YR 4/4 pH 6.

Disturbance was confined to a small animal burrow in TU E33 which continued into the adjacent EU to the east and a burnt tree root in the north-east of the open area excavation.

The first step of the process was to expand in the shape of a cross with a further excavation unit to the north, south, east and west to immediately provide some directionality to the archaeological deposit. These four EUs contained artefacts with the highest number (eight) in the western EU therefore the next stage involved completing a 1.5m x 1.5m square. The figures below show this stage of excavation.



Figure 95 – Open Area E 1.5 x 1.5m square view south. Location of Open Area B in mid background



Figure 96 – Open area E plan view

Excavation continued by expanding to follow artefact densities. The figures below show intermediate stages of excavation at Open Area E.



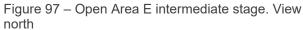




Figure 98 - Open Area E. Plan view

Excavation continued Excavation continued until limits imposed by OEH's Code of practice for archaeological investigation of Aboriginal objects in NSW was met. Final photographs of open Area E can be seen below. Overall artefact count in Open Area B by EU is presented below in Figure 107.



Figure 99 - Open Area E view north



Figure 100 - Open Area E view east



Figure 101 – Open Area E view south



Figure 102 – Open Area E view west



Figure 103 – Open Area E north section



Figure 104 – Open Area B east section



Figure 105 – Open Area E south section



Figure 106 – Open Area E west section

Figure 107 – Stage 2 Open Area E

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6.2.4. Isolated Find 1 (IF1)

Isolated Find 1 (IF1) consisted of a red silcrete flake located in the eastern part of the subject area at GPS coordinates 0295424E, 6253350N. It was located in the open depression between Areas B and E, which had the highest concentration of artefacts in the subject area, approximately forty-five (45) metres north of Open Area B and approximately ninety-one (91) metres south of Open Area E.

The site context was an eroded and disturbed drainage channel which feeds the small dam between Areas B and E. The ground surface contained a lag deposit of natural ironstone gravels and introduced gravels. Modern inclusions of asbestos, ceramic, brick and concrete had also been deposited in the drainage channel.

Figure 108 below shows the location of IF1 in a swampy drainage line between two dams. Figure 109 shows the eroded ground surface with modern inclusions. The location of IF1 is marked by the scale.



Figure 108 - Location of Isolated find in drainage line centre midground. View north.



Figure 109 - Ground surface. Erosion and modern inclusions.



Figure 110 - IF1



Figure 111 - IF1

Figure 112 and Figure 113 below show examples of the introduced modern materials also present at the location of F1.



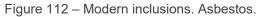




Figure 113 – Modern inclusions. Brick.

ANALYSIS AND DISCUSSION 7.

ARTEFACT ANALYSIS 7.1.

1. Is there a subsurface archaeological deposit present?

The Stage 1 and Stage 2 test excavation undertaken in the subject area (Lot 59 and 60 DP 259135) recovered 370 Aboriginal objects, all stone artefacts, from a total of 344 excavated test units (TUs) and expansion units (EUs).

The highest densities of artefacts were located in Areas B and E (Lot 59 DP 259135).

Area B contained 138 artefacts out of 129 excavated test pits and accounted for 37 % of the total subsurface assemblage.

Area E contained 219 artefacts out of 91 excavated test pits and accounted for 59 % of the total sub-surface assemblage.

The remaining Areas A, C, D, F and G contained very low artefact densities (Table 12).

If an archaeological deposit present, how can it be interpreted?

What is the spatial and vertical extent of the deposit?

Artefacts found during the test excavation program were predominantly concentrated adjacent to the waterway running through the subject area, specifically in Areas B and E. Distance from water correlated with reduced artefact density. The crest landform portion of the subject area excavated (Area G) contained zero subsurface assemblage. The entirety of the subsurface assemblage was situated within the alluvial terraces/lower slopes in proximity to the water course (Table 12).

Table 12 - Stage 1 and Stage 2 Test Excavation results by landform

Landform	Landform Area (m²)	Area	Area Tested (m ²)	Area effectively tested (%)	No. of test pits	No. of artefact
Lot 59 DP 2	259135					
Simple	151492	Α	6.75	0.004%	27	3
slope		В	32.25	0.021%	129	138
		С	6.75	0.004%	27	4
		D	6.75	0.004%	27	5
		E	22.75	0.015%	91	218
		F	2.5	0.002%	10	2
		Total A-F	77.75	0.051%	258	370
Crest	7656	G	2.5	0.033%	10	0
Lot 60 DP 2	259135			1		
Disturbed	102919	A	1.5	0.001%	6	0

Landform	Landform Area (m²)	Area	Area Tested (m ²)	Area effectively tested (%)	No. of test pits	No. of artefact
Simple Slope	8782	В	2	0.023%	8	0
Mid and Upper Slope	7488	В	2.25	0.030%	9	0

The vertical distribution of artefacts at a site can be a good indicator of occupation intensity as spits with higher concentration are likely to have seen longer or more intensive occupation than spits with smaller artefact concentrations.

Artefacts were found throughout spits 1 to 5 (0 to 50cm) during the test excavation program, although they were heavily concentrated in the upper 20cm of soil: 59% of all artefacts were found in the upper 10cm and 38% in the next 10cm (Table 13).

In the Stage 2 Open Areas (B and E), artefacts were also concentrated within the upper 20cm of soil (Table 14, Figure 114 and Figure 115). In Open Area B, 94.9% of all artefacts were found in the upper 10cm. In Open Area E the artefacts were distributed throughout the upper 20cm, with 36.4% in the upper 10cm and 59.5% in the next 10cm.

The results of artefact concentrations by spit shows the highest concentration of artefacts between 0 and 100 mm (59%, n=217) and 100 mm (38%, n=140). There is a clear trend where concentrations drop of significantly below Spit 2.

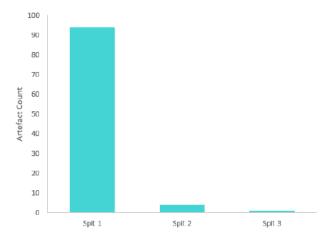
Table 13 - Vertical distribution of artefacts within subject area

Spit	Depth (cm)	Number of Artefacts	Percent of Artefacts
1	0 – 10	217	59%
2	10 – 20	140	38%
3	20 – 30	11	2.3%
4	30 – 40	1	0.3%
5	40 – 50	1	0.3%
		370	100%

Table 14 – Vertical distribution of artefacts in Open Area B (around B58) and Open Area E (around E33)

Spit	Depth (cm)	Number of Artefacts in Open Area B	Percent of Artefacts in Open Area B	Number of Artefacts in Open Area E	Percent of Artefacts in Open Area E
1	0 – 10	94	95%	63	36.5%
2	10 – 20	4	4.0%	103	59.5%
3	20 – 30	1	1.0%	7	4.0%

Spit	Depth (cm)	Number of Artefacts in Open Area B	Percent of Artefacts in Open Area B	Number of Artefacts in Open Area E	Percent of Artefacts in Open Area E
		99	100%	173	100%



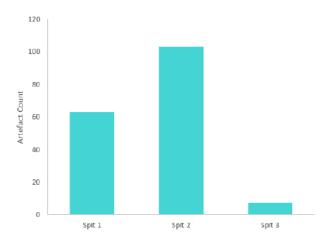


Figure 114 – Vertical distribution of artefacts in Open Area B

Figure 115 – Vertical distribution of artefacts in Open Area E

What is the integrity and condition of the deposit?

Most of Lot 60 and discreet portions of Lot 59 (dams, shed and dwelling construction) have been determined to be highly disturbed (see Figure 4) with the remainder of the subject area determined to have been subjected to low levels of subsurface impacts from by vegetation clearance, ploughing, bioturbation and other post-depositional impacts.

Area A in Lot 60 contained the only series of test pits that displayed clear evidence of disturbance with a shallow deposit (10cm-30cm) of archaeologically sterile mix of basal/levelling clay, demolition fill and humic fill in all six test pits.

The remainder of all excavated test pits (338) showed a largely homogenous alluvial deposit with no clear stratigraphy observed apart from sharp horizon with the clay base.

Therefore, the integrity of the sub-surface archaeological deposit is considered good to high in areas of low physical disturbance.

What are the physical attributes and compositions of the deposit (e.g. stone artefacts, features, remains of original environment, contact period artefacts)?

The excavated assemblage comprises 370 stone artefacts. Of the 370 artefacts, there are 97 (26%) complete flakes, 29 (8%) cores, and 7 (2%) flake tools. The remaining part of the assemblage includes 119 broken flakes (distal 14 % or proximal 18%), 1 median broken flake and 115 angular fragment (31%), nondiagnostic pieces, and 2 indeterminate pieces.

No other artefact types such as bone fragments, shell or foreign material such as glass or porcelain were found. Much of the assemblage has been recovered from Test Units E33 and B58, and their extensions. These locations likely represent localised production events.

The small size of the cores and flakes suggest that the material that was used on site had been already extensively utilised prior to entering the subject area.

Small, exhausted cores represent the end of the reduction sequence and suggest that the cores were already towards the end of their use when they were brought on site. The predominance of angular fragments (n=115, 31% of the total sub-surface assemblage) is in keeping with the findings of Biosis (2019) which also had angular fragments form the bulk of their artefact assemblage. Biosis stated that "angular fragments can therefore provide insight into the proximity of a site to a raw stone material source, the level of reduction present within an assemblage, and whether specific tools or implements were being produced at a site" (Biosis 2019, p.93) and as such the current assemblage is an example of a later stage of the reduction sequence.

The overwhelming majority (n 290=78%) of the artefacts are made of red silcrete, also known in the area as the Plumpton Ridge silcrete, named after the well-known quarry, that is located within 10 km of the subject area. This raw material has been widely used by Aboriginal people and its signature is present in almost every artefact assemblage surveyed and excavated on the Cumberland Plain. Other raw materials such as chert (9%), quartzite (6%) and petrified wood (2%) have also been ustilised within the subject area.

Table 15 - Total Artefact Counts by Material

Artefact Material	Number of Artefacts	Percent of Total Artefact Count
Chalcedony	4	1%
Chert	35	9%
Fine Grained Siliceous	2	1%
Petrified Wood	7	2%
Quartz	9	2%
Quartzite	21	6%
Silcrete	290	78%
Unidentified	2	1%
Total	370	100%

What are the characteristics of the stone artefact assemblage?

The evidence gathered during the archaeological Stage 1 and Stage 2 test excavations indicates that Areas E and B contain evidence of a long term or repeat camp sites. The archaeological test excavations conducted at Open Areas B and E have identified moderate density, relatively intact subsurface deposits.

Long term camp sites contain the most diverse artefact assemblages as they were home to the widest range of activities such as food production, craft activities, and tool manufacture (McDonald et al. 2018, p.23).

The results of the excavation also provide evidence that backed artefact manufacturing activities (Figure 117) were occurring at the site and have shown that the artefact assemblage matches with other assemblages found in the region including the highly correlating assemblage recovered by Biosis (2019) less than 1km to the west.

What types of artefacts are present and what specialisation if any can be detected in the assemblage?

The subsurface assemblage by artefact type is presented below in Table 16. The assemblage is dominated by angular fragments (n= 115, 31%) and flakes (n=97, 26%).

Cortex was recorded only on 7 stone artefacts with only one core had higher than 25% cortex. The rest of the artefacts had less than 25%. This lack of cortex supports the hypothesis that the subject area, in particular Areas B and E, Small, represent the end of the reduction sequence and suggest that the source material was already towards the end of their use when they were brought on site. Again, in keeping with the findings of Biosis (2019) within 1km to the west of the current subject area.

Pertinent artefact examples are provided below in Figure 116 to Figure 119.

Table 16 - Subsurface artefact assemblage by type

Artefact Type	Number of Artefacts	Percent of Total
Core	29	8%
Distal Fragment	52	14%
Flake	97	26%
Flake Tool	7	2%
Flaked Piece	1	0%
Medial Flake	1	0%
Other	115	31%
Proximal Flake	67	18%
Unidentified	1	0%
Total	370	100%



Figure 116 - Artefact 124 from Open Area B (B58 SE Extension), faceted red silcrete flake



Figure 118 - Artefact 183 from Open Area B (B58 NW-1 Extension), red silcrete geometric microlith



Figure 117 - Artefact 173 from Open Area B (B58 NW-7 Extension), red silcrete backed blade



Figure 119 - Artefact 216 from Open Area E (E33 SW Extension), red silcrete flake with retouch

Does the archaeological deposit have evidence of intra-site patterning or various occupational periods?

There is not enough physical evidence collected by the test excavation due to lack of stratigraphy to answer this research question.

Should faunal and/or shell material be located, what species present were utilised by Aboriginal people?

No floral or faunal remains have been found during the test excavation.

Can the archaeological deposit be interpreted in a local context?

Are there similarities or differences with nearby archaeological sites?

The nature, composition and spatial distribution of the assemblage is very similar to other archaeological assemblages excavated in the nearby part of the Cumberland Plain.

The archaeological deposit is comparable to that previously identified at the nearby 657-769 Mamre Road site (Biosis 2019). That assemblage consisted primarily of silcrete flakes and flake fragments, as is the case for the present assemblage. A notable difference is that present assemblage did not include any indurated mudstone tuff artefacts, possibly due to being located further from a source of that material on South Creek. The spatial distribution of artefacts is also comparable, both showing an increased concentration with proximity to water and a concentration of artefacts in the upper 20cm of soil.

Biosis (2019) recommended further archaeological investigation in the form of surface salvage and salvage excavation at AHIMS site 45-5-5188/MSP-02, 45-5-5184/MSP-01, MSP-07 and MSP-08 as a part of SSD approval.



Figure 120 – Aboriginal heritage sites identified by the Biosis assessment. Source: Biosis 2019

Is there evidence of connection to nearby sites in terms of raw material, composition and nature of the assemblage?

There is not enough evidence provided by the test excavation to answer this research question. However, it is very clear that the nature and composition of the excavated assemblage is very similar to other assemblages recovered from nearby sites.

Can the archaeological deposit be interpreted in the regional context?

Where did the raw materials originate from?

The raw materials of the assemblage most possibly sourced from local raw material sources, such as the outcrops of red silcrete around the wider Plumpton area and from the beds of the nearby creeks and rivers that carry a lot of gravel including silcrete and quartzite pebbles. The less representative raw materials such as chert and petrified wood can also be found locally.

Is there any indication of trade in connection of raw material procurement?

There is no indication of trade connections from the raw material composition of the site.

How does the assemblage compare to other archaeological sites within the region?

The composition and nature of the assemblage is very similar to other excavated assemblages in the Cumberland Plain.

Do the results if the archaeological excavation changes the scientific and cultural significance of the site?

What is the scientific significance and cultural value of the assemblage?

The scientific significance of the assemblage is considered moderate given the similarity to other artefacts assemblages in the local and wider area in the Cumberland Plain. Scientific Significance is addressed in detail in Section 6.2 below.

How do the Aboriginal stakeholders view the cultural value of the deposit and assemblage?

Feedback received from the project RAPs confirmed that the cultural value associated with the archaeological assemblage identified and recovered is high.

7.2. SIGNIFICANCE ASSESSMENT

The Australia International Council on Monuments and Sites (ICOMOS) Burra Charter 2013 provides guidance for the assessment, conservation and management of places of cultural significance (cultural heritage places). The Burra Charter provides a definition of cultural significance as "aesthetic, historic, scientific, social or spiritual value for past, present or future generations".

- Cultural heritage places or sites can be assessed through the application of these five principal values.
- Social or cultural value (for Aboriginal sites this is assessed by Aboriginal people).
- Historical value.
- Scientific/archaeological value (assessed mostly by archaeologists/heritage consultants).
- Spiritual Value (for Aboriginal sites this is assessed by Aboriginal people).
- Aesthetic value.

While the Burra Charter does not include 'archaeological value' specifically it is noted that it can be considered as a sub-set of scientific or other values (Australia ICOMOS Practice Note The-Burra-Charter-and-Archaeological-Practice).

This section is a summary of scientific of archaeological values for the project area. The assessment for social, historical, and aesthetic value is presented in Section 4 of the ACHAR.

7.2.1. Scientific Significance

Scientific or archaeological value may refer to the information content of a place and its ability to reveal more about an aspect of the past through examination or investigation of the place, including the use of archaeological techniques. The relative scientific value of a place is likely to depend on the importance of the information or data involved, on its rarity, quality or representativeness, and its potential to contribute further important information about the place itself or a type or class of place or to address important research questions. To establish potential, it may be necessary to carry out some form of testing or sampling. For example in the case of an archaeological site, this could be established by a test excavation.

To appreciate scientific value, ask:

Would further investigation of the place have the potential to reveal substantial new information and new understandings about people, places, processes or practices which are not available from other sources?

The following archaeological significance assessment is based on Requirement 11 of the Code. Using the assessment criteria detailed in Scientific Values and Significance Assessment, an assessment of significance was determined and a rating for each site was determined.

7.2.1.1. Isolated Find 01 (IF-1)

Isolate Find 01 (IF-1) is considered to represent low scientific significance. Common artefact and site type in the Cumberland Plain discovered in a disturbed context.

7.2.1.2. 784-786 Mamre Road Subsurface Assemblage

Areas B and E of the 784-786 Mamre Road Subsurface Assemblage are considered to represent moderate scientific significance because of the moderate to high density of artefacts, reduction sequence and tool types.

The remainder of 784-786 Mamre Road Subsurface Assemblage is considered to represent low scientific significance. Low density subsurface assemblage, common artefact types produced from local silcrete resources. Distribution of artefacts was across the landscape and evident on all landforms predicted to contain subsurface deposits.

IMPACT ASSESSMENT 8.

POTENTIAL HARM R 1

This section identifies the potential impacts to cultural heritage arising from the proposal, including demolition, excavation, and construction phases. Harm can be direct or indirect, defined by the Assessment Guidelines as:

- Direct harm may occur as the result of any activity which disturbs the ground including, but not limited to, site preparation activities, installation of services and infrastructure, roadworks, excavation, flood mitigation measures.
- Indirect harm may affect sites or features located immediately beyond or within the area of the proposed activity. Examples include, but are not limited to, increased impact on art in a shelter from increased visitation, destruction from increased erosion and changes in access to wild food resources.

8.2. LIKELY IMPACTED VALUES

The proposed development requires the complete impact of the subject area (bulk earthworks, truncation, terracing and the like) and as a result avoidance of impact to any sub-surface archaeological assemblage is not possible.

A summary of the potential impacts of the proposed works on known Aboriginal sites within the subject area is provided in Table 18 below.

Table 17 - Summary of potential archaeological impact

AHIMS site no.	Site name	Significance	Type of harm	Degree of harm	Consequence of harm
Pending	Isolated Find 01 (IF-1)	Low	Direct	Total	Total loss of value
Pending	784-786 Mamre Road Subsurface Assemblage	Moderate	Direct	Total	Total loss of value

AVOIDING AND MINIMISING HARM 9_

Avoidance of impact is the preferred mitigation and management strategy and should be implemented where practicable. As previously mentioned, the proposed development requires the complete impact of the subject area (bulk earthworks, truncation, terracing and the like) and as a result avoidance of impact to any subsurface archaeological assemblage is not feasible.

As It is not feasible for the proposed works to avoid impacts to the identified archaeological resources within the subject area the following mitigation measures, which considered the principles of ecologically sustainable development (ESD) and intergenerational equity in their design, are proposed.

ARCHAEOLOGICAL SALVAGE EXCAVATION AT OPEN AREA B, OPEN 9.1. AREA E AND TEST UNIT E66 POST-SSDA APPROVAL AND PRIOR TO CONSTRUCTION

It is recommended that salvage excavation be conducted for Open Area B. Open Area E and Test Unit E66 to recover sub-surface artefacts which will be impacted as a part of the proposed development. The purpose of the salvage excavation is to provide conclusive data on the artefact typology, material type and subsurface density/extent.

It is recommended that this be undertaken as a condition of the SSDA approval and prior to construction.

The additional salvage report will be produced following the completion of the salvage excavation and provided as an addendum report.

9.2. SURFACE COLLECTION POST-SSDA APPROVAL AND PRIOR TO CONSTRUCTION

Following SSDA approval and prior to construction surface collection of the isolated surface artefact IF1 must be undertaken in accordance with the Code of Practice and with the involvement of the Registered Aboriginal Parties.

Isolated Find 01 (IF-1) - GPS coordinates 0295424E, 6253350N

9.3. REPATRIATION OR DEPOSITION IN KEEPING PLACE

Through consultation with the RAPs a decision will be made as to the destination for the artefacts recovered during both the test excavation and surface collection programs.

Care and Control of Artefacts

Through the ACHA process a determination must be made in consultation with the RAPs the final keeping place of the artefacts collected during the project. All project artefacts will be sorted and packaged in accordance with Australian Museum Standards.

The general options are:

Option 1: Deerubbin LALC enters into a Care and Control agreement and the artefacts are then stored at their designated keeping place (Old Parramatta Gaol).

Option 2: Repatriation of artefacts to 'Country'. Following construction the artefacts would be reburied within the subject area and the location registered on AHIMS.

Option 3: Designation of alternative keeping place such as local museum, Australian Museum or with other RAP group.

CONCLUSIONS AND RECOMMENDATIONS 10.

Urbis Pty Ltd (Urbis) has been engaged by The GPT Group (the proponent) to produce an Aboriginal Cultural Heritage Assessment (ACHA) for 754-770 & 784-786 Mamre Road, Kemps Creek (Lots 59 & 60 DP 259135) (hereafter referred as the 'subject area'). The ACHA informed the preparation of the present Aboriginal Cultural Heritage Assessment Report (ACHAR), which will accompany State Significant Development (SSD) application for a warehousing and distribution centre within the subject area. This Archaeological Technical Report (ATR) has been prepared to accompany the ACHAR.

This ATR is intended to detail the methodology and results of test excavation. Refer to Section 1.2 of the ACHAR for detailed information regarding the proposed development at the subject area.

This ATR has been prepared in accordance with the following statutory guidelines:

- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) (CoP).

Test excavation was undertaken in line with the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010) to understand the nature, extent, integrity and research significance of the Aboriginal archaeological resource. The test excavation also aimed to sample the various landscape features for any potential sub-surface archaeological deposits.

The test excavation included:

- The Stage 1 and Stage 2 test excavation undertaken in the subject area (Lot 59 and 60 DP 259135) recovered 370 Aboriginal objects, all stone artefacts, from a total of 344 excavated test units (TUs) and expansion units (EUs).
- The highest densities of artefacts were located in Areas B and E (Lot 59 DP 259135).
- Area B contained 138 artefacts out of 129 excavated test pits and accounted for 37 % of the total subsurface assemblage.
- Area E contained 219 artefacts out of 91 excavated test pits and accounted for 59 % of the total subsurface assemblage.
- The remaining Areas A, C, D, F and G contained very low artefact densities
- All excavated material was wet sieved through a 5mm metal sieve station.

The predictive model formulated for the ACHAR anticipated that artefact scatters, PADs and isolated finds had moderate-high potential to occur in areas of low historical ground disturbance, on the basis of the distribution of artefact sites in the region as well as the landscape features present - including elevated ground/terraces associated with waterways and crests/spurs.

The results of the test excavation confirmed:

- Artefacts found during the test excavation program were predominantly concentrated adjacent to the waterway running through the subject area, specifically in Areas B and E. The entirety of the subsurface assemblage was situated within the alluvial terraces/lower slopes in proximity to the water course.
- Distance from water correlated with reduced artefact density. The crest landform portion of the subject area excavated (Area G) contained zero subsurface assemblage.
- The evidence gathered during the archaeological Stage 1 and Stage 2 test excavations indicates that Areas E and B contain evidence of a long term or repeat camp sites. The archaeological test excavations conducted at Open Areas B and E have identified moderate density, relatively intact subsurface deposits.
- Areas B and E of the 784-786 Mamre Road Subsurface Assemblage are considered to represent moderate scientific significance because of the moderate to high density of artefacts, reduction sequence and tool types.
- The remainder of 784-786 Mamre Road Subsurface Assemblage is considered to represent low scientific significance. Low density subsurface assemblage, common artefact types produced from local silcrete

resources. Distribution of artefacts was across the landscape and evident on all landforms predicted to contain subsurface deposits.

Isolate Find 01 (IF-1) is considered to represent low scientific significance. Common artefact and site type in the Cumberland Plain discovered in a disturbed context.

The project can proceed in accordance with the following recommendations:

Recommendation 1 - Archaeological salvage excavation at Open Area B, Open Area E and Test Unit E66 post-SSDA approval and prior to construction

It is recommended that salvage excavation be conducted for Open Area B, Open Area E and Test Unit E66 to recover sub-surface artefacts which will be impacted as a part of the proposed development. The purpose of the salvage excavation is to provide conclusive data on the artefact typology, material type and subsurface density/extent.

It is recommended that this be undertaken as a condition of the SSDA approval and prior to construction.

The additional salvage report will be produced following the completion of the salvage excavation and provided as an addendum report.

Recommendation 2 - Surface Collection post-SSDA approval and prior to construction

Following SSDA approval and prior to construction surface collection of the isolated surface artefact IF1 must be undertaken in accordance with the Code of Practice and with the involvement of the Registered Aboriginal Parties.

Isolated Find 01 (IF-1) - GPS coordinates 0295424E, 6253350N

Recommendation 3 - Repatriation or Deposition in Keeping Place

Through consultation with the RAPs a decision will be made as to the destination for the artefacts recovered during both the test excavation and surface collection programs.

Care and Control of Artefacts

Through the ACHA process a determination must be made in consultation with the RAPs the final keeping place of the artefacts collected during the project. All project artefacts will be sorted and packaged in accordance with Australian Museum Standards.

The general options are:

Option 1: Deerubbin LALC enters into a Care and Control agreement and the artefacts are then stored at their designated keeping place (Old Parramatta Gaol).

Option 2: Repatriation of artefacts to 'Country'. Following construction the artefacts would be reburied within the subject area and the location registered on AHIMS.

Option 3: Designation of alternative keeping place such as local museum, Australian Museum or with other RAP group.

Recommendation 4 – Aboriginal Cultural Heritage Induction

It is recommended that induction materials be prepared for inclusion in site inductions for any contractors working at the subject area. The induction material should include an overview of the types of sites to be aware of (i.e. artefact scatters or concentrations of shells that could be middens), obligations under the NPW Act, and the requirements of an archaeological finds' procedure (refer below). This process should be included in the Construction Environmental Management Plan (CEMP) and any site management plans.

The induction material may be paper based, included in any hard copy site management documents; or electronic, such as "PowerPoint" for any face to face site inductions.

Recommendation 5 – Archaeological Chance Find Procedure

Although considered highly unlikely, should any archaeological deposits be uncovered during any site works, a procedure must be implemented. The following steps must be carried out:

1. All works stop in the vicinity of the find. The find must not be moved 'out of the way' without assessment.

- 2. Site supervisor, or another nominated site representative must contact either the project archaeologist (if relevant) or DPC to contact a suitably qualified archaeologist.
- 3. The nominated archaeologist examines the find, provides a preliminary assessment of significance, records the item and decides on appropriate management, in conjunction with the RAPs for the project. Such management may require further consultation with DPC, preparation of a research design and archaeological investigation/salvage methodology and preparation of AHIMS Site Card.
- 4. Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required, and further archaeological investigation undertaken.
- 5. Reporting may need to be prepared regarding the find and approved management strategies. Any such documentation should be appended to this ACHAR and revised accordingly.
- 6. Works in the vicinity of the find can only recommence upon relevant approvals from DPC.

Recommendation 6 - Human Remains Procedure

In the unlikely event that human remains are uncovered during any site works, the following must be undertaken:

- 1. All works within the vicinity of the find immediately stop.
- 2. Site supervisor or other nominated manager must notify the NSW Police and DPC.
- 3. The find must be assessed by the NSW Police, and may include the assistance of a qualified forensic anthropologist.
- 4. Management recommendations are to be formulated by the Police, DPC and site representatives.
- 5. Works are not to recommence until the find has been appropriately managed.

Recommendation 7 - RAP consultation

A copy of the final ACHAR was provided to all Project RAPs on 30 August 2021. Ongoing consultation with RAPs should occur as the project progresses, to ensure ongoing communication about the project and key milestones, and to ensure the consultation process does not lapse, particularly with regard to consultation should the CFP be enacted.

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APPENDIX A BASIC AND EXTENSIVE AHIMS SEARCH RESULTS



AHIMS Web Services (AWS) Search Result

Purchase Order/Reference : Mamre_Bas

Client Service ID: 517484

Date: 02 July 2020

Urbis Pty Ltd - Angel Place L8 123 Pitt Street

Level 8 123 Angel Street Sydney New South Wales 2000

Attention: Aaron Olsen

Email: aolsen@urbis.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 292617 - 297343, Northings : 6251502 - 6255555 with a Buffer of 0 meters, conducted by Aaron Olsen on 02 July 2020,

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it.
 Aboriginal places gazetted after 2001 are available on the NSW Government Gazette
 (http://www.nsw.gov au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are
 recorded as grid references and it is important to note that there may be errors or omissions in these
 recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.

ABN 30 841 387 271

Email: ahims@environment.nsw.gov.au

Web: www.environment nsw.gov.au

• This search can form part of your due diligence and remains valid for 12 months.

AHIMS Web Services (AWS)

Your Ref/PO Number : Mamre_Ext **Extensive search - Site list report**

<u>SiteID</u>	SiteName	<u>Datum</u>	Zone	Easting	Northing	Context	Site Status	<u>SiteFeatures</u>	<u>SiteTypes</u>	Reports

AHIMS Web Services (AWS) Extensive search - Site list report

Your Ref/PO Number : Mamre_Ext

teID	<u>SiteName</u>	<u>Datum</u>	Zone Ea	asting 1	Northing	Context	Site Status	<u>SiteFeatures</u>	<u>SiteTypes</u>	Reports

AHIMS Web Services (AWS) Extensive search - Site list report

Your Ref/PO Number : Mamre_Ext

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Mamre_Ext

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	Easting	Northing	<u>Context</u>	Site Status	<u>SiteFeatures</u>	<u>SiteTypes</u>	Reports



AHIMS Web Services (AWS) Extensive search - Site list report

Your Ref/PO Number : Mamre_Ext

Client Service ID: 517484

SiteID SiteName Datum Zone Easting **Northing Context** Site Status **SiteFeatures SiteTypes** Reports

APPENDIX B PIT AND SPIT REGISTER

Test square ID	Date	Easting	Northing	Spit depth (cm)	Spit coun	max. depth (cm)	Fill depth (cm)	Soil profile	Disturbance	Munsell	Artefact count	Artefacts comment i.e. spit/context/count (refer to analysis)	Photo No	Soil sample Y/N	Section drawing Y/N	pl
41	17.5.21	0295568	6253379	3	3	16	N/A	Dark brown clayey loam; bioturbated transition to reddish brown heavy clay.	Possibly truncated.	5YR 3/3 - 5YR 4/3 - 5YR 4/4	o		5887-5893	y	у	6.5 - 6
A2	17.5.21	0295582	6235392	10	2	15		Dark brown clayey loam; bioturbated transition to reddish brown silty clay.	Appears intact.		1	Sikrete Distal Fragment in spit 2	5895- 5901			7
				-				Dark ye lowish brown silty day loam; bioturbated transition to yellowish brown	Scattered baked and charcoal;							
A3	17.5.21	0295600	6253403	10	2	15	N/A	day.	appears non-cultural.		•		5903-5910			
				-			1	Medium grey brown silty clay loam appears ashy; charcoal and baked clay flecks. Clear			0					
A4	17.5.21	0295615	6253416	10	3	30	N/A	transition to yellowish brown silty day base.	Appears intact.		-		5911-5917			
							10,000	Dark reddish brown to 3cm then increasing red clay; bioturbated transition to red silty			0					
A5	17.5.21	0295564	6253369		2	17		clay. Reddish brown sity clay loam with patchy	Appears intact. Shallow; patchy clay suggest			Co. Toward	3946-3932			
A.6	17.5.21	0295581	6253377		1	11		clay; reddish brown basal clay. Reddish brown sitty clay loam; reddish	ploughing.			Sikrete Flake in spit 1	5939- 5945			
A7	17.5.21	0295595	6253392	10	1	12	N/A	brown basal clay. Dark reddish brown silty clay loam;	Very clayey possibly eroded.				5931-5937			-
A.S	17.5.21	0295610	6253404	10	2	19	N/A	increasingly red brown transition to bioturbated clay base.	Appears intact.		0	11 2 1	5925-5930			
- 1		11.7	17.3	U.				Grey brown sitty clay loam; sparse ironstone gravels; slightly bleached towards base;			0		1.7.2			
A9	17.5.21	0295629	6253415	10	2	21	N/A	yellowish brown silty day base. Reddish brown silty day loam; bioturbated	Appears intact.				3918- 5924		-	
A10	17.5.21	0295563	6253352	10	i	11	N/A	boundary to reddish brown basal clay. Reddish brown silty clay loam; irregular	Appears intact.		0	1	5953- 5959			-
A11	17.5.21	0295578	6253364	10	1	12	3.00	transition to disturbed reddish brown basal clay.	Clumpy and somewhat mixed; ploughed?		0		3960- 3966			
A12	17.5.21	0295593		10		10	N/A	Reddish brown silty clay loam; scattered ironstone; reddish brown basal clay.	Truncated and mixed.		a		5967-5972			
A13	17.5.21	0295609		10		10		Reddish brown silty clay loam; patchy clay; disturbed reddish brown basal clay.	Clumpy and mixed; ploughed?		0		5974- 5980			
		1		10				Reddish brown sity clay loam; bioturbated			1	Annual Paris de Principale				
A14	17.5.21	0295625	6253401			20		boundary to reddish brown basal clay. Reddish brown silty clay loam; gradual	Appears intact.		0	Quartz Flaked Piece in spit 2	5981-5987			
A15	17.5.21	0295640	2.0	10	2	24	100	transition to reddish brown silty clay. Reddish brown silty clay loam; disturbed	Appears intact.		0		3988- 5994			
A16	18.5.21	0295576	6253353		1	13	N/A	reddish brown silty clay. Reddish brown silty clay loam; disturbed	Truncated and mixed. Truncated and disturbed 8 horizon				6132-6138			
A17	18.5.21	0295592		10	1	10		reddish brown silty clay. Red brown clayey loam; red brown silty clay	only. Truncated and disturbed 8 horizon				6125-6131		-	
A18	17.5.21	0295607	6253380	10	1	11	1	base; Red brown clayey loam; red brown silty clay	only. Truncated and disturbed 8 horizon				6118-6124			-
A19	17.5.21	0295624	6253389	10	1	11	N/A	base;	only. No topsoil remain (adjacent to				6110-6117			-
A20	18.5.21	0295640	6253401	10	1	11		Thin humic layer over disturbed basal day. Red brown mixed soil and clay, disturbed	eroded vehicle track). Truncated and disturbed 8 horizon		0		6139-6145			-
A21	18.5.21	0295593	6253351	10	1	10	N/A	red brown sitty clay base. Red brown mixed soil and clay, disturbed	only. Truncated and disturbed 8 horizon		0		6146-6131			
A22	18.5.21	0295607	6253362	10	1)	11	N/A	red brown silty clay base. Dark reddish brown silty clay loam; patchy	only.		0		6153-6159			-
A23	18.5.21	0295623	6253375	10	1	13	N/A	clay; red brown silty clay base. Reddish brown silty clay loam; scattered	Truncated and disturbed.		0		6159-6166			
							100	baked clay increasing with depth in SW corner; bioturbated transition to red brown	Fig. 1		0				1	
A24	18.5.21	0295639	6253401	10	3	24	N/A	sitty ctey.	Burnt tree root otherwise intact.				6103-6109			
100		1-51						Reddish brown sitty clay loam; scattered charcoal; increasing clay with depth;			D.		111			
A25	18.5.21	0295637	6253386	10	2	17	N/A	reasonably clear boundary to red brown silty clay.	Appears intact.				6167-6173			
VIII.	1.5	ll e l	100	5.77			5	of the second	Truncated and disturbed 8 horizon only. (adjacent to eroded vehicle		0					
A26	18.5.21	0295589	6253337	10	1	12		Mixed soil and red clay. Red brown sity clay loam; sparse charcoal	track).				6229-6235			
A27	18.5.21	0295621	6253361	10	2	23		and baked clay; disturbed transition to red brown silty clay base.	disturbed basal day.		0		6222-6228			
5.7	100	-					27	Reddish brown silty clay loam; increasing red clay content with depth; bioturbated		5YR 3/3 - 5YR 3/4 -	1	1 a 14 28 a				
B1	19.5.21	0295355	6253302	3	4	22	N/A	transition to red brown silty clay base. Reddish brown silty clay loam; increasing	Appears intact.	2.5YR 3/6		Sikrete Distal Fragment in spit 1	6236-06242		У	5.5
82	18.5.21	0295347	6253274	10	2	21	N/A	red day content with depth; bioturbated transition to red brown silty day base.	Heavily bioturbated: insect/ worm activity.		0		6264-6270			
50							Jan.	Yellowish brown (very dry) sitty day loam increasingly red with depth; Uneven	Bioturbated through past root	L.v.c.		1.00	12.7			
83	18.5.21	0295365	6253284	3	5	45	N/A	transition to undulating day base. Reddish brown sity day loam; increasing	activity; piece of glass in spit 3.	7.5YR 5/3 - 7.5YR 4/4		Sikrete Other in spit 4	6423 - 6429			-
84	18.5.21	0295381	6253293	10	,	25	N/A	red clay content with depth; bioturbated transition to red brown silty clay base.	Heavily bioturbated: insect/ worm activity.		0		6257-6263	-		
		023301		-				Reddish brown silty clay loam; increasing red clay content with depth; bioturbated	scarry.				ULD/ ULUS			
85	18.5.21	0295352	6253286	10	3	31		transition to red brown silty clay base. Reddish brown silty clay loam; bioturbated	Appears intact.				6243-6249			-
B6	18.5.21	0295369	6253297	10	2	21	N/A	transition to red brown silty clay base.	Appears intact.		0		6250- 6256			
87	18.5.21	0295631	6253270	10	2	20	N/A	Reddish brown silty clay loam; bioturbated transition to red brown silty clay base.	Appears intact.		0		6271-6277			L
88	18.5.21	0295381	6253280	10	3	29	N/A	Reddish brown silty clay loam; bioturbated transition to red brown silty clay base.	Appears intact.		1	Sikrete Distal Fragment in spit 1	6278-6285			
		1						Reddish brown silty clay loam; increasing red clay content with depth; bioturbated	Heavily bioturbated: insect/ worm		0					
89	19.5.21		6253287		2	20		transition to red brown silty day base. Reddish brown silty day loam; bioturbated	activity.		0		6286- 6293			
810	19.5.21	0295415	6253297	.5	3	24		transition to red brown silty clay base. Reddish brown silty clay loam; bioturbated	Appears intact.		0		6304-6311		-	
811	19.5.21		2	10	3	24	7.00	transition to red brown silty clay base. Reddish brown silty clay loam; bioturbated	Appears intact.		,	Sikrete Core in spit 1 Sikrete Flake	6312-6318			-
812	19.5.21	100	6253266		2	20	200	transition to red brown silty clay base. Reddish brown silty clay loam; bioturbated	Appears intact.			in spit 1	6417-6423			
B13	19.5.21	0295394		10	3	24		transition to red brown silty clay base. Reddish brown silty clay loam; bioturbated	Appears intact.			Sikrete Distal Fragment in spit 1	6430- 6436		-	-
814	19.5.21	0295412	6253282		2	19	N/A	transition to red brown silty clay base. Reddish brown silty clay loam; uneven	Appears intact.				6437-6444			-
815	19.5.21	0295429	6253293	10	3	30	N/A	transition to red brown silty clay base. Reddish brown silty clay loam; bioturbated	Possible root activity in lower spit		0		6445-6451			-
B16	19.5.21	0295447	6253301	10	2	17		transition to red brown silty clay base. Reddish brown silty clay loam; bioturbated	Appears intact.		0		6452-6458			-
817	19.5.21	0295358	6253249	10	3	24		transition to red brown silty clay base. Reddish brown silty clay loam; bioturbated	Appears intact.		0		6921-6927			
B18	19.5.21	0295375	6253257	10	3	24		transition to red brown silty clay base.	Appears intact.		0		6577- 6583			
819	19.5.21	0295389	6253263	10	2	21	N/A	Reddish brown sity clay loam; bioturbated transition to red brown sity clay base.	Appears intact.		0		6481 - 6483			
820	19.5.21	0295405	6253271	10	2	23	N/A	Reddish brown silty clay loam; bioturbated transition to red brown silty clay base.	Appears intact.		0		6474- 6490			
B21	19.5.21	0295423	6253281	10	2	23	N/A	Reddish brown silty clay loam; bioturbated transition to red brown silty clay base.	Appears intact.		0		6466- 6473			
					-			Reddish brown sity clay loam; biopores; bioturbated transition to red brown sity			1	Annual Control				
822	19.5.21	0295440	6253290	10	5	25		clay base. Medium brown silty clay loam to 10cm;	Appears intact.			Silcrete Flake in spit 1	6439-6463			-
14.1								abrupt transition to very mixed yellow clay and soil; sondage contained mixed clay/soil	3 to 2000		0					
						32		charcoal and baked clay to a burnt clay	Mixed and burnt. Does not appear							

		in the same	100000	4				Dark brown silty clay loam; bioturbated	Corner Gard	Yellow brown day:	4	Proximal Flake in spit 1 Chert Other		10000	П
B24	19.5.21	0295436	6253319	10	2	21	N/A	Reddish brown sity clay loam; increasing	Appears intact.	7.5YR 4/6	-	in spit 1 Quartzite Other in spit 1	6319- 6328	_	t
B25	20.5.21	0202274	6253247		,	20	N/A	red clay content with depth; bioturbated transition to red brown silty clay base.	Appears intact.	1	2	Silcrete Other in spit 1 Silcrete Other in spit 1	6384- 6390		ı
DEJ	20.3.21	0233374	023247	100	-	20	N/A	Reddish brown sity clay loam; scattered	Appears intact.			in spit 1	0304-0350		t
		1				1:00	1	charcoal and baked clay; increasing red clay content with depth; bioturbated transition			2	Chert Proximal Flake in spit 1 Quartz			ı
B26	20.5.21	0295384	6253249	10	3	24	N/A	to red brown sity day base. Reddish brown sity day loam; increasing	Appears intact.		_	Distal Fragment in spit 1	6391-6397		+
		1.5	1	2.0				red day content with depth; bioturbated			0				1
827	20.5.21	0295401	6253258	10	2	20	N/A	transition to red brown silty day base. Reddish brown silty day loam; increasing	Appears intact.				6598-6604	_	+
B28	20.5.21	0295421	6253267	10	2	20	N/A	red day content with depth; bioturbated transition to red brown silty day base.	Appears intact.		0		6603-6611		ı
			-	10	-		1	Reddish brown silty clay loam; clear			o o				t
B29	24.5.21	0295378	6253235	10	2	14	N/A	boundary to reddish brown silty day base. Reddish brown silty day loam; clear	Possibly truncated; otherwise intact.	-	-		6928-6934	-	+
B30	24.5.21	0295388	6253239	10	1	10	N/A	boundary to reddish brown silty day base.	Truncated.		0		6956-6962		1
	5.1						S.F	Reddish brown sity clay loam; patchy clay; bioturbated boundary to reddish brown	5775757 a		0		4.4.7	7	ı
B31	24.5.21	0295397	6253243	10	1	10	N/A	sity clay base. Reddish brown sity clay loam; patchy clay;	Truncated and disturbed.				6935-6941		+
(+ t	306.5		222222		,		5	irregular transition to reddish brown silty	2/5/2/2/145/2/2		0				ı
B32	24.5.21	0295405	6253247	10	2	15	N/A	clay base. Reddish brown sity clay loam; patchy clay;	Truncated and disturbed.				6942-6948		t
B33	24.5.21	0295415	6253253	10	,	16	N/A	irregular transition to reddish brown silty clay base.	Truncated and disturbed.		0		6949- 6955		ı
	200	0235425		-	1	1	1	Reddish brown silty clay loam; patchy clay;	TOTAL STATE OF STATE				13.0		t
B34	24.5.21	0295374	6253244	10	3	25	N/A	bioturbated boundary to reddish brown sity clay base.	Appears intact.		0		6963-6969		ı
							-	Reddish brown sity clay loam; patchy clay; bioturbated boundary to reddish brown			0				T
B35	24.5.21	0295392	6253252	10	2	20	N/A	silty clay base.	Mixed.		0		6970- 6976		1
6							T, r	Reddish brown sity clay loam; scattered baked clay continuing in base in SE corner;					Trans		1
B36	24.5.21	0295378	6253254	10	2	22	N/A	bioturbated boundary to reddish brown silty clay base.	Appears intact.	11	0		6977-6983	11.1	
	100	1		J.				Reddish brown sity clay loam; bioturbated			1	la Antonio			+
B37	24.5.21	0295394	6253266	10	3	27	N/A	boundary to reddish brown basal clay. Reddish brown sity clay loam; bioturbated	Appears intact.			Silcrete Other in spit 1	6984- 6990	-	+
B38	25.4.21	0295364	6253262	10	2	21	N/A	boundary to reddish brown basal clay.	Appears intact.		1	Sikrete Other in spit 1	7098-7104		1
B39	25.4.21	0295381	6253271	10	2	23	N/A	Reddish brown sity clay loam; bioturbated boundary to reddish brown basal clay.	Clay mottling in biopores otherwise intact.		0		7062-7068		
B40	24.5.21	0295399	6253279	10	z	20	N/A	Reddish brown silty clay loam; bioturbated boundary to reddish brown basal clay.	Non cultural burning otherwise intact.		0		7069- 7075		T
	1						1	Reddish brown sity clay loam; bioturbated	I de la companya della companya della companya de la companya della companya dell		1	and the second second	117 - 13		1
B41	24.5.21	0295369	6253273	10	3	29	N/A	boundary to reddish brown basal clay. Reddish brown sity clay loam; reasonably	Appears intact.		-	Quartzite Core in spit 1	7076- 7082		+
B42	24.5.21	0295385	6253284	10	,	21	N/A	abrupt transition to reddish brown basal clay.	Appears intact.		0		7083-7090		ı
	1000	-	-				1	Reddish brown sity clay loam; abrupt			0				t
B43	24.5.21	0295355	6253276	10	2	22	N/A	transition to reddish brown basal clay. Reddish brown sity clay loam; bioturbated	Appears intact.				7091-7097		+
B44	24.5.21	0295372	6253286	10	2	18	N/A	boundary to reddish brown basal clay. Reddish brown silty clay loam; bioturbated	Appears intact. Clay mottling in biopores otherwise		1	Sikrete Distal Fragment in spit 1	7105-7111		1
B45	24.5.21	0295359	6253291	10	3	30	N/A	boundary to reddish brown basal clay.	intact.		0		7112-7118	1 11 11 11	1
B46	24.5.21	0295374	6253300	10	2	19	N/A	Reddish brown silty clay loam; bioturbated boundary to reddish brown basal clay.	Appears intact.		0		7119-07125		I
					1			Reddish brown sity clay loam; bioturbated							Ť
B47	24.5.21	0295345	6253296	10	2	17	N/A	boundary to disturbed reddish brown basal clay.	Burning evident otherwise intact.		0		7126-7132		
B48	25.5.21	0295422	6253259	10	2	15	N/A	Reddish brown sity clay loam; bioturbated boundary to reddish brown basal clay.	Appears intact.		2	Chert Proximal Flake in spit 2 Silcrete Proximal Flake in spit 2	7231-7237		T
	20.			1		1.2		Reddish brown sity clay loam; bioturbated	Towns of the Control		0		4.00		1
B49	25.5.21	0295407	6253264	10	2	15	N/A	boundary to reddish brown basal clay. Reddish brown sity clay loam very clayey in	Appears intact.		È		7224-7230	_	t
B50	24.5.21	0295426	6253272	10	2	18	N/A	parts; irregular transition to reddish brown basal clay.	Bioturbated and/or mixed.		1	Chert Other in spit 2	7139-7145		ı
		10233420	ULJ3C/L	-		-	1	Reddish brown sity clay loam; baked clay				and some in spice	720 720		t
B51	24.5.21	0295412	6253278	10	1 -	10	N/A	and charcoal; heat affected red brown sity clay base.	Non cultural burning otherwise intact.		0		7146-7152		
852	25.5.21	0295429	6253284	10	2	19	N/A	Reddish brown sity clay loam; bioturbated boundary to reddish brown basal clay.	Appears intact.		2	Silcrete Flake in spit 1 Quartzite Core in spit 2	7153-7159		T
0.4	100	-	victoria.					Reddish brown sity clay loam; bioturbated			0		1-25.7		Ť
B53	25.5.21	0295447	6253296	10	2	20	N/A	boundary to reddish brown basal clay. Reddish brown sity clay loam; bioturbated	Appears intact.				7160-7166		t
B54	25.5.21	0295455	6253299	10	,	15	N/A	boundary to heavily bioturbated reddish brown basal day.	Heavily biohumated otherwise intact		0		7167-7173		
	23.21	02,5453	6253299				IIVA	Reddish brown sity clay loam; bioturbated	Heavily bioturbated otherwise intact		0		7407-74/3		+
855	24.5.21	0295419	6253288	10	2	20	N/A	boundary to reddish brown basal clay. Reddish brown sity clay loam; faint clay	Appears intact.				7174-7180		+
256		0205	c2*****		3	25	MA	mottles; bioturbated boundary to reddish	Anneary inter		0		7191-7100		
B56	25.5.21	0493435	6253298	10	,	-	N/A	brown basal clay. Reddish brown silty clay loam; abundant	Appears intact.				7181-7188		1
B57	24.5.21	0295404	6253293	10	2	17	N/A	clay mottles; highly irregular transition to bioturbated red brown clay.	Heavily bioturbated otherwise intact		0		7189-7193		
			7				4	Reddish brown sity clay loam; bioturbated				Silcrete Distal Fragment in spit 1 Silcrete Flake in spit 1 two Silcrete		See open area section	Ť
858	24.5.21	0295420	6253301	10	3	25	N/A	transition to reddish brown basal clay.	Appears intact.	5YR 4/3	4		7196- 7202	drawing.	1
B59	25.5.21	0295440	6253311	10	2	18	N/A	Reddish brown sity clay loam; bioturbated transition to reddish brown basal clay.	Appears intact.		1	Quartz Other in spit 1	7203-7209		1
	100							Reddish brown sity clay loam; sparse							1
B60	25.5.21	0295449	6253315	10	2	20	N/A	ironstone gravels; bioturbated transition to reddish brown basal day.	Appears intact.		0		7210-7216		
B61	25.5.21	0295427	6253317		2	21	N/A	Reddish brown silty clay loam; bioturbated transition to yellowish brown basel clay.	Appears intact.		a		7320- 7326		T
								Reddish brown sity clay loam; bioturbated			o				1
		0295424		10	2	18	N/A	transition to brown basel clay. Reddish brown silty clay loam; bioturbated	Appears intact.				7217-7223		+
B62	25.5.21	100000000000000000000000000000000000000	6253305	10	3	25	N/A	transition to brown basal clay. Reddish brown sity clay loam; bioturbated	Appears intact.		D .		7133-7138		1
B62	25.5.21	0295363	023303		100		1	transition to reddish brown basal clay. Tree			0		Meggans	*1 1 1	
B62 B63	24.5.21			00	0.00	1.5		roots throughout.	Bioturbated with tree roots.	7.5 YR 4/4 - 2.5YR 3/6			phone		+
B62 B63		0295363		10	3	24	N/A	Yellowish brown silty clay loam. Dry and			1				1
B62 B63	24.5.21			10	3	24	N/A	Yellowish brown silty clay loam. Dry and compact; small tree roots and decomposing			1				
B62 B63 B64	24.5.21	0295391			3	24	N/A	Yellowish brown silty clay loam. Dry and compact; small tree roots and decomposing stump; bioturbated transition to reddish brown silty clay base.	Bioturbated with tree roots.		1	Quartz Other in spit 1	2395-2401		
B62 B63 B64	24.5.21	0295391	6253298		3		1	Yellowish brown silty day loam. Dry and compact; small tree roots and decomposing stump; bioturbated transition to reddish brown silty day base Reddish brown silty day loam; reddish	Bioturbated with tree roots. Small tree roots.		1	The second second second	Meggans		
B62 B63 B64 B65 B66	24.5.21 1.6.21 2.6.21 1.6.21	0295391 0295400 0295400	6253298 6253302 6253305	10	3	25	N/A N/A	Yellowish brown airty day loam. Dry and compact, small tree roots and decomposing stump; bioturbated transition to reddish brown sitty clay base. Reddish brown sitty clay loam; reddish brown day base. Reddish brown sitty clay loam; reddish	Small tree roots.		1 0	Quartz Other in spit 1 Silcrete Other in spit 3	Meggans phone Meggans		
B62 B63 B64 B65 B66 B67	24.5.21 1.6.21 2.6.21 1.6.21	0295391 0295400 0295400 0295386	6253298 6253302 6253305 6253308	10 10	3 3	25 22 24	N/A N/A	Tellowish brown Silty clay loam. Dry and compact, small tree roots and decomposing stump; bloturbated transition to reddish prown silty clay loam; reddish brown clay base. Reddish brown silty clay loam; reddish brown clay base. Seddish brown silty clay loam; reddish brown clay base.	Small tree roots. Small tree roots.			The second second second	Meggans phone Meggans phone		
B62 B63 B64 B65 B66 B67	24.5.21 1.6.21 2.6.21 1.6.21	0295391 0295400 0295400	6253298 6253302 6253305	10	3 3 3	25	N/A N/A	Tellowish brown sity day loam. Dry and compact, small tree roots and decomposing stump; bioturbated transition to reddish brown sity day loam; Reddish brown sity day loam; reddish brown day base. Reddish brown day base. Reddish brown sity day loam; reddish brown sity day loam; reddish brown sity day loam; sity day loam; sity day loam; bourbated boundary to reddish brown sity day load; brown sity day.	Small tree roots.		0	The second second second	Meggans phone Meggans		
B62 B63 B64	24.5.21 1.6.21 2.6.21 1.6.21	0295391 0295400 0295400 0295386	6253298 6253302 6253305 6253308	10 10 10	3 3 3 3 3	25 22 24	N/A N/A	Tellowish brown sitty day loam. Dry and compact, small tree roots and decomposing stump; bioturbated transition to reddish brown sitty day loam; reddish brown city base. Reddish brown sitty day loam; reddish brown city base. Reddish brown sity day loam; reddish brown day base. Brown sity day loam; reddish brown sity day loam; bioturbated boundary to reddish brown sity day. Reddish brown sity day loam; reddish brown sit	Small tree roots. Small tree roots.			The second second second	Meggans phone Meggans phone 2402- 2408 2409- 2415		
B62 B63 B64 B65 B66 B67	26.5.21 1.6.21 2.6.21 1.6.21 1.6.21 2.6.21	0295400 0295400 0295400 0295386 0295395 0295404	6253398 6253302 6253305 6253308 6253308	10 10 10 10	3 3 3 3 3 3	25 22 24 25	N/A N/A N/A	Tellowish brown sitty clay loam. Dry and compact, small tree roots and decomposing stamp; bioturbated transition to reddish brown sitty day loam; reddish brown city base. Reddish brown sitty day loam; reddish brown city base. Reddish brown sitty day loam; reddish brown day base. Srown sitty day loam; bioturbated boundary to reddish brown sitty clay. Reddish brown sitty clay. Reddish brown sitty clay loam; reddish brown day base. Oark greysh brown sitty clay. Reddish brown sitty clay loam; reddish brown day base.	Small tree roots. Small tree roots. Bioturbated otherwise intact.		0	The second second second	Meggans phone Meggans phone 2402-2408		
B62 B63 B64 B65 B66 B67 B68 B69	26.5.21 2.6.21 1.6.21 1.6.21 1.6.21 2.6.21 1.6.21 1.6.21	0295400 0295400 0295400 0295386 0295395 0295404	6253302 6253302 6253305 6253308 6253315 6253318	10 10 10 10 10	3 3 3 3 3	25 22 24 25 30 22	N/A N/A N/A N/A N/A	reliowish brown sitty clay loam. Dry and compact, small tree roots and decomposing stump, bioturbated transition to reddish brown sitty clay loam; preddish brown clay base. Brown sitty cay loam; bioturbated boundary to reddish brown sitty clay loam; reddish brown clay base. Dark greyish brown sitty clay loam; reddish brown basel clay. Reddish brown sitty clay loam; bioturbated brown basel clay. Reddish brown sitty clay loam; bioturbated services basel clay.	Small tree roots. Small tree roots. Siourbated otherwise intact. Bioturbated otherwise intact. Appears intact.		0	The second second second	Meggans phone Meggans phone 2402-2408 2409-2415 Meggans phone		
B62 B63 B64 B65 B66 B67 B68 B69	26.5.21 1.6.21 2.6.21 1.6.21 1.6.21 2.6.21	0295400 0295400 0295400 0295386 0295395 0295404	6253298 6253302 6253305 6253308 6253308 6253315	10 10 10 10 10	3 3 3 3 3 3 3	25 22 24 26 30	N/A N/A N/A N/A	Tellowish brown sitty clay loam. Dry and compact, small tree roots and decomposing stamp; bioturbated transition to reddish brown sitty day loam; reddish brown city base. Reddish brown sitty day loam; reddish brown city base. Reddish brown sitty day loam; reddish brown day base. Srown sitty day loam; bioturbated boundary to reddish brown sitty clay. Reddish brown sitty clay. Reddish brown sitty clay loam; reddish brown day base. Oark greysh brown sitty clay. Reddish brown sitty clay loam; reddish brown day base.	Small tree roots. Small tree roots. Bioturbated otherwise intact. Bioturbated otherwise intact.		0	The second second second	Meggans phone Meggans phone 2402-2408 2409-2415 Meggans		

B74	4.6.21	0295463	6253280	10	3	19	N/A	Reddish brown silty clay loam; small gravels; bioturbated transition to reddish brown basal clay.	Appears intact.		0	1	2475- 2481		
7	2.1	-	-		Ī.	C		Very dark reddish brown silty clay loam;			1	Danker of the			
875	4,6.21	0295572	6253292	10	3	26	N/A	yellow red basal day. Dark red brown silty day loam; mottled red	Appears intact.	3YR 3/2 - 5YR 4/6		Quartz Other in spit 1	2482-2488	+	+
876	4.6.21	0295431	6253262	10	2	13	N/A	and brown basal clay.	Appears intact.	_	0		2526- 2532	-	+
877	4.6.21	0295440	6253268	10	z	18	N/A	Reddish brown sity clay loam; bioturbated transition to reddish brown basal clay.	Appears intact.		0		2519- 2525		
878	4.6.21	0295447	6253272	10	3	22	N/A	Dark red brown silty day loam; mottled red and brown basal day.	Appears intact.		o		2512-2518		
879	4.6.21		6253277		3	23	N/A	Reddish brown silty clay loam; bioturbated transition to reddish brown basal clay.	Marie Control		0		2002 2004		
3-	The state of				1		100	Dark red brown silty day loam; mottled red					2503-2511		+
B80	4.6.21	0239468	6253282	10	3	25	N/A	and brown basal clay. Dark red brown silty clay loam; degraded	Appears intact.			-	2496- 2502	-	+
								rock fragments; mottled red and brown			0				
881	4.6.21	0295475	6233287	10	3	26	N/A	besel day.	Appears intact.			Silcrete Other in spit 1 Silcrete in	2484- 2495		+
882	4.6.21	0295358	6253228	10	2	20	N/A	Reddish grey dayey loam; overlies reddish grey basal day.	Appears intact.		4	spit 1 Silcrete Proximal Flake in spit 1 Silcrete Distal Fragment in spit 1	2654- 2660	1 1 1 1 1	
883	4.6.21	0295378	6253232	10	2	17	N/A	Dark red brown silty day loam; mottled reddish brown basal day.	Appears intact.		0		2661-2667		
		100			1		-	Reddish grey clayey loam; sma I gravels;			0				+
B84	4.6.21	0295352	6253237	10	3	26	N/A	reddish brown basal clay. Reddish grey clayey loam; sma (gravels;	Appears intact.	_	-		2647-2653	-	+
B85 B86	4.6.21	0295359	6253252	10	3	23	N/A N/A	reddish brown basal day.	Appears intact. Appears intact.		1	Silcrete Other in spit 2	2640- 2646 2633- 2639	-	\perp
					,		1	Dark brown silty loam; dark red basal clay. Brown silty loam; small gravels; mixed	V-3		2	Silcrete Proximal Flake in spit 1	1.00		+
B87	4.6.21	0295350	6253266	10	3	23	N/A	brown and dark red basal day. Brown silty loam; mixed brown and red	Appears intact.	_	-	Silcrete Distal Fragment in spit 2	2625-2631	-	+
B88 B89	4.6.21	0295374	6253222	10	2	13	N/A N/A	basal clay Brown silty loam; reddish brown basal clay	Truncated and disturbed. Appears intact.	7.5YR 4/3 - 5YR 4/3	0	Silcrete Core in spit 1	2533-2539 2540-2546		+
889	4.6.21	0293380	6233233	10	-	15	N/A	Yellow brown dayey loam; mixed brown	Appears intact.	7,51K 4/3 · 51K 4/3			2340-2346		+
B90	4.6.21	0295391	6253232	10	2	18	N/A	and reddish brown basal day. Dark reddish brown silty clay loam; mottled	Appears intact.		1	Sikrete Proximal Flake in spit 2	2547- 2553	_	+
891	4.6.21	0295402	6253238	10	2	15	N/A	brown/red basal clay.	Appears intact.	5YR 5/2 - 5YR 3/3	0		2554- 2560		\perp
B92	4.6.21	0295410	6253241	10	2	12	N/A	Dark reddish brown silty clay loam; mottled brown/red basal clay.	Appears intact.		O.		2561- 2567		
B93	4.6.21	-	-	10	2	15	N/A	Dark reddish brown silty clay loam; mottled brown/red basal clay.			1	Silcrete Other in spit 2	2568- 2574	1 7	T
							1.7	Dark reddish brown silty clay loam; mottled	Appears intact.		0	JANG ELC OWIET IN SPIE Z	1-5		+
B94	4,6.21	0295427	6253249	10	2	20	N/A	brown/red basal clay. Dark reddish brown silty clay loam; mottled	Appears intact.	1	-	-	2582-2581		+
B95	4.6.21	0295435	6253253	10	2	15	N/A	brown/red basal clay.	Appears intact.		0		2583-2589		1
B96	4.6.21	0295445	6253258	10	2	20	N/A	Dark reddish brown silty clay loam; mottled brown/red basal clay.	Appears intact.		D	111	2590- 2596		
897	4.6.21	0295452	253265	10	3	30	N/A	Reddish brown sity clay loam; bioturbated transition to reddish brown basal clay.	Appears intact.		0		2597-2603		
								Reddish brown sity clay loam; bioturbated	1					-	+
898	4.6.21	0295461	6253269	10	2	20	N/A	transition to reddish brown basal clay with degraded bedrock:	Appears intact.		D		2604- 2610		
899	4.6.21	0295470	6253273	10	,	24	N/A	Reddish brown sity clay loam; bioturbated transition to reddish brown basal clay.	Appears intact.		0		2611-2617	-	
				-	1		17.	Reddish brown sity clay loam; bioturbated						1	+
B100	4.6.21	0295479	6253278	10	2	15	N/A	transition to yellowish brown basal clay. Dark brown silty clay loam; patchy clay;	Appears intact.		-		2618- 2624		+
	4240	i interes	13.40%					irregular transition to reddish brown plastic	4		0		of or land		П
CI	20.5.21	0295485	6253506	10	2	14	N/A	clay. Dark brown silty clay loam; bioturbated	Truncated and disturbed				6842-6848	+	+
C2.	20.5.21	0295502	6253498	10	2	21	N/A	boundary to red brown plastic clay. Medium brown silty clay loam; bioturbated	Appears intact.		0		6836-6841	-	+
G	20.5.21	0295518	6253489	10	2	20	N/A	boundary to reddish brown sitty clay base.	Appears intact.		1	Sikrete Core in spit 2	6829- 6835		1
C4	20.5.21	0295539	6253479	10	3	27	N/A	Dark brown silty clay loam; bioturbated boundary to red brown plastic clay.	Appears intact.		0	2000	6822-6828		
c c	20.5.21	0295353	£252202	10	,	16	N/A	Dark brown silty clay loam; bioturbated boundary to red brown plastic clay.	Appears intact.		0		6815-6821		
	1			0	-			Dark brown silty clay loam; bioturbated	A COLOR				F.+ 5.		+
C6	20.5.21	0295480	6253518	10	3	25	N/A	boundary to red brown plastic clay. Dark brown silty clay loam; biopores with	Appears intact.		-	_	6779- 6786	+	+
0		0295498				22	N/A	red clay infill; bioturbated boundary to red	Appears intact.		0		6787-6793		
	20.5.21	0233434	0235311	10	1	122	N/A	brown plastic day.	Appears intact.		1		6/6/-6/33		+
								Dark brown sifty day loam; scattered			0				
CB	20.5.21	0295517	6757504	10	,	27	N/A	charcoal and baked clay; reasonably abrupt transition to reddish brown plastic clay.	Annese interes				6794- 6800		
Lis .	20.3.21	0293317	6233301	10	1	2/	N/A	transition to reduish brown plastic clay.	Appears intact.				6/34-8800		+
			1 11			1	34.1	Dark brown silty clay loam; scattered			0				
2				3		-		charcoal and baked day; reasonably abrupt			-		A C	land.	
C9	20.5.21	0295533	6253493	10	3	25	N/A	transition to reddish brown plastic clay. Dark brown silty clay loam; scattered	Appears intact.	_	_		6801-6807	_	+
C10	20.5.21	0205255	£252202	***	,	23	N/A	charcoal and baked clay; reasonably abrupt transition to reddish brown plastic clay.	Annaer inter		0		6808-6814		
	3.41	0295355	20000	-	1	1		Dark brown silty clay loam; patchy clay;	Appears intact.				Jane 9844		+
C11	21.5.21	0295473	6253534	10	1	8	N/A	disturbed transition to reddish brown plastic clay.	Truncated and disturbed.		0	1000	6849-6853	1112	
							1	Dark brown silty clay loam; patchy clay;							
C12	21.5.21	0295494	6253523	10	2	17	N/A	irregular transition to reddish brown plastic clay.	Truncated and disturbed.		0	11 to 10 pl	6856- 6862		
		1			1			100 N.T				1177	11 7 1		
		100	100				5	Dark brown silty clay loam; patchy clay; reasonably abrupt transition to reddish			D	1100			
C13	21.5.21	0295510	6253515	10	2	18	N/A	brown plastic day.	Appears intact.	-	-		6863-6869	+	+
							100	Medium brown silty day loam; day in							
							W/2	biopores; reasonably abrupt boundary to	Account to the second s		0		erm erm		
C14	20.5.21	0295528	6Z33305	10	14	14	N/A	yellow brown plastic clay.	Appears intact.				6773-6779		+
			1				1	Dark brown silty clay loam; yellow brown			0		1		
C15	20.5.21	0295547	6253496	10	2	21	N/A	clay in biopores towards base; yellowish brown clay base.	Appears intact.			2	6766- 6772	1	
			7				-	Dark homen rifly clay beans emblaced				11			
	- F.		-	3.			100	Dark brown silty clay loam; scattered charcoal; bioturbated transition to reddish	ATT TO A		D		1		
C16	21.5.21	0295565	6253489	10	3	27	N/A	brown silty day.	Appears intact.		-		6759-6765	+	+
			1					Dark brown silty clay loam; clay in biopores;			0				
C17	21.5.21	0295582	6253480	10	2	15	N/A	bioturbated transition to red brown plastic clay.	Possibly truncated. Appears intact.				6914- 6920		
					1.		-	Dark brown silty clay loam; irregular	1 / 2		0				
C18	21.5.21	0295486	6253536	10	2	16	N/A	transition to reddish brown plastic day. Dark brown silty day loam; faint day	Petchy day indicates disturbance.		1		6870- 6876	-	+
C19	21 5 24	0205504	6393997	10	,	20	N/A	mottling biopores; reasonably abrupt	Annears inter		1	Quartz Distal Fragment in spit 1	6877-6883		
C19	21.5.21	0295504	and addition		1			transition to reddish brown plastic clay. Dark brown silty clay loam; faint clay	Appears intact.			Con as assess confinement in object 1	Jan. 6003		1
C20	21.2.21	0295953	6253519	10	3	26	N/A	mottling biopores; irregular transition to reddish brown plastic day.	Bioturbated or disturbed clay (unclear).		0		6884-6890	1 1	
			-				1	Dark brown silty clay loam; faint clay	1						30
						11	1	mottling biopores; reasonably abrupt			L	1		1	10

			-				-	Dark brown silty clay loam; faint clay mottling biopores; reasonably abrupt					3 . 3 13		
C22	21.5.21	0295560	6253505	10	2	21	N/A	transition to reddish brown plastic clay.	Appears intact.		0		6900- 6906		
								Dark brown silty clay loam; scattered charcoal; faint biopores; increasing clay							
		1					13.	with depth; bioturbated transition to brown			0		4.5.5		
C23	21.2.21	0295579	6253497	10	3	25	N/A	plastic clay. Dark brown homogenous silty clay loam;	Appears intact.				6907-6913		-
C24	21.5.21	0295596	6253485	10	3	24	N/A	abrupt boundary to red plastic clay.	Appears intact.		0		6738- 6744		
			7.77					Very dark greyish brown silty clay loam; becoming bleached from around 40cm		Dark grey: 10YR 3/2;					
								depth and with Fe/Mn flecks and small		Pale grey: 10YR 5/2;	0				
C25	21.5.21	0295614	6253476	10	,	48	N/A	nodules <5mm -%10; yellowish brown grading to reddish brown silty clay base.	Appears intact.	reddish base: 10YR 4/3.			6731-6737		
								Dark brown silty clay loam; heat affected	Possible burned tree root otherwise						
C26	21.5.21	0295630	6253467	10	,	45	N/A	towards base; clear boundary to yellowish grey brown silty clay base.	appears intact.		1	Sikrete Other in spit 1	6752- 6758		
	-	77					1	Very dark greyish brown silty clay loam;	***************************************						
C27	21.5.21	0295616	6253462	10	4	42	N/A	slight bleaching towards base; clear boundary to yellowish brown silty clay.	Appears intact.		1	Chert Distal Fragment in spit 5	6745- 6751	-11111	
7	1.5	1	-					Brown sitty day loam; increasing day with							
	4507		10.000	4		40.0	560	depth; bioturbated boundary to yellowish			0		chean .		
D1	25.5.21	0295225	6253441	10	3	27	N/A	brown silty clay base. Brown silty clay loam; bioturbated	Appears intact.	-			7497-7502	_	+
D2	25.5.21	0295244	6253437	10	3	26	N/A	boundary to yellowish brown silty clay base.	Appears intact.		0		7490- 7496		-
		1 100	100		1,15		1.	Yellowish brown silty clay loam; bioturbated boundary to yellowish brown	100	11	0			44.7	10
D3	25.5.21	0295263	6253433	10	2	18	N/A	silty clay base.	Appears intact.				7483-7489		
D4	25.5.21	0295283	6253432	,	4	21	N/A	Brown sitty clay loam; bioturbated transition to dark yellowish brown sitty clay.	Appears intact.	7.5YR 4/3 - 10YR 4/4	0		7439-7444 y		6-6
	-						-	Grey brown silty clay loam; faint clay			0				
05	25.5.21	0295302	6253427	10	3	24	N/A	mottling; yellowish brown silty clay base.	Appears intact.				7445-7452		+
								Brown silty clay loam; sparse ironstone gravels; increasing clay with depth;							
			J		100			bioturbated boundary to strong brown silty			0	1111	34.5		
D6	26.5.21	0295235	6253447	10	3	27	N/A	clay. Yellowish brown silty clay loam; increasing	Appears intact.				7355-7361		+
		1	1	5-1	1.10			clay with depth; strong brown silty day	territoria di		0		25.7	117	
D7	25.5.21	0295254	6253443	10	3	27	N/A	base. Yellowish brown silty clay loam; increasing	Appears intact.				7362-7368	_	+
	4000	100	2	3		14	-	clay with depth; bioturbated boundary to			0		14.50		
D8	25.5.21	0295274	6253442	10	2	20	N/A	dark yellowish brown silty clay base. Brown silty clay loam; bioturbated	Appears intact.	-		Sikrete Proximal Flake in spit 1 Chert	7417-7423		+
09	25.5.21	0295293	6253439	10	2	20	N/A	boundary to dark yellowish brown silty day	Appears intact.		2	Flake in spit 2	7424-7431		-
					1-					1			- 1		
							17.0	Reddish brown sity clay loam; faint clay			0				
D10	25.5.21	0295293	6253439	10	2	20	N/A	mottling increasing with depth; bioturbated transition to red brown silty clay base.	Appears intact.				7432-7438		
-	-				1			Reddish brown sity clay loam; faint clay							+
D11	26.5.21	0295245	6253455	10	3	25	N/A	mottling increasing with depth; bioturbated transition to strong brown sitty day base.	Appears intact.		0		7348-7354		
17 1					110			Yellowish brown silty day loam;							
D12	26.5.21	0295265	6253452	10	3	28	N/A	bioturbated transition to strong brown basal clay.	Appears intact.		0		7341-7347		-1
1	-							Yellowish brown silty clay loam;					-		
D13	26.5.21	0295285	6253450	10	3	25	N/A	bioturbated transition to strong brown basal clay.	Appears intact.		0		7334- 7340		
							1100	Brown sity day loam; day mottles;		Brown: 7.5YR 4/3;					
D14	26.5.21	0295304	6253449	10	3	24	N/A	bioturbated transition to strong brown silty clay.	Appears intact.	strong brown: 7.5YR 4/6	1	Quartzite Flake in spit 1	7327-7333		10
-	100							Brown silty clay loam; increasing clay with					100		
015	26.5.21	0295202	6253440	10	3	27	N/A	depth; bioturbated boundary to yellowish brown silty day base.	Appears intact.		0		7503-7509		
	-						100	Reddish brown sity clay loam; increasing					11 > 71		
D16	26.5.21	0295183	6253442	10	3	28	N/A	red clay content with depth; bioturbated transition to reddish brown sity clay base.	Appears intact.		0		7761-7767		
		-	7	1			10.00	Brown sitty day loam; increasing day with depth; scattered charcoal and baked day;			-				
	1000			1.			100	bioturbated boundary to yellowish brown			1	25 25 V V V	2000		
D17	26.5.21	0295163	6253444	10	3	26	N/A	sitty clay base. Reddish brown sitty clay loam; increasing	Appears intact.			Sikrete Core in spit 1	7754- 7760		+
	100							red day content with depth; bioturbated			0		7651 7748-		ш
D18	26.5.21	0295142	6253446	10	3	30	N/A	transition to reddish brown silty clay base. Reddish brown silty clay loam; increasing	Appears intact.				7753		+
	1-0	100	hwd.					red day content with depth; bioturbated			0		0.00		
D19	26.5.21	0295122	6253450	10	2	19	N/A	transition to reddish brown sitty clay base. Reddish brown sitty clay loam; scattered	Appears intact.				7643-7630	_	+
		- 1	110				1	clay patches; increasing red clay content		1	n				
D20	26.5.21	0295106	6253452	10	2	20	N/A	with depth; irregular transition to reddish brown sitty day base.	Mechanically disturbed.				7637-7643		
		11.1		-	1:-			Grey brown silty clay loam; irregular			0				+
021	26.5.21	0295085	6253454	10	2	19	N/A	transition to yellowish brown compact clay. Dark brown silty clay loam; sparse ironstone	Mechanically disturbed.				7630- 7636	_	+
							1.	gravels increasing with depth; very gravelly		Dark brown: 7.5YR	,				
D22	26.5.21	0295194	6253448	10	4	34	N/A	(sub-angular -13mm -%10) transition to dark yellowish brown sity clay.	Appears intact.	3/4; dark yellowish brown: 10YR 4/4.		Sikrete Flake in spit 3	7510-7516		
7				-		1		Dark brown silty clay loam; small ironstone				1.00			
D23	26.5.21	0295174	6253453	10	2	19	N/A	gravels; bioturbated boundary to reddish brown silty clay. Gravels continue.	Appears intact.		0		7517-7523		
1-					1			Yellowish brown silty clay loam; sparse							
								ironstone gravels; increasing day content with depth; bioturbated transition to strong			0		9		
D24	26.5.21	0295155	6253453	10	3	24	N/A	brown silty day.	Appears intact.				7602-7608		1
	1		1 7				1	Dark ye lowish brown silty day loam; bioturbated transition to reddish brown			0				
D25	26.5.21	0295136	6253457	10	3	25	N/A	ctey.	Appears intact.				7609-7615		1
	1		77.					Yellowish brown silty clay loam; increasing clay content with depth; bioturbated		11	0		15.4		
D26	26.5.21	0295117	6253459	10	3	26	N/A	transition to strong brown silty clay.	Appears intact.				7616-7622		
								Yellowish brown silty clay loam; sparse ironstone gravels; increasing clay content							
027		03000						with depth; bioturbated transition to			u		7633. 742		
027	26.5.21	0295098	6253462	10	Z	19	N/A	reddish brown silty clay. Reddish brown silty clay loam; bioturbated	Appears intact.				7623-7629		+
E1	27.5.21	0295332	6253437	10	2	21	N/A	boundary to reddish brown silty clay loam.	Appears intact.		0	-	7767-7774		
			- 7				1	Brown sitty day loam; few inclusions; bioturbated boundary to reddish brown			D				
EZ	27.5.21	0295353	62534385	10	2	20	N/A	sity day.	Appears intact.	-			7775-7781		
	-	100	7		1.			Reddish brown sity clay loam; faint clay mottles throughout; very clayey transition	in the second		0		1715		
E3	27.5.21	0295374	6253434	10	2	20	N/A	from 15cm to red brown silty day base.	Mechanically disturbed.				7782-7788		1
	27.5.21	0295393	6253431	10	2	22	N/A	Reddish brown sity clay loam; bioturbated boundary to reddish brown sity clay loam.	Appears intact.		0		7789-7795	4 1 = = :	
E4	100	1			1	-	1	Brown silty day loam; charcoal flecks;			-		7 4 7	40 1 44	
E4		0295411	6253430	10	3	28	N/A	Fe/Mn <5mm 10%; bioturbated transition to mottled yellow/red sitty clay.	Appears intact.		O		7796- 7802		
E4 E5	27.5.21				-		100	Reddish brown sity clay loam; bioturbated	Appears intact.		0		7.75	10.0	
E5	1327			40											-1
E5	1327	0295325	6253426	10	3	24	N/A	boundary to reddish brown silty clay loam. Reddish brown silty clay loam; bioturbated	просия инис.			Sikrete Core in spit 1 Sikrete Other	7832-7838		
1-	27.5.21		6253426 6253425	-	3	24	N/A N/A	Reddish brown sity clay loam; bioturbated boundary to reddish brown sity clay loam. Reddish brown sity clay loam; clear	Appears intact.		2	Sikrete Core in spit 1 Sikrete Other in spit 1	7825-7831		

		1					1.5	Dark greyish brown silty clay loam; sparse Fe/Mn flecks and small nodules; bioturbated boundary to brown silty basal		1	3	Chert Proximal Flake in spit 2 2 Chert		
E9	27.5.21	0295383	6253419	10	3	25	N/A	clay. Dark greyish brown silty clay loam; sparse	Appears intact.			Other in spit 2	7811-7817	
								Fe/Mn flecks and small nodules;			t I			
	100	1	5-4				15.	bioturbated boundary to thin bleached zone; bioturbated transition to brown silty	1.555	10YR 4/2-10YR 5/2-	0		12.	
E10	27.5.21	0295404	6253417	10	3	30	N/A	basal day.	Appears intact.	10YR 5/3			7803-7810	Y
	15.1	100	9.4				1	Reddish brown sity clay loam; Fe/Mn flecks and small nodules -10%; bioturbated			0		7-1	
E11	27.5.21	0295334	6253416	10	3	27	N/A	boundary to reddish brown silty clay loam. Reddish brown silty clay loam; Fe/Mn flecks					7869- 7873	
								and small nodules <10%; bioturbated			0	11.5		2 1000
E12	27.5.21	0295353	6253414	10	2	19	N/A	boundary to reddish brown silty clay loam. Dark greyish brown silty clay loam; Fe/Mn	Appears intact.				7876-7882	
							1	flecks and small nodules; increasing clay			,			
E13	27.5.21	0295373	6253411	10	2	20	N/A	with depth; bioturbated transition to reddish brown sitty clay.	Appears intact.			Silcrete Other in spit 1	7883-7889	
					1-			Reddish brown silty clay loam; scattered						
	100		1				100	baked day and charcoal increasing with depth; clayey transition to reddish brown			0			
E14	27.5.21	0295395	6253409	10	3	30	N/A	sity day.	Appears intact.				7890- 7896	
							100	Dark greyish brown silty clay loam; Fe/Mn flecks and small nodules; increasing clay				11.0		
							lus.	with depth; bioturbated transition to	CONTROL OF		0	1	1255	
E15	27.5.21	0295322	6253408	10	1	20	N/A	reddish brown silty clay. Greyish brown silty clay loam; Fe/Mn flecks	Appears intact.				7925-7931	
E16	27.5.21	0295342	6253406	10		23	N/A	and small nodules <10%; bioturbated transition to reddish brown silty day.	Appears intact.		0		7918-924	
E10	27.3.21	0253542	023406	100	1	-	IN/A	Dark brown silty clay loam; abundant baked	Appears intact.				1910-354	
	-			100			Harr	clay and charcoal from 3cm depth with a concentration in the 5W; transition to heat	Non cultural huming atherwise		0	11 11	+	21
E17	27.5.21	0295360	6253401	10	3	27	N/A	affected dark brown clay.	intact.	14			7911-7917	1, 1
	-							Reddish brown silty clay loam; sparse Fe/Mn flecks; yellowish brown bleached		11			-	1 1 1 1 1
	100			J. e.				zone Fe\Mn -10%; bioturbated transition to			0			
E18	27.5.21	0295380	6253400	10	4	40	N/A	reddish brown sitty day. Reddish brown sitty day loam; bioturbated	Appears intact.				7904-7910	
E19	28.5.21	0295327	6253395	10	2	19	N/A	boundary to reddish brown silty day loam.	Appears intact.		1	Sikrete Core in spit 2	7932- 7938	
1				7				Dark greyish brown silty clay loam; Fe/Mn flecks and small nodules <10%; bioturbated		11	0		1011	
E20	28.5.21	0295345	6253391	10	2	20	N/A	transition to reddish brown silty day.	Appears intact.				7939- 7945	
E21	28.5.21	0295367	6253390	10	3	33	N/A	Reddish brown silty clay loam; bioturbated boundary to reddish brown silty clay loam.	Appears intact.		0		7946- 7952	4 4 4
						1		Brown silty day loam; bioturbated			0			
E22	28.5.21	0295388	6253386	10	63	32	N/A	transition to brown sity day. 33 cm of mixed day rubble and soil fill	Appears intact.				7953-7959	
								overlying dark-brown silty clay loam with an			0		7000 7000	
E23	28.5.21	0295407	6253383	10	4	65	33	abrupt boundary to yellow brown clay. Reddish brown sity clay loam; bioturbated	Intact soil profile below fill capping.				7960-7966	
		-		2.1			1	transition to increasingly yellow brown			0			
E24	28.5.21	0295399	625394	10	,	47	N/A	from around 30cm; bioturbated transition to yellowish brown sitty clay.	Appears intact.				7897- 7903	41.
								Dark greyish brown silty clay loam; increasing clay with depth; reddish brown		7.5YR 4/2 - 7.5YR 2/5 -	o			
E25	31.5.21	0295337	6253386	10	3	29	N/A	basal clay.	Appears intact.	7.5YR 4/4	3	2	8039-8045	
T	1		1					Dark greyish brown silty loam; increasing clay with depth; mottled with biopores;					70 1	
E26	31.5.21	0295358	6253382	10	4	35	N/A	reddish brown clay base.	Appears intact.			Silcrete Proximal Flake in spit 2	8046-8052	
								Dark greyish brown silty loam; increasing clay with depth; mottled with biopores;			,		6.6	
E27	31.5.21	0295378	6253380	10	4	40	N/A	reddish brown clay base.	Appears intact.		Č	Sikrete Core in spit 1	8053-8059	
E28	31.5.21	0295346	6253373	10	3	27	N/A	Dark greyish brown silty loam; reddish brown clay base.	Appears intact.		0		8061-8067	
								Very dark greyish brown silty loam; mottled					1 7-3	
E29	31.5.21	0295367	6253372	10	4	39	N/A	with biopores; reddish/ grey brown mottled clay base.	Appears intact.	7.5YR 4/2 - 7.5YR 5/3	0		8068-8075	
71	1		7	-		-	1	Dark reddish brown silty clay loam; bioturbated transition to reddish brown						- + 1
E30	31.5.21	0295344	6253443	10	3	24	N/A	bioturbated transition to reddish brown basal day.	Appears intact.	5YR 3/3 - 2.5YR 3/2	1	Sikrete Flake in spit 1	Meggan's camera	
	1 2	1	F- 7	-	11-	-	11	Dark reddish brown silty clay loam; sparse		F = -1-5	-		100	
				1				degraded rock fragments increasing with			0		Meggan's	
E31	1.6.21	0295364	6253440	10	3	27	N/A	depth; mottled reddish brown clay base. Dark reddish brown silty clay loam;	Appears intact.				camera	_
		1		15		14		bioturbated transition to reddish brown	All and the second	-1	0		Meggan's	
E32	1.6.21	0295384	6253439	10	3	23	N/A	basal clay.	Appears intact.			Chert Proximal Flake in spit 1 2	camera	
			1					Less Consultation	Small animal burrow (mouse?)	Service III	1	Sikrete Proximal Flakes in spit 2		See open
E33	1.6.21	0295404	6253469	10	3	28	N/A	Dark brown silty loam; bioturbated transition to reddish brown silty day.	extending into east wall. Otherwise intact.	7.5 YR 3/2 (dark brown)	1	Chert Proximal Flake in spit 2 Silcrete Flake in spit 2	Meggan's camera	area section drawing.
			-		1			Dark brown silty loam; bioturbated						- January
E34	1.6.21	0295423	6253435	10	4	38	N/A	transition to mottled reddish and grey brown silty day.	Appears intact.	11	0		Meggan's camera	
		1						Dec. 1 This way to See 1						
								Dark greyish brown silty loam; Fe/Mn small			0	7 7 7 1		
			20					nodules from around 20cm increasing with depth; heavily bioturbated transition to	The second		1	1.6	1.71	
E35	8.6.21	0295434	6253424	10	4	37	N/A	yellowish brown silty clay. Brown silty clay loam; transition to	Appears intact.	7.5YR 4/2 - 7.5YR 2/5			2830- 2836	
					1		1	yellowish brown bleached zone at 15cm					7 - 1	
							100	with Fe\Mn flecks and small nodules; bioturbated transition to reddish brown		19	D			
E36	8.6.21	0295394	6253447	10	3	30	N/A	clay.	Appears intact.				2837- 2843	
		1	-				1	Pale grey brown silty clay loam; increasing yellowish brown clay with depth;					-	
						250	1	bioturbated transition to yellowish brown	and the second second		0			
E37	8.6.21	0295414	6253445	10	4	34	N/A	clay base. Medium grey brown silty clay toam	Appears intact.				2844- 2830	
		-					100	increasingly bleached with depth;			0			
E38	8.6.21	0295392	6253438	10	3	30	N/A	bioturbated transition to reddish brown clay base.	Appears intact.				2851-2857	
	1							T		1			-	
								Pale grey brown silty clay loam; increasing		1	0	* 1		
E39	8.6.21	0295411	6253437	10	3	31	N/A	clay with depth; bioturbated transition to yellowish brown clay base.	Appears intact.				2859- 2864	
								Medium grey brown silty clay loam;						
			1				0.00	bleached subsoil in biopores; increasingly bleached with depth; bioturbated transition			2	Silcrete Other in spit 1 Silcrete	11 (2.3)	
E40	8.6.21	0295401	6253428	10	4	34	N/A	to yellowish brown clay base.	Appears intact.			Proximal Flake in spit 2	2865- 2871	
							9	Medium grey brown sity clay loam; slight bleaching with depth; bioturbated		1	0		1.53	
E41	8.6.21	0295384	6253451	10	2	20	N/A	transition to reddish brown basal clay	Appears intact.				2872-2878	
							5.	Medium grey brown silty clay loam; slight bleached soil in biopores; bioturbated		. 14	0			
	8.6.21	0295403	6253448	10	3	25	N/A	transition to reddish brown basal clay	Appears intact.				2879- 2885	
E42	1		=.	5 1			5.1	Dark greyish brown silty day loam; abundant biopores; bioturbated transition	A		0			
I			625346	10	3	28	N/A	to reddish brown clay base.	Appears intact.				2886- 2892	
E42 E43	8.6.21	0295423	0000											
E43							9	Dark greyish brown silty day loam; bioturbated irregular transition to reddish	and the second		0		677	
I.	8.6.21 8.6.21	0295423	6253461	10	3	29	N/A		Appears intact.		0		2893-2899	

E46	8.6.21	0295404	6253460	10		39	N/A	increasing clay with depth; bioturbated transition to red brown silty clay base.	Appears intact.		0		2907- 2913	11011
E46	8.6.21	0295404	6253460	10	4	39	N/A	Reddish brown sity clay base.	Appears intact.	1 1		Sikrete Flake in spit 1 Sikrete Other in spit 1 Other in spit 1 Sikrete	2907- 2913	
								bleached with depth; reddish brown silty			2	Proximal Flake in spit 2 Silcrete	2014 2020	
E47	8.6.21	0295415	6233437	10	1	36	N/A	clay base. Medium grey brown sity clay loam;	Appears intact.			Other in spit 2	2914- 2920	
E48	8.6.21	0295424	6253456	10	3	28	N/A	yellowish clay increasing with depth in biopores; reddish brown silty clay base.	Appears intact.		1	Sikrete Other in spit 1	2921-2927	
1-1	1			1				Medium grey brown silty clay loam; bioturbated transition to yellow brown silty			2	Sikrete Proximal Flake in spit 1		
E49	8.6.21	0295386	6253470	10	3	24	N/A	clay. Medium grey brown silty clay loam; slight	Appears intact.	+		Sikrete Other in spit 1	2928- 2934	-
							1.1	bleaching with depth and Fe/Mn nodules Imm to 20%; bioturbated transition to			0			
E50	8.6.21	0295395	6253469	10	3	24	N/A	reddish brown basal day	Appears intact.				2935- 2941	
		1	1 1					Medium grey brown silty clay loam; slight bleaching with depth and Fe/Mn nodules			,	Annual Constitution		
E51	8.6.21	0295411	6253430	10	3	30	N/A	Omm to 10%; bioturbated transition to reddish brown basal clay	Appears intact.			Sikrete Other in spit 1 Chert Core in spit 2	2942-2948	
E52	8.6.21	0295415	6253469	10	4	33	N/A	Medium grey brown silty clay loam; bioturbated transition to red brown silty	Appears intact.		0		2949- 2955	
1 -			-				17	Medium grey brown silty clay loam; bioturbated transition to reddish brown			2	Sikrete Core in spit 1 Quartzite Distal		
E53	8:6.21	0295425	6253468	10	4	20	N/A	sitty clay. Grey brown silty clay loam; bioturbated	Appears intact.	_		Fragment in spit 2	2956- 2962	
E54	8.6.21	02956388	6253478	10	3	23	N/A	transition to reddish brown sitty day. Grey brown sitty day loam. Fe/Mn <5mm	Appears intact.	-	0		2963- 2969	
		0295397			2	22	N/A	<10%; patches of clay; disturbed irregular			0			
E55	8.6.21	0293897	6253480	10	1	144	N/A	transition to red brown clay. Medium grey brown silty clay loam; sparse	Mechanically disturbed.				2970- 2976	
							5	Fe/Mn flecks and small nodules; bioturbated yellowish brown transition to			0	11		
E36	8.6.21	0295406	6253480	10	3	31	N/A	reddish brown clay. Medium grey brown silty clay loam; sparse	Appears intact.	_	-		2977- 2983	
								Fe/Mn flecks and small nodules; bioturbated yellowish brown transition to			0			
E57	8.6.21	0295406	6253478	10	3	32	N/A	reddish brown clay. Dark brown silty clay loam; mottled	Appears intact.				2984- 2990	-
E58	8.6.21	0295425	6253478	10	2	21	N/A	transition to red brown day. Medium grey brown silty day loam;	Possible mechanical disturbance.		0		2991-2997	
E59	8.6.21	0295374	6253439	10	,	22	N/A	bioturbated clayey transition to red brown clay base.	Appears intact.		1	Chert Other in spit 1	2998-3004	11211
-							1	Grey brown silty clay loam over bleached horizon; bioturbated transition to yellowish	-					
E60	8.6.21	0295393	6253427	10	3	28	N/A	brown day.	Appears intact.		*	Chert Other in spit 2	3005-3011	
21.1			-			K	9	Grey brown sitty day loam over bleached horizon; bioturbated transition to yellowish	1.20		0		20.2.3	
E61	8.6.21	0295422	6253425	10	3	32	N/A	Grey brown sitty day loam over bleached	Appears intact.	1			3012-3018	-
E62	8.6.21	0295373	6253419	10	3	24	N/A	horizon; bioturbated transition to yellowish brown clay.	Appears intact.		0		3019-3025	
						1		Grey brown silty clay loam; sparse Fe/Mn flecks and small nodules; bioturbated						
E63	8.6.21	0295393	6253418	10	3	25	N/A	yellowish brown transition to reddish brown clay.	Appears intact.		1	Sikrete Distal Fragment in spit 1	3026- 3032	
								Grey brown sitty clay loam; bleached mottles with depth; bioturbated boundary						
E64	8.6.21	0295412	6253415	10	3	32	N/A	to yellowish brown. Grey brown silty clay loam; bioturbated	Appears intact.		_		3033- 3039	
E63	8.6.21	0295420	6253413	10	3	24	N/A	boundary to yellowish brown.	Appears intact.		1	Chert Proximal Flake in spit 2 Spit 1: 2 S Icrete Flakes 2 Silcrete	3040-3045	
			H					Grey brown silty day loam; bleached mottles with depth; bioturbated boundary	11-7-		14	Flake Tools 1 S Icrete Proximal Flake 2 Silcrete Other 1 Chert Other, Spit 2:1 Silcrete Proximal Flake 2 Silcrete Flakes 1 Chert Proximal Flake 1		
E66	8.6.21	0295382	6253409	10	3	30	N/A	to yellowish brown. Medium grey brown silty clay loam; reddish	Appears intact.			Sikrete Other 1 Chert Other. Sikrete Proximal Flake in spit 1	3046- 3052	
E67	8.6.21		6253405	10		33	N/A	brown clay mottling; bioturbated irregular transition to reddish brown clay.	Appears intact.		3	Sikrete Flake in spit 2 Sikrete Flake in spit 3	3053-3059	
F1	31.5.21	0294748	6253484	10	4	38	N/A	Dark reddish brown silty clay loam; reddish brown clay base.	Appears intact.	5YR 3/2	0	in spit s	7967-7974	77
-	31.3.21	0234746	0273404	1	1	30	n/A	Dark reddish brown silty clay loam;	Appears milace.	3183/2			7307-7374	
F2	31.5.21	0294766	6253482	10	3	30	N/A	degraded sandstone towards base; reddish grey brown clay base.	Appears intact.	5YR 3/2 - 5YR 5/2	0		7975-7981	
		150	200	1			9.5	Grey brown silty loam; ironstone gravels towards base; reddish brown day base	Country & Co	a market from	0	4 - 400 - 100 - 100		1001
F3	31.5.21	0294789	6253479	10	6	33	N/A	gavels continue. Grey brown silty loam; reddish brown clay	Appears intact.	7.5YR 5/4 - 7.5YR 5/6			7982-7989	
F4	31.5.21	0294803	6253479	10	4	40	N/A	base gavels continue. Dark reddish brown silty clay loam; reddish	Appears intact.	7,5YR 5/4 - 7.5YR 5/6	-	Sikrete Flake in spit 2	7990- 7996	_
F5	31.5.21	0294827	6253474	10	4	36	N/A	brown basal clay. Grey brown silty loam; bioturbated clayey	Appears intact.	5YR 3/2 - 7.5YR 4/4	0	1	7997- 8002	
F6	31.5.21	0294847	6253472	10	3	29	N/A	transition to reddish brown basal clay. Grey brown silty loam; bioturbated clayey	Appears intact.	7.5YR 5/4 - 7.5YR 5/6	1	Silcrete Other in spit 2	8004- 8010	
F7	31.5.21	0294866	6253470	10	3	27	N/A	transition to reddish brown basal clay. Grey brown silty loam; bioturbated clayey	Appears intact.	7.5YR 5/4 - 7.5YR 5/6	0		8011-8016	
F8	31.5.21	0294886	6253468	10	4	36	N/A	transition to reddish brown basal clay. Dark reddish brown silty clay loam; reddish	Appears intact.	7.5YR 5/4 - 7.5YR 5/6	0		8018- 8024	1
F9	31.5.21	0294907	6253466	10	2	20	N/A	brown basal clay.	Possibly truncated.	SYR 3/2 - 7.5YR 5/6	0		8025-8031	1
	101							10cm of mixed local clay and soil over grey brown sitty clay loam; Grey brown clay	Redeposited soil on surface		0			
F10	31.5.21	0294926	6253464	10	3	30	10	base. Reddish brown silty loam; Ironstone and	otherwise appears intact.	7.5YR 5/2			8032-8038	+
	=	-					1	shale gravels and pieces to 100mm %5; clayey base with large pieces of stone			0		1	
G1	31.5.21	0295501	6253687	3	6	30	N/A	continuing %10. Reddish brown sity loam; degraded shale;	Appears intact.	5YR 3/6		1	8076-8082 Y	6.
GZ	31.5.21	0295521	6253684	10	3	29	N/A	reddish brown clay base.	Appears intact.	5YR 4/4 - 5YR 3/6 Grey brown- 5YR 5/4;	0		8083-8085 n	
			1					Mixed dark greyish brown silty loam and		Yellowish brown- 5YR 5/4: reddish brown-	0	11		
G3	31.5.21	0295538	6253680	10	3	22	N/A	yellowish brown clayey loam; Bioturbated transition to reddish brown basal clay.	Mixed.	3/4; reddish brown- 3YR 3/6.			8090- 8096	
			7			1	1.	Brown sity loam; degraded sandstone fragments to %15; mottled dark reddish/			0			
G4	31.5.21	0295560	6253671	10	3	29	N/A	yellow basal clay; degraded sandstone continues.	Appears intact.	Brown-7.5YR 4/3			8098-8105	
		1					15	Dark reddish brown silty loam; degraded sandstone and shale; Dark reddish brown	1,53		0		13.7	
G5	31.5.21	0295578	6253674	10	3	30	N/A	basal clay. Dark reddish brown silty loam; increasingly	Appears intact.	5YR 3/4 - 7.5YR 3/3			8106-8113	
G6	31.5.21	0295599	6253670	10	4	40	N/A	clayey with depth. Dark reddish brown silty loam; ironstone	Appears intact.	5YR 3/4	0		8114-8119	
								gravels increasingly clayey with depth; dark reddish brown clay and degraded bedrock			a			
G7	31.5.21	0295618	6253667	10	3	30	N/A	base. Dark reddish brown silty loam; ironstone	Appears intact.	5YR 3/4			8122-8124	
			1 -					gravels increasingly clayey with depth; dark			0		Message	
G8	31.5.21	0295636	6253666	10	3	28	N/A	reddish brown clay and degraded bedrock base.	Appears intact.	5YR 3/4			Meggan's phone	
	1							Dark reddish brown silty loam; ironstone gravels increasingly clayey with depth; dark					The T	
	100							reddish brown clay and degraded bedrock			0		Meggan's	

G10	31.5.21	0295677	6253659	10	z	25	N/A	Dark reddish brown sity loam; ironstone gravels incresingly dayey with depth; dark reddish brown day and degraded bedrock base.	Appears intact.	3YR 3/4	0	Meggan's	

Test square ID	Date	Easting	Northing	Spit depth (cm)	Spit count	max. depth (cm)	Soil profile	Disturbance	Munsell	Artefacts Y/N	Photo No	Soil sample Y/N	Section drawing Y/N	pH
1	24.11.20	294730	6253784	10	1	10	Homogenous brown clayey loamover mottled reddish brown and white disturbed basal clay.	Inclusions of roadbase, rock and plastic.		N	2171-2172	Y		F
12	24.11.20	294755	6253774	10	1	10	Uniform brown loam over mottled reddish brown clay.	Sandstone fragments and pebble inclusions.		N	2169-2170	Y		
3	24.11.20	294698	6253776	10	9		Brown homogenous clayey loam over mottled brown and white clay.	Small pebbles <2cm; appear to be introduced.		N	2175- 2176	Y		
14	24.11.20	294696	6253678	10	1	10	Homogenous brown clayey loam over mottled brown and white disturbed basal clay.	One modern brick and small pebble inclusions		N	2173- 2174	Y		
A5	24.11.20	294711	6253664	10	2	11	Homogenous brown clayey loam over mottled brown and orange clay.	Small pebbles <2cm and a sandstone fragment; appear to be introduced.		N	2179-2180	Y		
46	24.11.20	294762	6253668	10	1	10	Homogenous brown clayey loam.	Appears intact.		N	2181-2182	Y		
31	24.11.20	295220	6253724	10		32	Homogenous grey brown clayey loam; Fe/Mn flecks and small nodules around 10%; Bioturbated boundary to reddish brown silty clay.	Appears intact.		N	2214-2220			
32	24.11.21	295254	6253711	10	4	33	Homogenous grey brown clayey loam; Fe/Mn flecks and small nodules around 10%; reddish clay mottles from spit 2; bioturbated boundary to reddish brown silty clay.	Bioturbated but otherwise appears intact.		N	2221-2226	Y		
B3	24.11.20	295252	6253703	10	4	40	Homogenous grey brown clayey loam; Fe/Mn flecks and small nodules around 10%; reddish clay mottles from spit 2; bioturbated boundary to reddish brown silty clay.	Appears somewhat mixed, possibly disturbed.		N	2227-2232	Y		
B4	25.11.20	295257	6253695	5	5	25	Homogenous grey brown clayey loam; bioturbated boundary to brown mottled clay.	Appears intact.		Ń	2233-2238	Y		
B5	25.11.20	295274	6253689	10	3	28	Homogenous grey brown clayey loam; bioturbated boundary to brown clay.	Appears intact.		N	2234-2244	Y		Ħ
B6	25.11.20	295307	6253619	10	3	24	Homogenous grey brown clayey loam; bioturbated boundary to brown mottled clay.	Appears intact.		N	2245-2250	Y		
B7	25.11.20	295307	6253609	10	2	17	Homogenous grey brown clayey loam; bioturbated boundary to reddish brown mottled clay.	Appears intact.		N	2251-2256	Y		111
B8	25.11.20	295306	6253598	10	2	18	Homogenous grey brown clayey loam; bioturbated boundary to reddish brown mottled clay.	Appears clumpy and truncated; disturbed basal clay; possibly ploughed.		N	2257-2262	Y		
B9	25.11.20	295316	6253612	10	2	20	Homogenous grey brown clayey loam; bioturbated boundary to reddish brown silty clay.	Surface very uneven; appears clumpy and truncated; disturbed basal clay; possibly ploughed.		N	2263-2268	Y		
B10	25.11.20	295295	6253705	10	3	27	Homogenous grey brown clayey loam; bioturbated boundary to grey brown silty clay. Shale in base.	Surface appears disturbed; otherwise intact.		N	2293- 2298	Y		
311	26.11.20	295302	6253706	10	2	17	Clumpy mix of clay and grey brown silty loam; disturbed reddish brown silty clay base.	Surface very uneven; appears clumpy and truncated; disturbed basal clay; possibly ploughed.		N	2269-2274	Y		
812	25.11.20	295309	6253705	10	2	20	Homogenous grey brown clayey loam; bioturbated boundary to reddish brown silty clay.	Surface appears disturbed; otherwise intact.		N	2281-2286	Y		
813	25.11.20	295312	6253696	10	2	17	Homogenous grey brown clayey loam; bioturbated boundary to reddish brown mottled clay.	Appears clumpy and truncated; disturbed basal clay; possibly ploughed.		N	2287-2292	Y		
814	25.11.20	295295	6253712	10	2	17	Homogenous grey brown clayey loam; bioturbated boundary to reddish brown mottled clay.	Appears clumpy and truncated; disturbed basal clay; possibly ploughed.		N	2275- 2280	Y		
815	26.11.20	295250	6253686	10	4	34	Homogenous grey brown clayey loam; bioturbated boundary to reddish brown mottled clay.	Appears somewhat mixed, possibly disturbed.		N	2305- 2310	Y		
B16	26.11.20	295247	6253699	10	2	20	Homogenous grey brown clayey loam; bioturbated boundary to reddish brown mottled clay.	Appears mixed; patchy clay throughout.		N	2299- 2304	Y		
B17	26.11.20	295245	6253713	10	4	32	Homogenous grey brown clayey loam; bioturbated boundary to reddish brown mottled clay.	Appears intact.		N	2325-2331	Y		1. 1

Excavatio	max.		Artefact	
n Unit ID	depth	Disturbance	count	Artefacts Details
_	(cm)	Annan intent	2	Chart Description Flate in smith A Occade to Considerate 1
E	25	Appears intact.	2	Chert Proximal Flake in spit 1, Quartzite Core in spit 1
N	25	Appears intact.	5	2 Silcrete Flakes in spit 1, 2 Silcrete Proximal Flakes in spit 1, Silcrete Other in spit 1.
NE	27	Appears intact.	3	Silcrete Proximal Flake in spit 1, 2 Chert Other in spit 1
l <u>.</u> .			_	Silcrete Proximal Flake in spit 1, 2 Silcrete Distal Fragment in spit 1, Silcrete Core in spit 1,
NE-1	26	Appears intact.	6	Silcrete Flake in spit 1, Silcrete Other in spit 2
NE-2	27	Appears intact.	2	2 Silcrete Proximal Flakes in spit 1
		Heavily bioturbated;		
		biopores to 5mm		
NE-3	27	diameter throughout.	2	Silcrete Other in spit 1, Chert Other in spit 1
		Heavily bioturbated;		
		biopores to 5mm		Silcrete Proximal Flake in spit 1, 6 silcrete flakes spit 1, Silcrete core in spit 1, Chert flake in
NE-4	27	diameter throughout.	10	spit 1, Chert Flake in spit 2.
		Heavily bioturbated;		
		biopores to 5mm		
NE-5	26	diameter throughout.	1	Silcrete Flake in spit 1
		Heavily bioturbated;		
		biopores to 5mm		Silcrete Distal Fragment in spit 1, 2 Silcrete Proximal Flakes in spit 1, Silcrete Other in spit
NE-6	26	diameter throughout.	5	1, Silcrete Flake in spit 2
NW	25	Appears intact.	3	Silcrete Distal Fragment in spit 1, 2 Silcrete Proximal Flakes in spit 1
NW-1	25	Appears intact.	3	Silcrete Flake Tool in spit 1, 2 Chert Distal Fragments in spit 1
				Quartzite Proximal Flake in spit 1, Chert Flake in spit 1, Silcrete Flake in spit 1, Silcrete
		Infilled animal burrow;		Proximal Flake in spit 1, Quartzite Core in spit 1, Silcrete Distal Fragment in spit 1, 2
NW-2	34	excavated as 'feature'.	9	Silcrete Other in spit 1, Chert Other in spit 1
		Infilled animal burrow;		
		heavily bioturbated;		
		biopores to 5mm		
NW-3	41	diameter throughout.	1	Silcrete Distal Fragment in spit 1
		Heavily bioturbated;		
		biopores to 5mm		
NW-4	25	diameter throughout.	0	
NW-5	25	Appears intact.	0	
NW-6	27	Appears intact.	4	Silcrete Proximal Flake in spit 1, 2 Silcrete Flake in spit 1, Chert Other in spit 1
NW-7	34	Appears intact.	2	Silcrete Proximal Flake in spit 1, Silcrete Other in spit 3
NW-8	25	Appears intact.	3	Silcrete Proximal Flake in spit 1, Silcrete Other in spit 1, Chert Other in spit 2
S	26	Appears intact.	2	Silcrete Distal Fragment in spit 1, Silcrete Core in spit 1
3	20	дресата пиаси.		Silcrete Core in spit 1, 2 Silcrete Flakes in spit 1, 3 Silcrete Others in spit 1, Quartzite
cr	27	Annoare intact	7	Proximal Flake in spit 1
SE SE-1	27	Appears intact. Appears intact.	7	Silcrete Proximal Flake in spit 1, Silcrete Flake in spit 1
SE-1 SE-2	27	Appears intact. Appears intact.	3	2 Silcrete Flakes in spit 1, Silcrete Flake in spit 1
-	27			
SE-3	27	Appears intact.	1	Fine Grained Siliceous Distal Fragment in spit 1
CE 4	27	Annoore intt	,	Quartzite Other in spit 1, Quartzite Proximal Flake in spit 1, Silcrete Proximal Flake in spit
SE-4	27	Appears intact.	3	1
SE-5	27	Appears intact.	5	Quartzite Core in spit 1, 2 Quartzite Other in spit 1, Silcrete Distal Fragment in spit 1
SE-6	26	Appears intact.	3	Silcrete Other in spit 1, Quartzite Proximal Flake in spit 1, Quartzite Core in spit 1
SW	27	Appears intact.	1	Silcrete Core in spit 1
SW-4	27	Appears intact.	2	Silcrete Flake in spit 1, Chert Other in spit 1
				Silcrete Flake in spit 1, Chert Other in spit 1, Silcrete Other in spit 1, Quartzite Proximal
W	27	Appears intact.	4	Flake in spit 1

Tost	max.		Artefacts	
Test square ID	depth	Disturbance	1/N/	Artefacts Details
•	(cm)		count	
E		Small animal burrow.	1	Silcrete Proximal Flake in spit 2
N		Appears intact.	1	Quartzite Flake in spit 1
NE		Appears intact.	1	Quartz Flake Tool in spit 2
NE-1		Burnt tree root.	1	Silcrete Other in spit 2
NE-2	30	Burnt tree root.	0	
				2 Silcrete Flakes in spit 1, 3 Silcrete Other in spit 1, 2 Silcrete Proximal Flakes in spit 1,
NW	26	Appears intact.	9	Flake in spit 1, Silcrete Distal Fragment in spit 1
				Silcrete Proximal Flake in spit 1, 2 Silcrete Flakes in spit 1, Silcrete Core in spit 1, Quartzite
				Other in spit 1; 6 Silcrete Flakess in spit 2, 3 Silcrete Proximal Flakes in spit 2, 7 Silcrete
NW-1		Appears intact.	24	Other in spit 2, Other in spit 2; Silcrete Flake Tool in spit 3, Silcrete Other in spit 3.
NW-2		Appears intact.	3	Silcrete Other in spit 3, Silcrete Flake in spit 2, Flake in spit 2
NW-3	29	Appears intact.	3	Silcrete Core in spit 2, Silcrete Flake in spit 2, Silcrete Proximal Flake in spit 2
			40	3 Silcrete Other in spit 1; 2 Silcrete Flakes in spit 2, 2 Silcrete Distal Fragments in spit 2,
NW-4	29	Appears intact.	13	Flake Tool in spit 2, 3 Silcrete Other in spit 2, Other in spit 2; Silcrete Flake in spit 3
				2 Silcrete Flakes in spit 1, Silcrete Proximal Flake in spit 1, 2 Silcrete Distal Fragments in
NW-5	29	Appears intact.	9	spit 1; Silcrete Flake in spit 2, 2 Silcrete Cores in spit 2, Silcrete Other in spit 2
ADA/ C	٦.		١,	Silcrete Distal Fragment in spit 1, Silcrete Flake in spit 1; Silcrete Other in spit 2, Other in
NW-6 NW-7		Appears intact.	3	spit 2 Silcrete Flake in spit 1, Silcrete Flake in spit 2, Silcrete Distal Fragment in spit 2
		Appears intact.		
S SE		Appears intact. Appears intact.	1	2 Silcrete Other in spit 1 Silcrete Proximal Flake in spit 2
3E	32	Appears intact.	1	Silcrete Flake Tool in spit 1; Silcrete Other in spit 2, Silcrete Flake in spit 2, Silcrete
sw	21	Annoore intact	4	Proximal Flake in spit 2
SW-1		Appears intact. Appears intact.	4	Silcrete Distal Fragment in spit 2, 2 Silcrete Flakes in spit 2, Silcrete Other in spit 2
344-1	25	Арреать ппаст.	+ +	2 Silcrete Flakes in spit 1, 2 Silcrete Other in spit 1, Quartz Other in spit 1; 2 Silcrete Flakes
SW-2	20	Appears intact.	10	in spit 2, 2 Silcrete Other in spit 2, Silcrete Distal Fragment in spit 2
344-2	23	пррсата ппасс.	10	2 Silcrete Flakes in spit 1, 2 Silcrete Proximal Flake in spit 1, Distal Fragment in spit 1,
				Silcrete Distal Fragment in spit 1, Silcrete Other in spit 1; Silcrete Distal Fragment in spit 2,
SW-3	29	Appears intact.	11	Quartzite Flake in spit 2, Silcrete Flake in spit 2, Silcrete Other in spit 2
-		rippears intage		Fine Grained Siliceous Flake in spit 1, 2 Silcrete Flakes in spit 1, Silcrete Distal Fragment in
				spit 1, Silcrete Core in spit 1, 2 Silcrete Other in spit 1; 4 Silcrete Distal Fragment in spit 2,
SW-4	19	Appears intact.	14	Quartz Distal Fragment in spit 2, Silcrete Flake in spit 2, Silcrete Other in spit 2
				Silcrete Proximal Flake in spit 1, 4 Silcrete Flakes in spit 1, Silcrete Distal Fragment in spit
				1, Proximal Flake in spit 1, Silcrete Other in spit 1; 3 Silcrete Flakes in spit 2, Silcrete Distal
SW-5	29	Appears intact.	13	Fragment in spit 2, Silcrete Other in spit 2
				Silcrete Proximal Flake in spit 1, Silcrete Other in spit 1; Silcrete Proximal Flake in spit 2, 3
				Silcrete Flakes in spit 2, 2 Silcrete Distal Fragments in spit 2, Silcrete Other in spit 2, 4
SW-6	29	Appears intact.	13	Other in spit 2
				Quartzite Distal Fragment in spit 1, Silcrete Flake in spit 1, Silcrete Core in spit 1; 2 Silcrete
				Proximal Flakes in spit 2, 4 Silcrete Flakes in spit 2, 2 Silcrete Distal Fragments in spit 2,
SW-7	29	Appears intact.	16	Silcrete Core in spit 2, Chert Flake in spit 2, 3 Silcrete Other in spit 2
				Silcrete Other in spit 1; Silcrete Proximal Flake in spit 2, 2 Silcrete Cores in spit 2, Silcrete
				Other in spit 2; Silcrete Proximal Flake in spit 3, Silcrete Distal Fragment in spit 3, Silcrete
w	29	Appears intact.	8	Other in spit 3

APPENDIX C **ARTEFACT CATALOGUE**

la.	Recording Date	Area ID	Pit ID	Expansion	Spit ID	Artefact Material	Artefact Type	Platform Surface	Platform Type	Termination	Cross-section	Length (mm)	Width (mm)	Thickness (mm)	Weight	Comment	ISPARE COLI
1	17-May A		,	ID N/A	,	Silcrete	Distal Fragment	Indeterminate	Indeterminate	Feather	High/Strong	13.29	17.49	4.71	N/A		
2	17-May A			N/A		Silcrete	Flake	Faceted	Shattered	Feather	High/Weak	13.59	8.09		N/A		1
3	17-May A		14			Quartz	Flaked Piece	Indeterminate	Indeterminate			N/A N			N/A		
4	19-May B			N/A		Silcrete	Distal Fragment	Indeterminate	Indeterminate	Feather	1	14.81 N	/A	N/A	N/A		
5	21-May B			N/A		Silcrete	Other	Indeterminate	Indeterminate			9.69 N			N/A	0	
6	18-May B	_		N/A		Silcrete	Distal Fragment	Indeterminate	Indeterminate	Feather		16.83 N		N/A	1.0		-
7	18-May B		12			Silcrete	Core	Indeterminate	Indeterminate		101.0	24.18 N		N/A	6.7		_
8	18-May B		12			Silcrete	Flake	Flake Scar	Wide	Feather	High/Strong	20.51	26.19		6.7		_
10	19-May B 19-May B		13			Silcrete Silcrete	Distal Fragment Flake	Indeterminate Flake Scar	Indeterminate Wide	Feather Feather	Low/Weak	11.26 N	/A 22.54	N/A 3.84	0.8		_
11	19-May B		24			Silcrete	Proximal Flake	Faceted	Shattered	I Caulei	Low/Weak	17.69 N		N/A	0.7		_
12	20-May B		25			Silcrete	Other	Indeterminate	Indeterminate		TDW/ ACCTV	13.42 N		N/A	0.6		
13	20-May B		25			Silcrete	Other	Indeterminate	Indeterminate			6.57 N			N/A	1	
14	20-May B		26		1	Chert	Proximal Flake	Faceted	Shattered		Low/Weak	14.46 N		N/A	0.4		
15	20-May B		26	N/A	1	Quartz	Distal Fragment	Indeterminate	Indeterminate	Feather	Low/Weak	12.15 N	/A	N/A	N/A		
16	24-May B	-	34		1	Silcrete	Distal Fragment	Indeterminate	Indeterminate	Feather		6.97 N			N/A		
17	24-May B		24	N/A		Chert	Proximal Flake	Faceted	Shattered			20.58 N			N/A		
18	24-May B	-	24			Chert	Other	Indeterminate	Indeterminate	1		10.15 N			N/A		-
19	24-May B	-	24			Quartzite	Other	indeterminate	Indeterminate		-	12.69 N			N/A		-
20	24-May B	_	37			Silcrete	Other	Indeterminate	Indeterminate	-	_	12.58 N			N/A		_
21	25-May 8 24-May 8		38 41			Silcrete Quartzite	Other Core	Indeterminate Indeterminate	Indeterminate Indeterminate			18.22 N	TA .	N/A	N/A	Unidirectional/conical 3 flake scars	-
23	24-May B		44	N/A		Silcrete	Distal Fragment	Indeterminate	Indeterminate	Feather		7.78 N	/Δ	N/A	N/A		i -
24	25-May B		48	N/A		Chert	Proximal Flake	Flake Scar	Focal			20.61 N			N/A		
25	25-May B		48			Silcrete	Proximal Flake	Flake Scar	Focal			12.74 N			N/A		
26	24-May B		50				Other				The second	12.27 N			N/A		
27	25-May B		52	N/A	- 1	Silcrete	Flake	Faceted	Focal	Step	High/Strong	23.3	15.09	5.01	1,7		1
28	25-May B		52			Quartzite	Core					24.93 N		N/A		Multidirectional 4 flake scars	
29	25-May B		58	N/A		Silcrete	Distal Fragment			Feather		13.45 N	/A	N/A	N/A	1.00 0 0 0 0 0 0 0 0	
30	25-May B		58			Silcrete	Flake	Flake Scar	Wide	Feather	+	10.4	12.4				-
31	25-May B 25-May B		58 58			Silcrete	Other				_	10.59 N 7.72 N		N/A N/A	N/A		_
33	25-May B	-	58			Silcrete Chert	Other Other				_	14.09 N			N/A N/A		_
34	25-May B	_	59			Quartz	Other			1	1	12.32 N			N/A	-	1
35	2-Jun B		65			Quartz	Other				_	20.89 N			N/A		
36	1-Jun B	_	66			Silcrete	Other				1	9.18 N			N/A		
37	3-Jun B		75			Quartz	Other					17.78 N			N/A	±=	
38	2-Jun B		85	N/A	- 2	Silcrete	Other					18.49 N	/A	N/A	1.9		
39	2-Jun B		87			Silcrete	Proximal Flake	Faceted	Focal			13.39 N		N/A	0.8		
40	2-Jun B	_	87			Silcrete	Distal Fragment			Feather		10.37 N			N/A	Later - 1 - 1 - 1 - 1	
41 N			89			Silcrete	Core					41.88 N		N/A		Multidirectional 5 flake scars	_
42 1			90			Silcrete	Proximal Flake	Faceted	Focal			9.03 N			N/A		
43 M	V/A B		93			Silcrete	Other					7.78 N		N/A N/A	N/A	Bidirectional 4 flake scars	_
45	24-May C		19	N/A		Silcrete L Quartz	Core Distal Fragment					25.58 N 6.47 N			N/A	Didirectional 4 hake scars	_
46	21-May C		26			Silcrete	Other					9.66 N			N/A		_
47	21-May C		27			Chert	Distal Fragment			Feather		17.06 N			N/A	-	
48	26-May D	- 1		N/A		Silcrete	Proximal Flake	Flake Scar	Wide			17.58 N	/A		N/A		
49	26-May D			N/A		Chert	Flake	Flake Scar	Wide	Feather	Low/Weak	16.41	12.34	3.52			
50	26-May D		14		1	Quartzite	Flake	Faceted	Focal	Bipolar	High/Strong	15.42	11.61	6.19	1.3		
51	26-May D		17			Silcrete	Core					24.93 N		N/A		Bidirectional 2 flake scars	
52	26-May D		22			Silcrete	Flake	Faceted	Focal	Feather	Low/Weak	14.86	12.22			Weathered flake	
53	27-May E			N/A		Silcrete	Core					27.2 N		N/A		Unidirectional 1 flake scar	-
54 55	27-May E 27-May E			N/A N/A		Silcrete Chert	Other Proximal Flake	Flake Scar	Wide	+		11.37 N 10.82 N			N/A N/A		_
56	27-May E			N/A		Chert	Other	Flake Scar	WIGE			17.33 N			N/A		_
57	27-May E			N/A		Chert	Other					8.41 N		N/A	N/A		
58	27-May E		13			Silcrete	Other					11.52 N			N/A		
59	28-May E		19	N/A		Silcrete	Core					25.13 N		N/A		Conical unidirectional 2 flake scars	rs
60	31-May E		26	N/A	7	Silcrete	Proximal Flake	Flake Scar	Wide			15.49 N	/A	N/A	N/A		
61	31-May E		27			Silcrete	Core					20.76 N			N/A	multidirectional 3 flake scars	
62	1-Jun E	_	30			Silcrete	Flake	Faceted	Shattered	Feather	Low/Weak	8.64	13.19				1
63	1-Jun E		40			Silcrete	Other					9.57 N			N/A	median flake	-
64	7-Jun E		40			Silcrete	Proximal Flake	Faceted	Focal	E	Laur (Marx)	22.31 N			N/A		+
66	8-Jun E 8-Jun E		47			Silcrete Silcrete	Flake Other	Faceted Faceted	Focal	Feather Feather	Low/Weak	14.8 12.36 N	8.66		N/A 0.6	Split flake(right)	
67	8-Jun E		47			Petrified Wood	Other			- Labores		9.86 N			N/A	Angular fragment petrified wood	
68	8-Jun E		47			Silcrete	Proximal Flake	Flake Scar	Wide			7.65 N			N/A	a magnitude particular account	
69	8-Jun E		47			Silcrete	Other	1	1-			7.06 N		N/A	N/A	Angular fragment	
70	7-Jun E		48			Silcrete	Other					6.09 N		N/A	N/A	Angular fragment	
71	7-Aug E		49			Silcrete	Proximal Flake	Flake Scar	Wide			4.39 N			N/A		
72	7-Jun E		49			Silcrete	Other		-			7.56 N	/A		N/A	Angular fragment	-
73	7-Jun E		51	N/A	1	Silcrete	Other			1		12.55 N	/A		N/A	Angular fragment	-
74	7-Jun E		51			Chert	Core			_		13.48 N		N/A		multidirectional eshasted core 3 ft	
75	7-Jun E		53			Silcrete	Core		-	E-star	1	22.51 N		N/A		unidirectional flake core truncated	o flake scar
76 77	7-Jun E 8-Jun E		53	N/A N/A		Quartzite Chert	Distal Fragment Other			Feather	+	9.62 N 11.6 N		N/A N/A	N/A N/A	Annalus formand	
78	8-Jun E		60			Chert	Other				1	9.68 N			N/A	Angular fragment Angular fragment	
79	9-Jun E		63			Silcrete	Distal Fragment			Feather	1	16.26 N	/A		N/A	Date in Spinson	
80	8-Jun E	_		N/A		Chert	Proximal Flake	Flake Scar	Wide			11.88 N	/A		N/A		
81	9-Jun E			N/A		Silcrete	Flake	Flake Scar	Wide	Feather	High/Strong	22.86	15.04				
82	9-Jun E			N/A		Silcrete	Flake Tool	Flake Scar	Indeterminate			11.87	16.53	4.67		Retouched backed geomethric mic	crolit
83	9-Jun E		66	N/A		Silicrete	Flake Tool	Flake Scar	Indeterminate			16.41	13.46			Retouched backed geomethric mic	
84	9-Jun E			N/A N/A		Silcrete	Proximal Flake	Flake Scar	Focal			12.93 N			N/A	1	1

		*					-						
86	9-Jun E	66 N/A		1 Silcrete	Other		0	()		9.85 N/A	N/A	N/A	Angular fragment
87	9-Jun E	66 N/A	A	1 Silcrete	Other					13 N/A	N/A	N/A	Angular fragment
88	9-Jun E	66 N/A	A	1 Chert	Other	The same of the sa				12.06 N/A	N/A	N/A	Angular fragment
89	9-Jun E	66 N/A	A	2 Silcrete	Proximal Flake	Faceted	Focal			8.06 N/A	N/A	N/A	117.72
90	9-Jun E	66 N/A		2 Silcrete	Flake	Faceted	Focal	Hinge	High/Weak		32 3.		4
91		66 N/A		2 Silcrete	Flake	Faceted	Focal	Feather	Low/Weak			8 N/A	+
92	9-Jun E 9-Jun E	66 N/A			Proximal Flake	Faceted	Wide	reather	LOW/ WEAK	14.25 N/A	N/Δ		+
				2 Chert	T. Control of the Control	Laceted	WIDE					N/A	+ + +
93	9-Jun E	66 N/A	Α	2 Silcrete	Other		-			9.5 N/A	N/A	N/A	
94	9-Jun E	66 N/A		2 Chert	Other					9.64 N/A	N/A	N/A	
95	9-Jun E	67 N/A	A	1 Silcrete	Proximal Flake	Flake Scar	Wide			12.78 N/A	N/A	N/A	
96	9-Jun E	67 N/A	A	2 Silcrete	Flake	Faceted	Focal	Feather	Low/Weak			58	
97	9-Jun E	67 N/A	A	3 Silcrete	Flake	Flake Scar	Wide	Bipolar	High/Weak	12.95 6	85 2.	75 0.	3
98	28-May F	4 N/A	Α	2 Silcrete	Flake	Faceted	Wide	Bipolar	High/Strong	18.9 1	6.4	13 1.	5
99	28-May F	6 N/A		2 Silcrete	Other					11.18 N/A	N/A	N/A	
100 N/A	B	82 N/A		1 Silcrete	Other		1	1		15.25 N/A	N/A	N/A	median broken flake
101 N/A		82 N/A		1 Silcrete	Medial Flake			1		15.17 N/A	N/A	N/A	median broken flake
102 N/A		82 N/A		1 Silcrete	Proximal Flake	Faceted	Wide	1		10.4 N/A	N/A	N/A	median proken hake
						raceted	Wide	-					
103 N/A		82 N/A	Α	1 Silcrete	Distal Fragment		to and a second			15.72 N/A	N/A	N/A	
104	1-Jun B	58 N		1 Silcrete	Flake	Faceted	Wide	Feather	Low/Weak	14.19 11			7
105	1-Jun B	58 N		1 Silcrete	Proximal Flake	Flake Scar	Wide			15.76 N/A	N/A	N/A	1
106	1-Jun B	58 N		1 Silcrete	Flake	Flake Scar	Wide	Feather	Low/Weak	13.22 14	33 4.	64 0.	9
107	1-Jun B	58 N	-	1 Silcrete	Proximal Flake	Faceted	Focal			6.79 N/A	N/A	N/A	
108	1-Jun B	58 N		1 Silcrete	Other			1		8.84 N/A	N/A	N/A	Angular fragment
109	2-Jun B	58 NE		1 Silcrete	Proximal Flake	Faceted	Focal	1		14.23 N/A	N/A	N/A	Political in agricult
							Cuar						Annulus fromment
110	2-Jun B	58 NE		1 Chert	Other					16.39 N/A	N/A	N/A	Angular fragment
111	2-Jun B	58 NE		1 Chert	Other		+	*		11.25 N/A	N/A	N/A	Angular fragment
112	7-Jun B	58 NE-		2 Silcrete	Other					12.88 N/A	N/A	N/A	Angular fragment
113	7-Jun B	58 NE-		1 Silcrete	Proximal Flake	Faceted	Wide			12.01 N/A	N/A	N/A	Land of the second of the seco
114	7-Jun B	58 NE-	-2	1 Silcrete	Proximal Flake	Faceted	Wide			10.58 N/A	N/A	N/A	La company of the com
115	8-Jun B	58 NE-	-3	1 Silcrete	Other	113.5				9.65 N/A	N/A	N/A	Angular fragment
116	8-Jun B	58 NE-		1 Chert	Other					8.27 N/A	N/A	N/A	Angular fragment
117	7-Jun B	58 NE-	4	2 Chert	Flake	Flake Scar	Wide	Feather	Low/Weak		19 2		Ringular II agricult
									THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TW				
118	9-Jun B	58 NE-	2	1 Silcrete	Flake	Faceted	Wide	Feather	High/Strong		14 7.		
119	9-Jun B	58 NE-		1 Silcrete	Proximal Flake	Faceted	Focal					.8 0.	
120	9-Jun B	58 NE-		1 Silcrete	Distal Fragment			Feather		14.78 N/A	N/A	N/A	Platrform removed
121	9-Jun B	58 NE-		1 Silcrete	Proximal Flake	Faceted	Focal			8.56 N/A	N/A	N/A	
122	9-Jun B	58 NE-	-6	1 Silcrete	Other	12.75				8.71 N/A	N/A	N/A	Angular fragment
123	9-Jun B	58 NE-		2 Silcrete	Flake	Faceted	Focal	Feather	Low/Weak		7.5 3.		4
124	1-Jun B	58 SE		1 Silcrete	Flake	Faceted	Focal	Hinge	High/Strong	31.84	12 10.	18 3.	6
125	1-Jun B	58 SE	_	1 Silcrete	Core	Taccicu	TOCAL	rinige	riigiyaddig	23.18 N/A	N/A		1 multidirectional 3 flake scars
					-								
126	1-Jun B	58 SE		1 Silcrete	Other					12.98 N/A	N/A	N/A	median broken flake
127	1-Jun B	58 SE		1 Silcrete	Flake	Flake Scar	Wide	Feather	Low/Weak	7,700		14 0.	3
128	1-Jun B	58 SE		1 Quartzite	Proximal Flake	Faceted	Focal			15.26 N/A	N/A	N/A	
129	1-Jun B	58 SE		1 Silcrete	Other					12.3 N/A	N/A	N/A	Angular fragment
130	1-Jun B	58 SE		1 Silcrete	Other					13.17 N/A	N/A	N/A	Angular fragment
131	7-Jun B			1 Silcrete	Flake	Faceted	Focal	Feather	High/Strong	27.11 13	84 7.	1 N/A	
		58 SE-										N/A	
132	7-Jun B	58 SE-	1	1 Silcrete	Proximal Flake	Flake Scar	Focal			6.64 N/A	N/A	N/A	
132 133	7-Jun B 7-Jun B	58 SE-	-1	1 Silcrete 1 Silcrete	Proximal Flake Unidentified	Flake Scar	Focal			6.64 N/A	N/A		
132 133 134	7-Jun B 7-Jun B 7-Jun B	58 SE- 58 SE- 58 SE-	-1 -2 -2	1 Silcrete 1 Silcrete 1 Silcrete	Proximal Flake Unidentified Flake	Flake Scar Faceted	Focal Focal	Feather	Low/Weak	6.64 N/A 15.01	N/A 8.7 4.	15 0.	
132 133 134 135	7-Jun B 7-Jun B 7-Jun B 7-Jun B	58 SE- 58 SE- 58 SE- 58 SE-	-1 -2 -2 -2	1 Silcrete 1 Silcrete 1 Silcrete 1 Silcrete	Proximal Flake Unidentified Flake Flake	Flake Scar	Focal	Hinge		6.64 N/A 15.01 11.71 7	N/A 3.7 4. 13 3.	25 O. 55 O.	
132 133 134 135 136	7-Jun B 7-Jun B 7-Jun B 7-Jun B 7-Jun B	58 SE- 58 SE- 58 SE- 58 SE- 58 SE-	-1 -2 -2 -2 -2 -3	1 Silcrete 1 Silcrete	Proximal Flake Unidentified Flake Flake	Flake Scar Faceted	Focal Focal		Low/Weak	6.54 N/A 15.01 11.71 7, 17.95 N/A	N/A 8.7 4.	15 0.	
132 133 134 135 136	7-Jun B 7-Jun B 7-Jun B 7-Jun B 7-Jun B	58 SE- 58 SE- 58 SE- 58 SE- 58 SE-	-1 -2 -2 -2 -2 -3	1 Silcrete 1 Silcrete 1 Silcrete 1 Silcrete	Proximal Flake Unidentified Flake Flake	Flake Scar Faceted	Focal	Hinge	Low/Weak	6.54 N/A 15.01 11.71 7, 17.95 N/A	N/A 3.7 4. 13 3.	25 O. 55 O.	
132 133 134 135	7-Jun B 7-Jun B 7-Jun B 7-Jun B	58 SE- 58 SE- 58 SE- 58 SE-	1 -2 -2 -2 -2 -3 -4	1 Silcrete 1 Silcrete 1 Silcrete 1 Silcrete 1 Silcrete 1 Fine Grained Siliceou	Proximal Flake Unidentified Flake Flake S Distal Fragment	Flake Scar Faceted Faceted	Focal Focal Wide	Hinge	Low/Weak	6.64 N/A 15.01 11.71 7	N/A 3.7 4. 13 3. N/A	25 0. 55 0. N/A	
132 133 134 135 136 137 138	7-Jun B	58 SE- 58 SE- 58 SE- 58 SE- 58 SE- 58 SE- 58 SE- 58 SE-	1 2 2 2 2 2 3 4 4	1 Silcrete 1 Silcrete 1 Silcrete 1 Silcrete 1 Fine Grained Silceou 1 Silcrete 1 Quartzite	Proximal Flake Unidentified Flake Flake Solstal Fragment Proximal Flake Proximal Flake	Flake Scar Faceted Faceted Flake Scar	Focal Focal Wide Wide	Hinge	Low/Weak	6.64 N/A 15.01 11.71 7 17.95 N/A 13.58 N/A 12.87 N/A	N/A 3.7 4. 13 3. N/A N/A N/A	0.55 0. N/A N/A N/A	4
132 133 134 135 136 137 138 139	7-Jun B	58 SE- 58 SE- 58 SE- 58 SE- 58 SE- 58 SE- 58 SE- 58 SE- 58 SE-	1 2 2 2 2 3 4 4 4	1 Silcrete 1 Silcrete 1 Silcrete 1 Silcrete 1 Silcrete 1 Fine Grained Siliceou 1 Silcrete 1 Quartzite 1 Quartzite	Proximal Flake Unidentified Flake Flake Solital Fragment Proximal Flake Proximal Flake Other	Flake Scar Faceted Faceted Flake Scar	Focal Focal Wide Wide	Hinge Feather	Low/Weak	6.64 N/A 15.01 11.71 7 17.95 N/A 13.58 N/A 12.87 N/A 11.65 N/A	N/A 3.7 4. 13 3. N/A N/A N/A N/A	0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0	
132 133 134 135 136 137 138 139 140	7-Jun 8	58 SE- 58 SE-	1 2 2 2 2 2 3 3 4 4 4 4 5 5	1 Silcrete 1 Silcrete 1 Silcrete 1 Silcrete 1 Silcrete 1 Fine Grained Siliceou 1 Silcrete 1 Quartzite 1 Quartzite 1 Silcrete	Proximal Flake Unidentified Flake Flake Flake Distal Fragment Proximal Flake Proximal Flake Other Distal Fragment	Flake Scar Faceted Faceted Flake Scar	Focal Focal Wide Wide	Hinge	Low/Weak	6.64 N/A 15.01 11.71 17.95 N/A 13.558 N/A 12.87 N/A 11.65 N/A 10.93 N/A	N/A 3.7 4. 13 3. N/A N/A N/A N/A N/A N/A N/A	15 0. N/A N/A N/A N/A N/A N/A N/A	4 Angular fragment
132 133 134 135 136 137 138 139 140	7-Jun B	58 SE- 58 SE- 58 SE- 58 SE- 58 SE- 58 SE- 58 SE- 58 SE- 58 SE- 58 SE-	1 2 2 2 2 2 3 3 4 4 4 4 4 5 5 5 5 5	1 Silcrete 1 Silcrete 1 Silcrete 1 Silcrete 1 Fine Grained Siliceou 1 Fine Grained Siliceou 1 Silcrete 1 Quartaite 1 Quartaite 1 Silcrete 1 Quartaite 1 Quartaite	Proximal Flake Unidentified Flake Flake S Distal Fragment Proximal Flake Proximal Flake Other Distal Fragment Core	Flake Scar Faceted Faceted Flake Scar	Focal Focal Wide Wide	Hinge Feather Step	Low/Weak	6.64 N/A 15.01 11.71 7 17.95 N/A 13.58 N/A 12.87 N/A 11.65 N/A 10.93 N/A 24.47 N/A	N/A 8.7 4. 13 3. N/A N/A N/A N/A N/A N/A N/A N/A N/A	15 0. SS 0. N/A N/A N/A N/A N/A N/A	4
132 133 134 135 136 137 138 139 140 141	7-Jun 8	58 SE- 58 SE-	1 2 2 2 2 2 3 3 4 4 4 4 5 5 5 5 5 5 5 5	1 Sticrete 1 Sticrete 1 Sticrete 1 Sticrete 1 Sticrete 1 Sticrete 1 Quartzite 1 Quartzite 1 Quartzite 1 Quartzite 1 Quartzite 1 Sticrete 1 Quartzite 1 Sticrete	Proximal Flake Unidentified Flake Flake Flake Solitate Fragment Proximal Flake Proximal Flake Other Distal Fragment Coste Distal Fragment Distal Fragment	Flake Scar Faceted Faceted Flake Scar	Focal Focal Wide Wide	Hinge Feather	Low/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.87 N/A 11.65 N/A 10.93 N/A 24.47 N/A 12.86 N/A	N/A 3.7 4. 3.3 3. N/A	15 0. S 0. N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	Angular fragment Unidirectional 3 scars
132 133 134 135 136 137 138 139 140 141 142 143	7-Jun 8	58 SE-	1 2 2 2 2 2 3 3 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5	1 Silcrete 1 Quartife	Proximal Flake Unidentified Flake Flake Flake Distal Fragment Proximal Flake Proximal Flake Other Distal Fragment Core Distal Fragment Other	Flake Scar Faceted Faceted Flake Scar	Focal Focal Wide Wide	Hinge Feather Step	Low/Weak	6.64 N/A 15.01 11.71 7 17.95 N/A 13.58 N/A 12.87 N/A 10.93 N/A 24.47 N/A 12.86 N/A 10.93 N/A	N/A 3.7 4. 13 3. N/A N/A N/A N/A N/A N/A N/A N/	15 0. N/A	Angular fragment Unidirectional 3 scars Angular fragment
132 133 134 135 136 137 138 139 140 141 142 143	7-Jun 8	58 SE-	1 2 2 2 2 2 2 3 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Silicrete Quartaire Silicrete Silicrete Silicrete Silicrete Silicrete Quartaite Silicrete Quartaite Silicrete Opartaite Opartaite Quartaite Quartaite Quartaite	Proximal Flake Unidentified Flake Flake Flake Solitate Fragment Proximal Flake Proximal Flake Other Distal Fragment Coste Distal Fragment Distal Fragment	Flake Scar Faceted Faceted Flake Scar	Focal Focal Wide Wide	Hinge Feather Step	Low/Weak	6.64 N/A 15.01 11.71 7 17.95 N/A 13.58 N/A 12.87 N/A 11.65 N/A 19.93 N/A 24.47 N/A 12.86 N/A 10.95 N/A	N/A 5.7 4. 13 3. N/A	15 0. N/A N/A N/A N/A N/A N/A N/A N/	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment
132 133 134 135 136 137 138 139 140 141 142 143 144 145	7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9	58 SE-	1 2 2 2 2 3 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Silcrete Quartable	Proximal Flake Unidentified Flake Flake Flake Flake Proximal Flake Proximal Flake Proximal Flake Proximal Flake Distal Fragment Core Distal Fragment Other Other Other Other Other	Flake Scar Faceted Faceted Flake Scar Flake Scar	Focal Focal Wide Wide Wide	Hinge Feather Step	Low/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.87 N/A 11.85 N/A 10.93 N/A 24.47 N/A 12.66 N/A 10.05 N/A 20.07 N/A	N/A 3.7 4. 13 3. N/A N/A N/A N/A N/A N/A N/A N/	15 0. 15 0. 15 0. 16 0. 17 0. 18 0.	Angular fragment Unidirectional 3 scars Angular fragment
132 133 134 135 136 137 138 139 140 141 142 142 143 144 145	7-Jun 8	58 SE-	1 2 2 2 2 2 3 4 4 4 4 5 5 5 5 5 5 5 6 6 6 6 6 6	Silicrete Quartaire Silicrete Silicrete Silicrete Silicrete Silicrete Quartaite Silicrete Quartaite Silicrete Opartaite Opartaite Quartaite Quartaite Quartaite	Proximal Flake Unidentified Flake Flake Flake Flake Proximal Flake Proximal Flake Proximal Flake Proximal Flake Proximal Flake Proximal Flake Other Other Other Other Other Other Other Proximal Flake	Flake Scar Faceted Faceted Flake Scar	Focal Focal Wide Wide	Hinge Feather Step	Low/Weak	6.64 N/A 15.01 11.71 7 17.95 N/A 13.58 N/A 12.87 N/A 11.65 N/A 19.93 N/A 24.47 N/A 12.86 N/A 10.95 N/A	N/A 5.7 4. 13 3. N/A	15 0. N/A N/A N/A N/A N/A N/A N/A N/	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment
132 133 134 135 136 137 138 139 140 141 142 142 143 144 145	7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 5 7-Jun 5 7-Jun 5 7-Jun 5 7-Jun 5 7-Jun 6 7-Jun 7	58 SE-	1 2 2 2 2 2 3 4 4 4 4 5 5 5 5 5 5 5 6 6 6 6 6 6	1 Silcrete 1 Quartaite	Proximal Flake Unidentified Flake Flake Flake Flake Proximal Flake Proximal Flake Proximal Flake Proximal Flake Proximal Flake Proximal Flake Other Other Other Other Other Other Other Proximal Flake	Flake Scar Faceted Faceted Flake Scar Flake Scar	Focal Focal Wide Wide Wide	Hinge Feather Step	Low/Weak	6.64 N/A 15.01 11.71 7 17.95 N/A 13.58 N/A 13.58 N/A 11.65 N/A 10.93 N/A 24.47 N/A 12.86 N/A 10.05 N/A 20.7 N/A 11.134 N/A	N/A 3.7 4. 3.3 N/A N/A N/A N/A N/A N/A N/A N/	15 0. N/A N/A N/A N/A N/A N/A N/A N/	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Angular fragment 6 Bidirectional 7 scars
132 133 134 135 136 137 138 139 140 141 142 143 144 145 144 145	7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9	58 S- 58 S-	1 2 2 2 2 2 3 4 4 4 4 5 5 5 5 5 5 5 6 6 6 6 6 6	1 Silcrete 1 Quartific	Proximal Flake Unidentified Flake Flake Flake Flake Proximal Flake Proximal Flake Other	Flake Scar Faceted Faceted Flake Scar Flake Scar	Focal Focal Wide Wide Wide	Hinge Feather Step	Low/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.87 N/A 11.85 N/A 10.93 N/A 24.47 N/A 12.66 N/A 10.05 N/A 20.07 N/A	N/A 3.7 4. 13 3. N/A N/A N/A N/A N/A N/A N/A N/	15 0. 15 0. 15 0. 16 0. 17 0. 18 0.	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment
132 133 134 135 136 137 138 139 140 141 142 143 144 145 145 146 147	7-Jun 8	58 SE-	1 2 2 2 2 2 3 4 4 4 4 5 5 5 5 5 5 5 6 6 6 6 6 6	Silcrete Quartife Quartife Silcrete Quartife Quartife Silcrete Quartife Silcrete Silcrete Silcrete Silcrete Silcrete	Proximal Flake Unidentified Flake Flake Flake Bistal Fragment Proximal Flake Other Distal Fragment Core Distal Fragment Other Core Distal Fragment Other Other Other Other Other Distal Fragment Other Distal Fragment Other	Flake Scar Faceted Faceted Flake Scar Flake Scar	Focal Focal Wide Wide Wide	Hinge Feather Step Feather	Low/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.57 N/A 11.65 N/A 10.93 N/A 24.47 N/A 12.56 N/A 10.95 N/A	N/A 3.7 4. 3.3 3. N/A	15 0. N/A N/A N/A 1. N/A N/A 1. N/A N/A 1. N/A N/A 1. N/A N/A N/A 4. N/A N/A N/A N/A N/A N/A N/A	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment 6 Bidirectional 7 scars Angular fragment
132 133 134 135 136 137 138 139 140 141 142 143 144 145 147 146 147	7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 6 7-Jun 5 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9	58 SE-	1 2 2 2 2 2 3 4 4 4 4 5 5 5 5 5 5 5 6 6 6 6 6 6	1 Silcrete 1 Guartzite 1 Quartzite 1 Silcrete 1 Silcrete 1 Silcrete 1 Silcrete 1 Silcrete	Proximal Flake Unidentified Flake Flake Flake Flake Proximal Flake Proximal Flake Other	Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Flake Scar	Focal Focal Wide Wide Wide Shattered	Hinge Feather Step Feather	Low/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.57 N/A 11.65 N/A 10.93 N/A 24.47 N/A 12.26 N/A 10.05 N/A 10.05 N/A 10.05 N/A 20.7 N/A 11.34 N/A 21.204 N/A 22.01 N/A	N/A 3.7 4. 3.3 3. 3. N/A N/A N/A N/A N/A N/A N/A N/A	15 0. 15 0. 16 0. 17 0. 18 0.	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Angular fragment 6 Bidirectional 7 scars
132 133 134 135 136 137 138 139 140 141 142 143 144 145 145 145 147 148	7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9	58 SE-	1 2 2 2 2 2 3 4 4 4 4 5 5 5 5 5 5 5 6 6 6 6 6 6	1. Silcrete 1. Quartrite 1. Silcrete	Proximal Flake Unidentified Flake Flake Flake Flake Distal Fragment Proximal Flake Other Distal Fragment Other Other Other Other Other Other Other Distal Fragment Other Proximal Flake Proximal Flake Other Other Other Other Other Other Proximal Flake Other Distal Fragment Other Distal Fragment Other Distal Fragment	Flake Scar Faceted Faceted Flake Scar Flake Scar	Focal Focal Wide Wide Wide	Hinge Feather Step Feather	Low/Weak	6.64 N/A 15.01 11.71 17.95 N/A 13.58 N/A 12.87 N/A 11.65 N/A 10.93 N/A 24.47 N/A 10.95 N/A 20.07 N/A 11.34 N/A 9.1 N/A 20.04 N/A 20.10 N/A 20.10 N/A 20.10 N/A	N/A 3.7 4. 3.3 3. N/A	15 0. 15 0. 16 0. 17 0. 18 0.	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Sidirectional 7 scars Angular fragment Sidirectional 7 scars Angular fragment 3 Unidirectional 4 scars
132 133 134 135 136 137 138 139 140 141 142 143 144 145 145 146 147 148 149 150	7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 8 7-Jun 8 7-Jun 9	58 SE-	1 2 2 2 2 2 3 3 4 4 4 4 5 5 5 5 5 5 5 6 6 6 6 6 6	1 Silcrete 1 Guartzite 1 Quartzite 1 Silcrete 1 Chert 1 Chert 1 Quartzite	Proximal Flake Unidentified Flake Flake Flake Flake Proximal Flake Proximal Flake Proximal Flake Proximal Flake Proximal Flake Proximal Flake Other Proximal Flake Other Proximal Flake Other Core Proximal Flake Core Proximal Flake Core Occe	Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Flake Scar	Focal Focal Wide Wide Wide Shattered	Hinge Feather Step Feather	Low/Weak	6.64 N/A 15.01 11.71 7 17.95 N/A 13.58 N/A 13.58 N/A 13.57 N/A 13.58 N/A 10.93 N/A 24.47 N/A 12.86 N/A 10.055 N/A 20.7 N/A 11.34 N/A 9.1 N/A 24.19 N/A 24.58 N/A 24.58 N/A	N/A 3.7 4. 3.3 N/A N/A N/A N/A N/A N/A N/A N/	15 0. N/A N/A N/A N/A 1. N/A N/A N/A 1. N/A N/A N/A N/A 1. N/A N/A N/A 1.	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment 6 Bidirectional 7 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar
132 133 134 135 136 137 138 139 140 141 142 143 144 145 145 146 147 148 149 150	7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9	58 SE-	1 2 2 2 2 2 2 3 3 4 4 4 4 4 4 5 5 5 5 5 5 5 6 6 6 6 6 6 6	1. Silcrete 1. Quartaite 1. Silcrete 1. Silcrete 1. Silcrete 1. Silcrete 1. Silcrete 1. Quartaite 1. Chert 1. Guartaite 1. Chert 1. Silcrete	Proximal Flake Unidentified Flake Flake Flake Flake Proximal Flake Proximal Flake Other Distal Fragment Core Distal Fragment Core Other Other Other Core Proximal Flake Other Core Proximal Flake Other Core Proximal Flake Other Core	Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Flake Scar Faceted	Focal Focal Wide Wide Wide Shattered	Hinge Feather Step Feather Feather	Low/Weak Low/Weak	6.64 N/A 15.01 11.71 17.95 N/A 13.58 N/A 12.87 N/A 11.65 N/A 10.93 N/A 24.47 N/A 12.86 N/A 10.05 N/A 10.05 N/A 20.7 N/A 11.34 N/A 9.1 N/A 12.49 N/A 24.19 N/A	N/A 3.7 4. 3.3 N/A	15 0. 15 0. 15 0. 16 0. 17 0. 18 0.	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Sidirectional 7 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 4 scars 1 Multidirectional 1 scar 1 Multidirectional 1 scar
132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151	7-Jun 8 7-Jun 9	58 SE-	1 2 2 2 2 2 2 3 3 4 4 4 4 4 4 5 5 5 5 5 5 5 6 6 6 6 6 6 6	1. Silcrete 1. Quartrite 1. Silcrete	Proximal Flake Unidentified Flake Flake Flake Distal Fragment Proximal Flake Other Distal Fragment Other Other Other Other Other Other Core Proximal Flake Other Core Froximal Flake Core Core Core Froximal Flake	Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Flake Scar	Focal Focal Wide Wide Wide Shattered	Hinge Feather Step Feather Feather	Low/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.87 N/A 11.65 N/A 10.93 N/A 24.47 N/A 12.86 N/A 10.93 N/A 20.7 N/A 11.94 N/A 21.204 N/A 24.19 N/A	N/A 13 3. N/A N/A N/A N/A N/A N/A N/A N/	15 0.0 N/A	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Angular fragment 6 Bidirectional 7 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar 1 Multidirectional 10 scars 1 Multidirectional 10 scars
132 133 134 135 136 137 138 139 140 141 142 143 144 145 145 146 147 148 149 150 151	7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 10	58 SE- 58	1 2 2 2 2 2 2 3 3 4 4 4 4 4 5 5 5 5 5 5 6 6 6 6 6 6	1. Silcrete 1. Quartaite 1. Silcrete	Proximal Flake Unidentified Flake Flake Flake Flake Proximal Flake Proximal Flake Other Distal Fragment Core Distal Fragment Core Other Other Other Core Proximal Flake Other Core Proximal Flake Other Core Proximal Flake Other Core	Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Flake Scar Faceted	Focal Focal Wide Wide Wide Shattered	Hinge Feather Step Feather Feather	Low/Weak Low/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.87 N/A 11.65 N/A 10.93 N/A 24.47 N/A 12.66 N/A 10.035 N/A 10.05 N/A 20.7 N/A 11.34 N/A 9.1 N/A 12.04 N/A 24.19 N/A 24.19 N/A 24.19 N/A 24.19 N/A 24.19 N/A 24.19 N/A	N/A 3.7 4. 3.3 3. N/A	15 0. 15 0. 15 0. 16 0. 17 0. 18 0.	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Sidirectional 7 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 4 scars 1 Multidirectional 1 scar 1 Multidirectional 1 scar
132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151	7-Jun 8 7-Jun 9	58 SE-	1 2 2 2 2 2 2 3 3 4 4 4 4 4 5 5 5 5 5 5 6 6 6 6 6 6	1. Silcrete 1. Quartrite 1. Silcrete	Proximal Flake Unidentified Flake Flake Flake Distal Fragment Proximal Flake Other Distal Fragment Other Other Other Other Other Other Core Proximal Flake Other Core Froximal Flake Core Core Core Froximal Flake	Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Flake Scar Faceted	Focal Focal Wide Wide Wide Shattered	Hinge Feather Step Feather Feather	Low/Weak Low/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.87 N/A 11.65 N/A 10.93 N/A 24.47 N/A 12.86 N/A 10.93 N/A 20.7 N/A 11.94 N/A 21.204 N/A 24.19 N/A	N/A 13 3. N/A N/A N/A N/A N/A N/A N/A N/	15 0.0 N/A	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Angular fragment 6 Bidirectional 7 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar 1 Multidirectional 10 scars 1 Multidirectional 10 scars
132 133 134 135 136 137 138 139 140 141 142 143 144 145 145 146 147 148 149 150 151	7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 10	58 SE- 58	1 2 2 2 2 2 2 2 3 3 4 4 4 4 4 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6	1. Silcrete 1. Quartaite 1. Silcrete	Proximal Flake Unidentified Flake Flake Flake Dittal Fragment Proximal Flake Other Dittal Fragment Core Dittal Fragment Core Other Other Other Other Other Core Proximal Flake Core Proximal Flake Core Proximal Flake Core Fragment Core Proximal Flake Core Flake Other Dittal Fragment Core Fragment Core Proximal Flake Other	Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Flake Scar Faceted	Focal Focal Wide Wide Wide Shattered	Hinge Feather Step Feather Feather	Low/Weak Low/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.87 N/A 11.65 N/A 10.93 N/A 24.47 N/A 12.66 N/A 10.035 N/A 10.05 N/A 20.7 N/A 11.34 N/A 9.1 N/A 12.04 N/A 24.19 N/A 24.19 N/A 24.19 N/A 24.19 N/A 24.19 N/A 24.19 N/A	N/A 3.7 4. 3.3 3. N/A	15 0.0 N/A	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment 6 Bidirectional 7 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar 1 Multidirectional 10 scars 8 Medial broken flake
132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154	7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 5 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9	58 S- 58	1 2 2 2 2 2 2 3 3 4 4 4 4 4 5 5 5 5 5 5 6 6 6 6 6 6	1 Silcrete 1 Quartaite 1 Silcrete	Proximal Flake Unidentified Flake Flake Flake Flake Dittal Fragment Proximal Flake Other Core Proximal Flake Proximal Flake Other Flake Other Other Other Other Frozimal Flake Other Other Proximal Flake Other Other Proximal Flake Other Other Frozimal Flake Other Other Other Other Other Other Other Other	Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Faceted Faceted Flake Scar Flake Scar	Focal Focal Wide Wide Wide Shattered Focal Focal	Feather Step Feather Feather Feather	Low/Weak Low/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.87 N/A 11.65 N/A 19.93 N/A 24.47 N/A 10.035 N/A 20.07 N/A 11.34 N/A 20.7 N/A 11.34 N/A 24.49 N/A 24.49 N/A 24.58 N/A 26.58 N/A 21.20 N/A 21.20 N/A 24.58 N/A 25.58 N/A 26.78 N/A 27.58 N/A 28.78 N/A 29.10 N/A 29.10 N/A 20.10 N/A	N/A 3.7 4. 3.3 3. 3.1 3. 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3	15 0. N/A	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment 6 Bidirectional 7 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar 1 Multidirectional 10 scars 8 Medial broken flake Medial broken flake
132 133 134 135 136 137 138 139 140 141 142 143 144 145 145 146 147 148 149 150 151 152 153 154 155	7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 8 7-Jun 9	58 SE- 58	1 2 2 2 2 2 2 3 3 4 4 4 4 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6	1 Silcrete 1 Quartrite 1 Silcrete	Proximal Flake Unidentified Flake Flake Flake Flake Distal Fragment Proximal Flake Other Distal Fragment Other Distal Fragment Other Other Other Other Other Other Other Other Other Distal Fragment Other Distal Fragment Other Distal Fragment Other Frozimal Flake Take	Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Flaceted Faceted Faceted	Focal Focal Wide Wide Wide Shattered Focal	Hinge Feather Step Feather Feather	Low/Weak Low/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.87 N/A 10.93 N/A 24.47 N/A 10.93 N/A 20.07 N/A 11.94 N/A 20.19 N/A 20.19 N/A 20.19 N/A 20.19 N/A 20.10 N/A	N/A 3.7 4. 3.3 3. 3.1 3. 3. N/A N/A N/A N/A N/A N/A N/A N/A	15 0.0 N/A N/A N/A N/A 1. N/A N/A 1. N/A N/A 1. N/A N/A 4. N/A N/A 4. N/A 1. N/A	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Angular fragment 6 Bidirectional 3 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar 1 Multidirectional 10 scars 8 Medial broken flake Medial broken flake
132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156	7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 6 7-Jun 6 7-Jun 8 7-Jun 9 7-Jun 8	58 SE- 58	1 2 2 2 2 2 2 3 3 4 4 4 4 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6	1 Silcrete 1 Fine Grained Siliceou 1 Silcrete 1 Quartite 1 Silcrete	Proximal Flake Unidentified Flake Flake Flake Flake Flake Proximal Flake Proximal Flake Other Other Other Other Other Other Other Other Flake Flake Other Other Other Other Flake Other	Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Faceted Faceted Flake Scar Flake Scar	Focal Focal Wide Wide Wide Shattered Focal Focal	Feather Feather Feather Feather Feather	Low/Weak Low/Weak	6.64 N/A 15.01 11.71 7.37-95 N/A 13.58 N/A 12.57 N/A 11.65 N/A 10.93 N/A 24.47 N/A 10.055 N/A 20.07 N/A 11.34 N/A 20.07 N/A 12.04 N/A 24.49 N/A 24.49 N/A 24.58 N/A 24.59 N/A 15.601 12.63 N/A 15.601 14.79 N/A 12.64 N/A 15.601 14.79 N/A 17.79 N/A 13.6 13.6 13.6 13.6 13.6 13.6 13.6	N/A 3.7 4. 3.3 3. 3.1 3. 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3	15 0.0 N/A 0.1 N/A N/A N/A N/A N/A 1.1 N/A N/A N/A 1.1 N/A N/A N/A 1.1 N/A	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment 6 Bidirectional 7 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar 1 Multidirectional 10 scars 8 Medial broken flake Medial broken flake
132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158	7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9	58 SE- 58	1 2 2 2 2 2 3 3 4 4 4 4 4 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6	1 Silcrete 1 Quartaite 1 Silcrete	Proximal Flake Unidentified Flake Flake Flake Flake Distal Fragment Proximal Flake Other Distal Fragment Core Distal Fragment Other Distal Fragment Other Other Other Distal Fragment Distal Fragment	Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Flake Scar	Focal Focal Wide Wide Wide Shattered Focal Wide Wide	Feather Step Feather Feather Feather	Low/Weak Low/Weak	6.64 N/A 15.01 11.71 17.95 N/A 13.58 N/A 12.87 N/A 11.65 N/A 10.93 N/A 24.47 N/A 10.35 N/A 10.05 N/A 20.7 N/A 11.34 N/A 21.99 N/A 22.19 N/A 22.19 N/A 22.19 N/A 22.19 N/A 23.10 N/A 24.10 N/A 25.10 N/A 26.10 N/A 27.10 N/A 28.10 N/A 29.10 N/A 29.10 N/A 20.10 N/A	N/A 3.7 4. 3.3 3. 3.1 3. 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3	15 0. 15 0. 15 0. 16 0. 17 0. 18 0.	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Angular fragment 6 Bidirectional 3 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar 1 Multidirectional 10 scars 8 Medial broken flake Medial broken flake
132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 151 152 153 154 155 155 155 155 155 156	7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 5 7-Jun 5 7-Jun 8 7-Jun 9 7-Jun 8 7-Jun 9	58 SE- 58	1 2 2 2 2 2 3 4 4 4 4 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6	1 Silcrete 1 Quartite 1 Silcrete	Proximal Flake Unidentified Flake Flake Flake Blistal Fragment Proximal Flake Other Distal Fragment Other Other Ottal Fragment Other Other Other Other Other Other Core Proximal Flake Other Flake Other Other Core Proximal Flake Other Core Froximal Flake Core Core Froximal Flake Core Core Core Froximal Flake Core Core Distal Fragment Other Core Froximal Flake Core Distal Fragment Other Proximal Flake Other Froximal Flake Core Froximal Flake Core	Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Faceted Faceted Flake Scar Flake Scar	Focal Focal Wide Wide Wide Shattered Focal Focal	Hinge Feather Step Feather Feather Feather Feather Feather Feather	Low/Weak Low/Weak	6.64 N/A 15.01 11.71 17.95 N/A 13.58 N/A 12.57 N/A 11.65 N/A 10.93 N/A 24.47 N/A 12.56 N/A 10.93 N/A 20.7 N/A 11.34 N/A 21.19 N/A 24.19 N/A 24.19 N/A 24.19 N/A 24.19 N/A 25.19 N/A 15.85 N/A	N/A N/A N/A N/A N/A N/A N/A N/A	15 0.0 N/A N/A N/A N/A N/A N/A N/A N/A	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Angular fragment 6 Bidirectional 3 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar 1 Multidirectional 10 scars 8 Medial broken flake Medial broken flake
132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158	7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9	58 SE- 58	1 2 2 2 2 2 3 3 4 4 4 4 4 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6	1 Silcrete 1 Quartrite 1 Silcrete	Proximal Flake Unidentified Flake Flake Flake Distal Fragment Proximal Flake Other Distal Fragment Core Distal Fragment Core Other Distal Fragment Other Other Other Other Distal Fragment Other Distal Fragment Core Proximal Flake Ocore Flake Other	Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Faceted Faceted Faceted Faceted Faceted Flake Scar Flake Scar Flake Scar Flake Scar	Focal Focal Wide Wide Wide Shattered Focal Wide Wide	Feather Feather Feather Feather Feather	Low/Weak Low/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.87 N/A 11.85 N/A 10.93 N/A 24.47 N/A 10.35 N/A 10.05 N/A 20.7 N/A 11.34 N/A 24.19 N/A 24.29 N/A	N/A 3.7 4. 3.3 3. 3.1 3. 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3	15 0. 15 0. 15 0. 16 0. 17 0. 18 0.	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Angular fragment 6 Bidirectional 3 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar 1 Multidirectional 10 scars 8 Medial broken flake Medial broken flake
132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 151 152 153 154 155 155 155 155 155 156	7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 5 7-Jun 5 7-Jun 8 7-Jun 9 7-Jun 8 7-Jun 9	58 SE- 58	1 2 2 2 2 2 3 3 4 4 4 4 4 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6	1 Silcrete 1 Quartite 1 Silcrete	Proximal Flake Unidentified Flake Flake Flake Blistal Fragment Proximal Flake Other Distal Fragment Other Other Ottal Fragment Other Other Other Other Other Other Core Proximal Flake Other Flake Other Other Core Proximal Flake Other Core Froximal Flake Core Core Froximal Flake Core Core Core Froximal Flake Core Core Distal Fragment Other Core Froximal Flake Core Distal Fragment Other Proximal Flake Other Froximal Flake Core Froximal Flake Core	Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Flake Scar	Focal Focal Wide Wide Wide Shattered Focal Wide Wide	Hinge Feather Step Feather Feather Feather Feather Feather Feather	Low/Weak Low/Weak	6.64 N/A 15.01 11.71 17.95 N/A 13.58 N/A 12.57 N/A 11.65 N/A 10.93 N/A 24.47 N/A 12.56 N/A 10.93 N/A 20.7 N/A 11.34 N/A 21.19 N/A 24.19 N/A 24.19 N/A 24.19 N/A 24.19 N/A 25.19 N/A 15.85 N/A	N/A N/A N/A N/A N/A N/A N/A N/A	15 0.0 N/A N/A N/A N/A N/A N/A N/A N/A	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Angular fragment 6 Bidirectional 3 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar 1 Multidirectional 10 scars 8 Medial broken flake Medial broken flake
132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158	7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9	58 SE- 58	1 2 2 2 2 2 2 3 3 4 4 4 4 4 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6	1 Silcrete 1 Quartrite 1 Silcrete	Proximal Flake Unidentified Flake Flake Flake Flake Other Distal Fragment Proximal Flake Other Froximal Flake Other Other Other Other Other Froximal Flake Other Froximal Flake Other Froximal Flake Other Flake Flake Other	Flake Scar Faceted Faceted Flake Scar Flake Scar Flake Scar Faceted Faceted Faceted Faceted Faceted Flake Scar Flake Scar Flake Scar Flake Scar	Focal Focal Wide Wide Wide Shattered Focal Wide Wide	Hinge Feather Step Feather Feather Feather Feather Feather Feather	Low/Weak Low/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.87 N/A 11.85 N/A 10.93 N/A 24.47 N/A 10.35 N/A 10.05 N/A 20.7 N/A 11.34 N/A 24.19 N/A 24.29 N/A	N/A 3.7 4. 3.3 3. 3.1 3. 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3.1 3. 3	15 0. 15 0. 15 0. 16 0. 17 0. 18 0.	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Angular fragment 6 Bidirectional 3 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar 1 Multidirectional 10 scars 8 Medial broken flake Medial broken flake
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132 133 134 135 136 137 138 139 140 141 142 143 144 145 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 161 162 163 164 165 165 165	7-Jun 8	58 SE- 58	1 2 2 2 2 2 3 3 4 4 4 4 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6	1 Silcrete 1 Quartaite 1 Silcrete	Proximal Flake Unidentified Flake Flake Flake Flake Distal Fragment Proximal Flake Other Distal Fragment Core Distal Fragment Other Other Other Other Other Distal Fragment Core Froximal Flake Proximal Flake Other Distal Fragment Other Distal Fragment Other Distal Fragment Core Distal Fragment Core Distal Fragment Distal Fragment Core Distal Fragment Froximal Flake Distal Fragment Distal Fragment Proximal Flake	Flake Scar Faceted Flake Scar	Focal Focal Wide Wide Wide Shattered Focal Focal Focal Focal Focal	Hinge Feather Step Feather Feather Feather Feather Feather Feather Feather	Low/Weak Low/Weak	6.64 N/A 15.01 11.71 17.95 N/A 13.58 N/A 12.87 N/A 11.65 N/A 10.93 N/A 24.47 N/A 10.93 N/A 20.7 N/A 11.34 N/A 21.19 N/A 21.20 N/A 10.51 N/A 11.51 N/A 12.19 N/A 14.11 N/A 15.65 N/A 11.77 N/A 10.05 N/A 13.47 N/A 13.57 N/A 10.58 N/A 13.77 N/A 10.05 N/A 13.58 N/A 13.58 N/A 13.59 N/A 13.59 N/A 13.59 N/A 13.59 N/A 13.59 N/A 13.59 N/A	N/A 3.7 4. 3.3 3. 3.1 3. 3. N/A N/A N/A N/A N/A N/A N/A N/A	15 0.0 N/A N/A N/A N/A N/A N/A N/A N/A	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Bidirectional 7 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar Unidirectional 10 scars Medial broken flake Medial broken flake Medial broken flake unidirectional 2 flake scar Angular fragment Angular fragment
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132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 161 162 163 164 165 165 165 165 165 165 165 165	7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 8 7-Jun 9 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9 7-Jun	58 SE- 58	1 2 2 2 2 2 3 3 4 4 4 4 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6	1 Silcrete 1 Quartrite 1 Silcrete	Proximal Flake Unidentified Flake Flake Flake Flake Object Flake Other Distal Fragment Proximal Flake Other Distal Fragment Core Distal Fragment Other Other Other Other Other Other Other Flake Other Flake Other Other Frozimal Flake Other	Flake Scar Faceted Faceted Flake Scar	Focal Focal Wide Wide Wide Shattered Focal Focal Focal Focal Focal Focal Wide Wide Wide Wide Wide Wide Wide Wide	Hinge Feather Step Feather Feather Feather Feather Feather Feather Feather Feather Feather	Low/Weak Low/Weak	6.64 N/A 15.01 11.71 7.37-95 N/A 13.58 N/A 12.87 N/A 11.65 N/A 10.93 N/A 24.47 N/A 10.05 N/A 20.07 N/A 11.34 N/A 24.19 N/A 24.88 N/A 24.88 N/A 25.3 N/A 21.2 N/A 11.65 N/A 21.7 N/A 21.8 N/A 21.7 N/A 21.8 N/A	N/A N/A N/A N/A N/A N/A N/A N/A	15 0.0 N/A 0.1 N/A	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Angular fragment 6 Bidirectional 7 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar Unidirectional 1 scar Unidirectional 1 scars Medial broken flake Medial broken flake 9 unidirectional 2 flake scar Angular fragment Angular fragment Angular fragment Medial broken flake
132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 165 165 165 165 165 165 165	7-Jun 8 7-Jun 9 8 9-Jun 19 9-Jun 8 9-Jun 8 9-Jun 8 9-Jun 8 9-Jun 8 9-Jun 8 1-Jun 9 1-J	58 SE- 58	11 22 2 2 2 3 3 4 4 4 4 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6	1 Silcrete 1 Quartaite 1 Silcrete	Proximal Flake Unidentified Flake Flake Flake Flake Distal Fragment Proximal Flake Other Distal Fragment Core Distal Fragment Other Other Other Other Other Core Proximal Flake Proximal Flake Other Other Other Other Other Distal Fragment Other Distal Fragment Distal Fragment Froximal Flake Other Distal Fragment Distal Fragment Distal Fragment Flake Other Other Other Other Proximal Flake Distal Fragment Proximal Flake Other Other Other Other Other Other Other	Flake Scar Faceted Faceted Flake Scar	Focal Wide Wide Wide Shattered Focal	Hinge Feather Step Feather Feather Feather Feather Feather Feather Feather Feather Feather	Low/Weak Low/Weak Low/Weak High/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.87 N/A 11.85 N/A 10.93 N/A 24.47 N/A 10.05 N/A 10.05 N/A 20.7 N/A 11.34 N/A 24.19 N/A 24.28 N/A 24.29 N/A 13.36 N/A 10.41 N/A 24.19 N/A 24.29 N/A 13.41 N/A 24.19 N/A 24.21 N/A 25.21 N/A 26.21 N/A 27.21 N/A 28.22 N/A 29.62 8 29.62 8 29.62 8 29.62 8 29.62 8 29.62 8 20.70 N/A 20.70 N/A	N/A 1.7 4. 1.3 3. 3. N/A N/A N/A N/A N/A N/A N/A N/A	15 0.0 N/A	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Angular fragment 6 Bidirectional 7 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar Unidirectional 1 scar Unidirectional 1 scars Medial broken flake Medial broken flake 9 unidirectional 2 flake scar Angular fragment Angular fragment Angular fragment Medial broken flake
132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 161 162 163 164 165 165 165 165 165 165 165 165	7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 9 7-Jun 8 7-Jun 9 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 8 7-Jun 9 7-Jun	58 SE- 58	11 22 2 2 2 3 3 4 4 4 4 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6	1 Silcrete 1 Quartaite 1 Silcrete	Proximal Flake Unidentified Flake Flake Flake Flake Object Flake Other Distal Fragment Proximal Flake Other Distal Fragment Core Distal Fragment Other Other Other Other Other Other Other Flake Other Flake Other Other Frozimal Flake Other	Flake Scar Faceted Faceted Flake Scar	Focal Focal Wide Wide Wide Shattered Focal Focal Focal Focal Focal Focal Wide Wide Wide Wide Wide Wide Wide Wide	Hinge Feather Step Feather Feather Feather Feather Feather Feather Feather Feather Feather	Low/Weak Low/Weak Low/Weak Low/Weak High/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.87 N/A 11.85 N/A 10.93 N/A 24.47 N/A 10.05 N/A 10.05 N/A 20.7 N/A 11.34 N/A 24.19 N/A 24.28 N/A 24.29 N/A 13.36 N/A 10.41 N/A 24.19 N/A 24.29 N/A 13.41 N/A 24.19 N/A 24.21 N/A 25.21 N/A 26.21 N/A 27.21 N/A 28.22 N/A 29.62 8 29.62 8 29.62 8 29.62 8 29.62 8 29.62 8 20.70 N/A 20.70 N/A	N/A 1.7 4. 1.3 3. 3. N/A N/A N/A N/A N/A N/A N/A N/A	15 0.0 N/A	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Angular fragment 6 Bidirectional 7 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar Unidirectional 1 scar Unidirectional 1 scars Medial broken flake Medial broken flake 9 unidirectional 2 flake scar Angular fragment Angular fragment Angular fragment Medial broken flake
132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 155 155 156 167 168 169 170	7-Jun 8 7-Jun 9 7-Jun 9 7-Jun 10	58 SE- 58	11 22 2 2 2 2 3 3 4 4 4 4 5 5 5 5 5 5 5 5 5 5 6 6 6 6 6 6	1 Silcrete 1 Quartrite 1 Silcrete	Proximal Flake Unidentified Flake Flake Flake Distal Fragment Proximal Flake Other Distal Fragment Core Distal Fragment Core Other Other Other Other Other Other Other Distal Fragment Other Other Other Other Other Distal Fragment Other Other Other Other Distal Fragment Flake Other Proximal Flake Core Frainal Flake Distal Fragment Distal Fragment Distal Fragment Proximal Flake Distal Fragment Proximal Flake Distal Fragment Proximal Flake Distal Fragment Proximal Flake Other Proximal Flake	Flake Scar Faceted Faceted Flake Scar	Focal Focal Wide Wide Wide Shattered Focal Focal Focal Focal Wide Wide Wide Wide Wide Wide	Feather Feather	Low/Weak Low/Weak Low/Weak High/Weak	6.64 N/A 15.01 11.71 7.795 N/A 13.58 N/A 12.87 N/A 11.85 N/A 10.93 N/A 24.47 N/A 10.05 N/A 10.05 N/A 20.7 N/A 11.34 N/A 24.19 N/A 24.28 N/A 24.29 N/A 13.36 N/A 10.41 N/A 24.19 N/A 24.29 N/A 13.41 N/A 24.19 N/A 24.21 N/A 25.21 N/A 26.21 N/A 27.21 N/A 28.22 N/A 29.62 8 29.62 8 29.62 8 29.62 8 29.62 8 29.62 8 20.70 N/A 20.70 N/A	N/A 1.7 4. 1.3 3. 3. N/A N/A N/A N/A N/A N/A N/A N/A	15 0.0 N/A N/A N/A N/A N/A N/A N/A N/A	Angular fragment 5 Unidirectional 3 scars Angular fragment Angular fragment Angular fragment 6 Bidirectional 7 scars Angular fragment 3 Unidirectional 4 scars Unidirectional 1 scar Unidirectional 1 scar Unidirectional 1 scars Medial broken flake Medial broken flake 9 unidirectional 2 flake scar Angular fragment Angular fragment Angular fragment Medial broken flake

173	8-Jun B	58 NW-7	1 Silcrete	Proximal Flake	Flake Scar	Wide			23.78 N/A		N/A N/A		Backed blade with broken distal end
174	8-Jun B	58 NW-2	1 Quartzite	Proximal Flake	Flake Scar	Wide			23.03 N/A		N/A N/A		
175	8-Jun B	58 NW-2	1 Chert	Flake	Flake Scar	Wide	Hinge	Irregular	13.29	14.33	3.27	0.7	
176	8-Jun B	58 NW-2	1 Silcrete	Flake	Faceted	Indeterminate	Feather	Irregular	8.7	12.52	2.72	0.3	
177	8-Jun B	58 Nw-2	1 Silcrete	Proximal Flake	Flake Scar	Indeterminate			18.97 N/A		N/A N/A		The second section of the sect
178	8-Jun B	58 NW-2	1 Quartzite	Core					29.62 N/A		N/A	12.1	Multidirectional core 6 flake scars
179	8-Jun B	58 NW-2	1 Silcrete	Distal Fragment			Feather		8.39 N/A		N/A N/A		
180	8-Jun B	58 NW-2	1 Silcrete	Other					7.82 N/A		N/A N/A		Median broken flake
181	8-Jun B	58 NW-2	1 Chert	Other					17.68 N/A		N/A N/A		
182	8-Jun B	58 NW-2	1 Silcrete	Other		1	N.	1	10.29 N/A		N/A N/A		
183		58 NW-1	1 Silcrete	Flake Tool	Faceted	Focal	Bipolar	High/Weak	10.84	15.32	5 67 N/A		Comments michaelit
	8-Jun B				raceted	rocal		nign/weak			3.07		Geometric michrolit
184	8-Jun B	58 NW-1 58 NW-1	1 Chert 1 Chert	Distal Fragment	_	_	Feather		10.85 N/A		N/A N/A		
185	8-Jun B			Distal Fragment		+	Feather	-	8.18 N/A		N/A N/A		
186	8-Jun B	58 NW-3	1 Silcrete	Distal Fragment			-		8.29 N/A		N/A N/A		
187	8-Jun B	58 SW-4	1 Chert	Other					23.06 N/A		N/A N/A		
188	8-Jun B	58 SW-4	1 Silcrete	Flake	Flake Scar	Wide	Hinge	Irregular	14.08	14.86	10.26	2.7	
189	8-Jun B	58 NE-4	1 Silcrete	Core					19.3 N/A		N/A	2.9	Unidirectional 7 flake scars
190	8-Jun B	58 NE-4	1 Silcrete	Flake	Flake Scar	Wide	Feather	Irregular	27.6	10.74	5.44	1.7	
191	8-Jun B	58 NE-4	1 Silcrete	Flake	Flake Scar	Wide	Feather	Irregular	26.13	9.11	5.04	1.5	
192	8-Jun B	58 NE-4	1 Silcrete	Flake	Flake Scar	Wide	Feather	Irregular	15.49	8.28	1.71	0.3	
193	8-Jun B	58 NE-4	1 Silcrete	Flake	Cortex	Wide	Feather	Irregular	10.26	9.36	3.7	0.3	
194	8-Jun B	58 NE-4	1 Chert	Flake	Cortex	Wide	Feather		12	9.89	1.97	0.4	
195	8-Jun B	58 NE-4	1 Silcrete	Flake	Flake Scar	Wide	Feather	Irregular Irregular	9.34	13.33	1.86	0.3	
196	8-Jun B	58 NE-4	1 Silcrete	Flake		Wide			8.84	6.25	2.75 N/A	0	
		58 NE-4	1 Silcrete	Proximal Flake	Flake Scar		Step	Irregular	12.51 N/A		V/A N/A		
197	8-Jun B		1 Sicrete		Flake Scar	Wide	F. 40	Contraction of the Contraction o					
198	2-Jun E	33 N	1 Quartzite	Flake	Cortex	Indeterminate	Feather	Irregular	22.42	15.37	7.82	- 3	1-
199	4-Jun E	33 NE-1	2 Silcrete	Other					8.7 N/A		N/A N/A		
200	3-Jun E	33 NE	2 Quartz	Flake Tool	Flake Scar	Indeterminate	Bipolar	Irregular	26.23	13.1	9.62	4	
201	3-Jun E	33 NW-3	2 Silcrete	Core			100		21 N/A		V/A	2.8	
202	3-Jun E	33 NW-3	2 Silcrete	Flake	Flake Scar	Focal	Feather	Irregular	10.43	7.99	2.54	0.3	
203	3-Jun E	33 NW-3	2 Silcrete	Proximal Flake	Faceted	Focal			9.07 N/A		N/A N/A		
204	2-Jun E	33 E	1 Chert	Proximal Flake	Faceted	Indeterminate			29.21 N/A		N/A N/A		
205	1-Jun E	33 N/A	2 Silcrete	Proximal Flake	Faceted	Focal			10.15 N/A		N/A N/A		
206	1-Jun E	33 N/A	2 Silcrete	Proximal Flake	Faceted	Focal			9.08 N/A		N/A N/A		1
207				Proximal Flake	Faceted		1				N/A N/A		
	1-Jun E	33 N/A	2 Chert			Focal	Earther	learning .	7.9 N/A				1
208	1-Jun E	33 N/A	2 Silcrete	Flake	Faceted	Focal	Feather	Irregular	11.66	6.45	2.01 N/A		
209	1-Jun E	33 N/A	2 Silcrete	Proximal Flake	Flake Scar	Wide	_		6.36 N/A		N/A N/A		
210	3-Jun E	33 SE	2 Silcrete	Proximal Flake	Flake Scar	Wide	1	1	8.7 N/A	_	N/A N/A		
211	2-Jun E	33 5	1 Silcrete	Other					13.38 N/A		V/A N/A		Angular fragment
212	2-Jun E	33 5	1 Silcrete	Other			11/4		7.67 N/A		N/A N/A		Angular fragment
213	3-Jun E	33 SW	2 Silcrete	Proximal Flake	Faceted	Focal	14.14		10.61 N/A		N/A N/A		
214	3-Jun E	33 SW	2 Silcrete	Flake	Cortex	Shattered	Feather	Irregular	10.74	14.46	2.83	0.4	
215	3-Jun E	33 SW	2 Silcrete	Other					6.02 N/A		N/A N/A		
													Retouched flake. Retouch on distal
216	4-Jun E	33 SW	1 Silcrete	Flake Tool	Flake Scar	Wide			12.92	15.82	5.48	110	and right margin.
217	4-Jun E	33 SW-1	2 Silcrete	Flake	Flake Scar	Wide	Bipolar	Irregular	13.9	13.98	4.3	0.8	
					rtake scar	WINE		Irregular				0.8	
218	4-Jun E	33 SW-1	2 Silcrete	Distal Fragment	27.2		Feather	The same of the sa	14.14 N/A		N/A N/A		
219	4-Jun E	33 SW-1	2 Silcrete	Flake	Flake Scar	Wide	Feather	Irregular	8.96	10.53	3.78	0.6	
220	4-Jun E	33 SW-1	2 Silcrete	Other					11.23 N/A		N/A N/A		
221	4-Jun E	33 SW-2	1 Silcrete	Flake	Faceted	Wide	Feather	Irregular	8.75	11.54	2.84	0.4	
222	4-Jun E	33 SW-2	1 Silcrete	Flake	Faceted	Focal	Feather	Irregular	7.93	3.76	1.63 N/A		
223	4-Jun E	33 SW-2	1 Silcrete	Other			1		10.29 N/A		V/A N/A		
224	4-Jun E	33 SW-2	1 Silcrete	Other				1	10.8 N/A		N/A N/A		Angular fragment
225	4-Jun E	33 SW-2	1 Quartz	Other					7.23 N/A		N/A N/A		Angular fragment
226	4-Jun E	33 SW-2	2 Silcrete	Flake	Faceted	Focal	Feather	Irregular	18.22	18.12	6.09	2.8	
227	4-Jun E	33 SW-2	2 Silcrete	Flake	Faceted	Focal	Feather		15.51	12.14	5.89	1.1	
228	4-Jun E				- accieu	1002		Irregular	9.25 N/A		5.89 N/A N/A	1.1	
		33 SW-2	2 Silcrete	Distal Fragment			Feather				7.0		Ann Instrument
229	4-Jun E	33 SW-2	2 Silcrete	Other			-		10.44 N/A		N/A N/A		Angular fragment
230	4-Jun E	33 SW-2	2 Silcrete	Other	-		The same of the sa		6.37 N/A		N/A N/A		Angular fragment
231	8-Jun E	33 SW-3	1 Silcrete	Flake	Flake Scar	Wide	Step	Low/Weak	25.65	12.48	3.44	1.9	
232	8-Jun E	33 SW-3	1 Silcrete	Flake	Faceted	Focal	Feather	Low/Weak	23.89	14.72	6.72	2.7	
233	8-Jun E	33 SW-3	1 Silcrete	Proximal Flake	Faceted	Wide	11 1 -	High/Strong	17.55 N/A		N/A N/A		
234	8-Jun E	33 SW-3	1 Silcrete	Proximal Flake			117		18.22 N/A		N/A N/A		
235	8-Jun E	33 SW-3	1 Petrified Wood	Distal Fragment			Feather		22.93 N/A		V/A N/A		Petrified wood?
236	8-Jun E	33 SW-3	1 Silcrete	Distal Fragment			Feather		14.56 N/A		N/A N/A		
237	8-Jun E	33 SW-3	1 Silcrete	Other					9.37 N/A		N/A N/A		Angular fragment
238	8-Jun E	33 SW-3	2 Silcrete	Distal Fragment		1	Feather	1	10.53 N/A		N/A N/A		-9
239	8-Jun E	33 SW-3	2 Quartzite	Flake	Faceted	Focal		Irramilar	6.23	11.37	3.05 N/A		
240							Bipolar	Irregular			3.U3 N/A		
	8-Jun E	33 SW-3	2 Silcrete	Flake	Flake Scar	Wide	Feather	High/Strong	8	6.13	3.42 N/A		
241	8-Jun E	33 SW-3	2 Silcrete	Other			-		8.84 N/A		N/A N/A		Angular fragment
242	8-Jun E	33 5W-4	1 Silcrete	Flake	Faceted	Focal	Bipolar	Irregular	22.81	20.71	4.4	2.7	
243	8-Jun E	33 SW-4	1 Fine Grained Siliceo	ıs Flake	Faceted	Wide	II. CY	Irregular	22.34	15.22	13.55		Retouch on the distal margin
244	8-Jun E	33 SW-4	1 Silcrete	Flake	Flake Scar	Wide	1	Irregular	10.11	29.79	5.98	2.1	Cortex on distal end
245	8-Jun E	33 SW-4	1 Silcrete	Distal Fragment	1755	11 1.7%	Hinge	1	10.4 N/A		N/A N/A		
246	8-Jun E	33 SW-4	1 Silcrete	Core					14.44 N/A		N/A N/A		IRREGULAR MULTIDIRECTIONAL
47	8-Jun E	33 SW-4	1 Silcrete	Other					7.09 N/A		V/A N/A		Angular fragment
248	8-Jun E	33 SW-4	1 Silcrete	Other				1	5.26 N/A		N/A N/A		Angular fragment
249	9-Jun E	33 SW-4	2 Silcrete	Distal Fragment	1		Feather		15.06 N/A		N/A N/A		
	9-Jun E	33 SW-4		Distal Formani			Feather		15.5 N/A				
			2 Silcrete	Distal Fragment		1		1					1
	9-Jun E	33 SW-4	2 Quartz	Distal Fragment		-	Bipolar		14.5 N/A		N/A N/A		
251	9-Jun E	33 SW-4	2 Silcrete	Distal Fragment			Bipolar		12.28 N/A		V/A N/A		
251	9-Jun E	33 SW-4	2 Silcrete	Distal Fragment			Feather		9.99 N/A		N/A N/A		
251 252 253	0.1	33 SW-4	2 Silcrete	Flake	Faceted	Focal	Feather	Irregular	9.43	6.18	3.31 N/A		
251 252 253 254	9-Jun E	33 5W-4	2 Silcrete	Other					14.54 N/A		N/A N/A		Angular fragment
251 252 253 254	9-Jun E				Faceted	Wide			20.46 N/A		N/A N/A		
251 252 253 254 255			1 Silcrete	Proximal Flake									
251 252 253 254 255 256	9-Jun E 8-Jun E	33 SW-5	1 Silcrete 1 Silcrete				Feather	Irregular	13.33	16.06		0.6	
250 251 252 253 254 255 256 257	9-Jun E		1 Silcrete 1 Silcrete	Flake	Faceted	Focal	Feather	Irregular			2.66	0.6	

258 259															
259	8-Jun E	3:	5W-5	1 Silcrete	Flake	Flake Scar	Wide	Feather	High/Strong	14.74	7.93	4.98	0.3	7	
	8-Jun E		5W-5	1 Silcrete	Flake	Flake Scar	Wide	Feather	Low/Weak	9.52	12.15	5.4			
260	8-Jun E		5W-5	1 Silcrete	Flake	Cortex	Wide	Feather	Irregular	8.43	11.19	3.94			
261	8-Jun E		5W-5	1 Silcrete	Distal Fragment	-	Will be	Feather	птерия	10.35 N/A	N/		N/A		
262			5W-5			n (-	Wide	I CAUTEI	-		N/		N/A	100000000000000000000000000000000000000	
	8-Jun E			1 Petrified Wood	Proximal Flake	Flake Scar	Wide			15.96 N/A				petrified wood	
263	8-Jun E		5W-5	1 Silcrete	Other					7.97 N/A	N/		N/A	Angular fragment	
264	9-Jun E	3:	5W-5	2 Silcrete	Flake	Faceted	Focal	Bipolar	Irregular	15.16	7.52	3.03	0.4	4	
265	9-Jun E	3	3 SW-5	2 Silcrete	Distal Fragment			Feather		13.76 N/A	N/	Α	N/A		
266	9-Jun E	3	3 SW-5	2 Silcrete	Flake	Faceted	Focal	Feather	Irregular	12.36	7.11	2.04	0.	3	
267	9-Jun E		5W-5	2 Silcrete	Flake	Flake Scar	Wide	Bipolar		10.5	6.92	5.48	N/A		
268	9-Jun E		SW-5	2 Silcrete	Other	Hane Jean	WINE	Diporat	Irregular	9.8 N/A	N/		N/A		
								-						Angular fragment	
269	9-Jun E		SW-6	1 Silcrete	Proximal Flake	Faceted	Focal			13.28 N/A	N/		N/A		
270	9-Jun E	3	5W-6	1 Silcrete	Other			1 1	1.11	8.03 N/A	N/	Α	N/A	Angular fragment	
271	9-Jun E	3:	3 SW-6	2 Silcrete	Proximal Flake	Faceted	Focal			11.78 N/A	N/	Α	N/A	7	
272	9-Jun E	3	5W-6	2 Silcrete	Flake	Flake Scar	Wide	Step	Irregular	9.14	12.09	3.13	N/A		
273	9-Jun E		SW-6	2 Silcrete	Flake	Faceted	Focal	Feather		9.32	10.01	1.96		1	
274			5W-6		Flake	Faceted	Focal	Feather	Irregular	8.58	9.89	1.49		4	
	9-Jun E			2 Silcrete		raceted	rocal		Irregular					-	
275	9-Jun E		SW-6	2 Silcrete	Distal Fragment			Feather		7.41 N/A	N/		N/A		
276	9-Jun E		SW-6	2 Silcrete	Distal Fragment			Feather	100	9.58 N/A	N/		N/A		1
277	9-Jun E	3.	SW-6	2 Silcrete	Other					9.27 N/A	N/	Α	N/A	Angular fragment	
278	9-Jun E	3:	3 SW-6	2 Petrified Wood	Other				+ 1	22.44 N/A	N/	A	N/A	Angular fragment petrified wood	
279	9-Jun E		5W-6	2 Petrified Wood	Other			7.		9.63 N/A	N/		N/A	Angular fragment petrified wood	
			500.6				+	*	1						
280	9-Jun E		5W-6	2 Petrified Wood	Other		-	_	_	10.1 N/A	N/		N/A	Angular fragment petrified wood	
281	9-Jun E		5W-6	2 Petrified Wood	Other		+	11.		11.65 N/A	N/		N/A	Angular fragment petrified wood	
282	9-Jun E		SW-7	1 Quartzite	Distal Fragment		dia a			20.94 N/A	N/		N/A	90% cortex	
283	9-Jun E		SW-7	1 Silcrete	Flake	Faceted	Focal	Feather	Irregular	8.7	13.66	3.39			
284	9-Jun E		5W-7	1 Silcrete	Core				113	18.5 N/A	N/		N/A	irregular multidirectional 3 scars	
285	9-Jun E	2	SW-7	2 Silcrete	Proximal Flake	Faceted	Focal			14.79 N/A	N/		N/A	manufacture 3 stars	
												A 4.13			
286	9-Jun E		5W-7	2 Silcrete	Flake	Faceted	Focal	Bipolar	_	13.46	5.62				
287	9-Jun E		5W-7	2 Silcrete	Distal Fragment		1	Feather		8.54 N/A	N/		N/A	1	
288	9-Jun E	3	5W-7	2 Silcrete	Proximal Flake	Faceted	Focal			8.66 N/A	N/	A	N/A		
289	9-Jun E		5W-7	2 Silcrete	Flake	Faceted	Wide	Feather	Irregular	19.09	15.38	4.64		9	
290	9-Jun E		SW-7	2 Silcrete	Flake	Faceted	Focal	Feather	Irregular	12.28	7.28	1.99	0.3		
291	9-Jun E		5W-7	2 Silcrete	Core	- Secret			a report	16.95 N/A	7.28 N/		N/A	multidirectional 4 scars	
							100.0		10000					murdurectional 4 SCars	
292	9-Jun E	3.	5W-7	2 Chert	Flake	Flake Scar	Wide	Feather	Irregular	9.32	8.45	1.74			
293	9-Jun E		5W-7	2 Silcrete	Distal Fragment			Feather		10.16 N/A	N/		N/A		
294	9-Jun E	3	SW-7	2 Silcrete	Flake	Flake Scar	Wide	Feather	Irregular	9.8	4.59	2.3			
295	9-Jun E	3	SW-7	2 Silcrete	Other	1112000				14.87 N/A	N/	Δ	N/A	Angular fragment	
296	9-Jun E		SW-7	2 Silcrete	Other		1	+	1	10.8 N/A	N/		N/A		-
296							-	*						Angular fragment	-
297	9-Jun E		5W-7	2 Silcrete	Other					10.25 N/A	N/		N/A	Angular fragment	
298	2-Jun E		3 W	1 Silcrete	Other			U .		12.43 N/A	N/		N/A	median broken flake	
299	2-Jun E	3.	3 W	2 Silcrete	Proximal Flake	Faceted	Wide			11.3 N/A	N/	Α	N/A		
300	2-Jun E		w	2 Silcrete	Core					8.09 N/A	N/		N/A	exhausted multidirectional 6 scars	
301	2-Jun E		W	2 Silcrete			+	+	1	9.4 N/A	N/		N/A	exhausted multidirectional 2 scars	200/
					Core		-	+							20% cortex
302	2-Jun E		W	2 Silcrete	Other					11.12 N/A	N/		N/A	Angular fragment	
303	2-Jun E	3.	3 W	3 Silcrete	Proximal Flake	Flake Scar	Wide		1	9.52 N/A	N/	A	N/A		
304	2-Jun E	3	3 W	3 Silcrete	Distal Fragment			Feather		9.02 N/A	N/	A	N/A		
305	2-Jun E		w	3 Silcrete	Other		1		1	13.8 N/A	N/		N/A	Angular fragment	
306	2-Jun E	1 2	NW		Flake	Flake Scar	Wide	The same of the sa	Low/Weak	15.87	8.65	2.67			
				1 Silcrete				Hinge						5 cortex on termination	
307	2-Jun E		NW.	1 Silcrete	Flake	Faceted	Focal	Hinge	Low/Weak	6.17	9.56		N/A		
308	2-Jun E		NW		Other					7.37 N/A	N/	A	N/A		
309		3.		1 Silcrete		-				7.37 N/A			N/A		
	Z-Jun E		NW	1 Silcrete	Other					6.01 N/A	IN/	Α			
310	2-Jun E 2-Jun E	3:				Flake Scar	Wide	Tr.	1		N/		N/A		
310	2-Jun E	3:	NW NW	1 Silcrete 1 Silcrete	Other Proximal Flake	100000000000000000000000000000000000000	20.00	Easter		6.01 N/A 8.92 N/A	N/	Α	N/A	deletion	
311	2-Jun E 2-Jun E	3: 3: 3:	NW NW NW	1 Silcrete 1 Silcrete 1 Chalcedony	Other Proximal Flake Flake	Faceted	Focal	Feather		6.01 N/A 8.92 N/A 10.89	10.24	A 2,42	N/A N/A	chalcedony	
311 312	2-Jun E 2-Jun E 2-Jun E	3: 3: 3: 3:	NW NW NW NW	1 Silcrete 1 Silcrete 1 Chalcedony 1 Silcrete	Other Proximal Flake Flake Proximal Flake	100000000000000000000000000000000000000	20.00			6.01 N/A 8.92 N/A 10.89 9.75 N/A	10.24 N/	A 2.42 A	N/A N/A N/A	chalcedony	
311 312 313	2-Jun E 2-Jun E 2-Jun E 2-Jun E	3: 3: 3: 3: 3:	NW NW NW NW NW	1 Silcrete 1 Silcrete 1 Chalcedony 1 Silcrete 1 Silcrete	Other Proximal Flake Flake Proximal Flake Distal Fragment	Faceted	Focal	Feather Feather		6.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A	10.24 N/ N/	A 2.42 A A	N/A N/A N/A N/A		
311 312 313 314	2-Jun E 2-Jun E 2-Jun E	3: 3: 3: 3: 3: 3:	S NW S NW S NW S NW S NW	1 Silcrete 1 Silcrete 1 Chalcedony 1 Silcrete	Other Proximal Flake Flake Proximal Flake Distal Fragment Other	Faceted	Focal			6.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A	10.24 N/	A 2.42 A A	N/A N/A N/A	chalcedony Angular fragment	
311 312 313	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E	3: 3: 3: 3: 3: 3:	NW NW NW NW NW	1 Silcrete 1 Silcrete 1 Chalcedony 1 Silcrete 1 Silcrete	Other Proximal Flake Flake Proximal Flake Distal Fragment	Faceted	Focal			6.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A	10.24 N/ N/	A 2.42 A A A	N/A N/A N/A N/A		
311 312 313 314	2-Jun E 2-Jun E 2-Jun E 2-Jun E	3: 3: 3: 3: 3: 3: 3:	S NW S NW S NW S NW S NW	1 Silcrete 1 Silcrete 1 Chalcedony 1 Silcrete 1 Silcrete 1 Silcrete	Other Proximal Flake Flake Proximal Flake Distal Fragment Other	Faceted Faceted	Focal Focal		Low/Weak	6.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A	10.24 N/ N/ N/	A 2.42 A A A	N/A N/A N/A N/A N/A N/A	Angular fragment	
311 312 313 314 315 316	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E	33 33 33 33 33 33 33	3 NW 3 NW 3 NW 3 NW 3 NW 3 NW 3 NW-1	1 Silcrete 1 Silcrete 1 Chalcedony 1 Silcrete 1 Silcrete 1 Silcrete 1 Silcrete 1 Silcrete 1 Silcrete	Other Proximal Flake Flake Proximal Flake Distal Fragment Other Proximal Flake Flake	Faceted Faceted Faceted Faceted	Focal Focal Focal	Feather Feather	Low/Weak	6.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A 18.88 N/A	10.24 N/ N/ N/ N/ 7.6	A 2.42 A A A A A 2.29	N/A N/A N/A N/A N/A N/A N/A	Angular fragment	
311 312 313 314 315 316 317	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E	33 33 33 33 33 33 33 33 33	3 NW 3 NW 3 NW 3 NW 3 NW 3 NW 3 NW 3 NW-1 3 NW-1	1 Silcrete 1 Silcrete 1 Chalcedony 1 Silcrete	Other Proximal Flake Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Flake Flake	Faceted Faceted Faceted	Focal Focal	Feather	Low/Weak	6.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A 11.66 4.43	N/ 10.24 N/ N/ N/ N/ 7.6 6.95	A 2.42 A A A A A A A A A A A A A A A A A A A	N/A N/A N/A N/A N/A N/A N/A	Angular fragment	
311 312 313 314 315 316 317 318	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E	33 33 33 33 33 33 33 33 33 33	3 NW 3 NW 3 NW 3 NW 3 NW 3 NW 3 NW-1 3 NW-1 3 NW-1	1 Silcrete 1 Silcrete 1 Chalcedony 1 Silcrete	Other Proximal Flake Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Flake Flake Core	Faceted Faceted Faceted Faceted	Focal Focal Focal	Feather Feather	Low/Weak	6.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A 10.63 N/A 11.06 4.43 15.29 N/A	N/ 10.24 N/ N/ N/ N/ 7.6 6.95	A 2.42 A A A A A A A A A A A A A A A A A A A	N/A N/A N/A N/A N/A N/A N/A O.:	Angular fragment 3 multidirectional 5 scars	
311 312 313 314 315 316 317 318	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E	3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3:	3 NW 3 NW 3 NW 3 NW 3 NW 3 NW 3 NW 1 NW-1 3 NW-1 3 NW-1 3 NW-1	1 Silcrete 1 Silcrete 1 Chalcedony 1 Silcrete	Other Proximal Flake Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Flake Core Other	Faceted Faceted Faceted Faceted Faceted Faceted	Focal Focal Focal Focal Focal	Feather Feather Feather		6.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A 11.06 4.43 15.29 N/A 13.36 N/A	N/ 10.24 N/ N/ N/ N/ 7.6 6.95 N/	A 2.42 A A A A A A A A A A A A A A A A A A A	N/A N/A N/A N/A N/A N/A N/A O.: N/A N/A N/A	Angular fragment 3 multidirectional 5 scars Angular fragment	
311 312 313 314 315 316 317 318 319 320 N	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E	33 33 33 33 33 33 33 33 33 33 33	3 NW 3 NW 3 NW 3 NW 3 NW 3 NW 3 NW-1 3 NW-1 3 NW-1 3 NW-1 3 NW-1 3 NW-1	Silorete Silorete Chaicedony Silorete Chaicedony Silorete	Other Proximal Flake Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Flake Flake Core Other Tlake Flake Flake Flake Flake Flake Flake	Faceted Faceted Faceted Faceted Faceted Faceted Faceted	Focal Focal Focal Focal Focal Focal	Feather Feather Feather	Low/Weak	5.01 N/A 8.92 N/A 10.89 9,75 N/A 8.12 N/A 10.63 N/A 18.88 N/A 11.06 4.43 15.29 N/A 13.36 N/A 17.41	10.24 N/ N/ N/ N/ 7.6 6.95 N/ N/	A 2.42 A A A A A A 2.29 1.77 A A 2.64	N/A	Angular fragment multidirectional 5 scars Angular fragment	
311 312 313 314 315 316 317 318 319 320 N,	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E	33 33 33 33 33 33 33 33 33 33 33 33 33	8 NW 3 NW 3 NW 3 NW 3 NW 3 NW 3 NW-1 3 NW-1 3 NW-1 3 NW-1 3 NW-1 3 NW-1	1 Silcrete 1 Silcrete 1 Chalcedony 1 Silcrete 2 Silcrete 2 Silcrete 2 Silcrete	Other Proximal Flake Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Flake Core Other	Faceted Faceted Faceted Faceted Faceted Faceted	Focal Focal Focal Focal Focal Focal Focal Focal	Feather Feather Feather		6.01 N/A 8.92 N/A 10.88 9.75 N/A 8.12 N/A 10.63 N/A 18.88 N/A 11.06 4.43 15.29 N/A 13.36 N/A 17.41	N/ 10.24 N/ N/ N/ N/ 7.6 6.95 N/	A 2.42 A A A A A A A A A A A A A A A A A A A	N/A N/A N/A N/A N/A N/A N/A O.: N/A N/A N/A N/A N/A	Angular fragment multidirectional 5 scars Angular fragment	
311 312 313 314 315 316 317 318 319 320 N	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E	33 33 33 33 33 33 33 33 33 33 33 33 33	3 NW 3 NW 3 NW 3 NW 3 NW 3 NW 3 NW-1 3 NW-1 3 NW-1 3 NW-1 3 NW-1 3 NW-1	Silorete Silorete Chaicedony Silorete Chaicedony Silorete	Other Proximal Flake Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Flake Flake Core Other Tlake Flake Flake Flake Flake Flake Flake	Faceted Faceted Faceted Faceted Faceted Faceted Faceted	Focal Focal Focal Focal Focal Focal	Feather Feather Feather	Low/Weak	5.01 N/A 8.92 N/A 10.89 9,75 N/A 8.12 N/A 10.63 N/A 18.88 N/A 11.06 4.43 15.29 N/A 13.36 N/A 17.41	10.24 N/ N/ N/ N/ 7.6 6.95 N/ N/	A 2.42 A A A A A A A A A A A A A A A A A A A	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	Angular fragment multidirectional 5 scars Angular fragment	
311 312 313 314 315 316 317 318 319 320 N 321 N	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 4-Jun E 3-Jun E 5-Jun E 5-Jun E 5-Jun E	33 33 33 33 33 33 33 33 33 33 33 33 33	3 NW 3 NW 3 NW 3 NW 3 NW 3 NW-1 3 NW-1 3 NW-1 3 NW-1 3 NW-1 3 NW-1 3 NW-1	1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 1 Chalcedony 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 2 Silorete 2 Silorete 2 Silorete 2 Silorete	Other Proximal Flake Proximal Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Core Other Flake Flake Flake Flake Flake	Faceted Faceted Faceted Faceted Faceted Faceted Faceted Faceted Faceted	Focal Focal Focal Focal Focal Focal Focal Focal	Feather Feather Feather	Low/Weak Low/Weak	6.01 N/A 8.92 N/A 10.88 9.75 N/A 8.12 N/A 10.63 N/A 18.88 N/A 11.06 4.43 15.29 N/A 13.36 N/A 17.41	10.24 N/ N/ N/ N/ 7.6 6.95 N/ N/ 11.51	A 2.42 A A A A A A A A A A A A A A A A A A A	N/A N/A N/A N/A N/A N/A N/A O.: N/A N/A N/A O.: N/A N/A	Angular fragment 3 multidirectional 5 scars Angular fragment 5	
311 312 313 314 315 316 317 318 319 320 N 321 N, 322 N,	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 4-Jun	33 33 33 33 33 33 33 33 33 33 33 33 33	3 NW 3 NW 3 NW 3 NW 3 NW 3 NW 3 NW-1 3 NW-1 3 NW-1 3 NW-1 3 NW-1 3 NW-1 3 NW-1 3 NW-1 3 NW-1	1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 2 Silorete 2 Silorete 2 Silorete 2 Silorete 2 Silorete	Other Proximal Flake Proximal Flake Proximal Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Core Other Flake	Faceted	Focal	Feather Feather Feather Feather Step	Low/Weak Low/Weak Irregular	6.01 N/A 8.92 N/A 10.88 9.75 N/A 8.12 N/A 10.63 N/A 10.63 N/A 11.06 4.43 15.29 N/A 13.36 N/A 17.41 14.7 12.26 N/A 8.66	N/ 10.24 N/ N/ N/ 7.6 6.95 N/ N/ 11.51 6.92 N/	A 2.42 A A A A A 2.29 1.77 A A 2.64 1.5 A 2.08	N/A	Angular fragment 3 multidirectional 5 scars Angular fragment 5	
311 312 313 314 315 316 317 318 319 320 N 321 N 322 N 323 N	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 4-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 4-Jun E 4-Jun E 4-Jun E 5-Jun E 5-Jun E 6-Jun E 6-Jun E 6-Jun E 7-Jun	3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3	3 NW	1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 1 Chalcedony 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 2 Silorete 2 Silorete 2 Silorete 2 Silorete 2 Silorete	Other Proximal Flake Flake Proximal Flake Proximal Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Core Other Flake Flake Flake Flake Flake Flake Flake Flake Flake	Faceted	Focal	Feather Feather Feather Feather Feather	Low/Weak Low/Weak	5.01 N/A 8.92 N/A 10.89 9,75 N/A 8.12 N/A 10.63 N/A 11.06 1 1.06 1 1.06 1 1.06 1 1.06 1 1.06 1 1.07 1 1.08 1 1.08 1 1.08 1 1.09	N/ 10.24 N/ N/ N/ 7.6 6.95 N/ N/ 11.51 6.92 N/ 12.46	A 2.42 A A A A A A A A A A A A A A A A A A A	N/A	Angular fragment 3 multidirectional 5 scars Angular fragment 5	
311 312 313 314 315 316 317 318 319 320 N, 321 N, 322 N, 323 N, 324 N, 325 N,	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 4-Jun	3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3	3 NW 3 NW 3 NW 5 NW 5 NW 5 NW 6 NW 6 NW 6 NW 7	1 Silorete 1 Silorete 1 Chalcedory 1 Silorete 2 Silorete 3 Silorete	Other Proximal Flake Proximal Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Flake Core Other Flake	Faceted	Focal	Feather Feather Feather Feather Feather Feather Step Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A 10.63 N/A 11.06 4.43 15.29 N/A 13.36 N/A 17.41 14.7 12.26 N/A 8.66 12.37 N/A 10.74 N/A	N/ N/ N/ N/ N/ N/ N/ 7.6 6.95 N/ 11.51 6.92 N/ 12.46	A 2.42 A A A A 2.29 A A A A 2.29 A 1.77 A A 2.64 A 2.08 A A A	NVA N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A O.: N/A N/A O.: N/A N/A O.: N/A N/A O.: N/A N/A N/A	Angular fragment 3 multidirectional 5 scars Angular fragment 5	
311 312 313 314 315 316 317 318 320 N, 321 N, 322 N, 323 N, 324 N, 325 N, 326 N,	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 4-Jun E 3-Jun E 4-JA 4-B 6-B 7-B 7-B 7-B 7-B 8-B 8-B 8-B 8-B 8-B 8-B 8-B 8-B 8-B 8	3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3	\$ NW	1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 2 Silorete 3 Silorete	Other Proximal Flake Flake Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Flake Flake Flake Flake Flake Proximal Flake Flake Proximal Flake	Faceted	Focal Wide Focal Wide Focal	Feather Feather Feather Feather Step	Low/Weak Low/Weak Irregular	5.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A 11.06 14.39 15.29 N/A 13.36 N/A 17.74 14.7 12.26 N/A 8.66 12.37 N/A 10.74 N/A 10.74 N/A	10.24 N/ N/ N/ N/ 7.6 6.95 N/ N/ 11.51 6.92 N/ 12.46 N/	A 2.42 A A A A 2.29 A A A 2.29 A A A 2.20 A A 2.64 A 2.68 A 2.08 A 2.08	NVA NVA NVA NVA NVA NVA NVA NVA NVA NVA	Angular fragment 3 multidirectional 5 scars Angular fragment 5	
311 312 313 314 315 316 317 318 319 320 N, 321 N, 322 N, 323 N, 324 N, 325 N, 326 N, 327 N,	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 4-Jun	3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3	\$ NW	1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 1 Chalcedony 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete 2 Silorete 3 Silorete 3 Silorete 3 Silorete	Other Proximal Flake Flake Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Flake Core Other Flake Proximal Flake Flake Flake Proximal Flake	Faceted	Focal	Feather Feather Feather Feather Feather Feather Step Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9,75 N/A 8.12 N/A 10.63 N/A 10.63 N/A 11.06 4.43 15.28 N/A 13.36 N/A 17.41 14.7 12.26 N/A 8.66 12.57 N/A 10.73 N/A 10.73 N/A	10.24 N/ N/ N/ N/ N/ 7.6 6.95 N/ N/ 11.51 6.92 N/ 12.46 N/ N/ 5.5 N/	A 2.42 A A A 2.29 A A A 2.29 A A 2.64 A 2.64 A 2.68 A 2.08 A 2.08 A 2.12	NVA	Angular fragment multidirectional 5 scars Angular fragment 3 4 longitudinal split right side	
311 312 313 314 315 316 317 318 319 320 N, 321 N, 322 N, 323 N, 324 N, 325 N, 326 N, 327 N,	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 4-Jun	3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3	\$ NW	1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 2 Silorete 3 Silorete	Other Proximal Flake Flake Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Flake Flake Flake Flake Flake Proximal Flake Flake Proximal Flake	Faceted	Focal Wide Focal Wide Focal	Feather Feather Feather Feather Feather Feather Step Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A 11.06 14.39 15.29 N/A 13.36 N/A 17.74 14.7 12.26 N/A 8.66 12.37 N/A 10.74 N/A 10.74 N/A	10.24 N/ N/ N/ N/ 7.6 6.95 N/ N/ 11.51 6.92 N/ 12.46 N/	A 2.42 A A A 2.29 A A A 2.29 A A 2.64 A 2.64 A 2.68 A 2.08 A 2.08 A 2.12	NVA NVA NVA NVA NVA NVA NVA NVA NVA NVA	Angular fragment multidirectional 5 scars Angular fragment 3 4 longitudinal split right side	
311 312 313 314 315 316 317 318 319 320 N, 321 N, 322 N, 323 N, 324 N, 325 N,	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 3-Jun E 4-Jun E 4-Jun	33 33 33 33 33 33 33 33 33 33 33 33 33	\$ NW	1 Silorete 1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 3 Silorete 2 Silorete 5 Silorete 5 Silorete 6 Silorete 7 Silorete 8 Silorete 9 Silorete	Other Proximal Flake Flake Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Flake Core Other Flake Proximal Flake Flake Flake Proximal Flake	Faceted	Focal Wide Focal Wide Focal	Feather Feather Feather Feather Feather Feather Step Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9,75 N/A 8.12 N/A 10.63 N/A 10.63 N/A 11.06 4.43 15.28 N/A 13.36 N/A 17.41 14.7 12.26 N/A 8.66 12.57 N/A 10.73 N/A 10.73 N/A	10.24 N/ N/ N/ N/ N/ 7.6 6.95 N/ N/ 11.51 6.92 N/ 12.46 N/ N/ 5.5 N/	A 2.42 A A A 2.29 A A 2.64 A 2.64 A 2.68 A 2.08 A A 2.12 A A A A	NVA	Angular fragment 3 multidirectional 5 scars Angular fragment 3 4 longitudinal split right side Angular fragment	
311 312 313 314 315 316 317 318 320 N, 321 322 N, 323 N, 324 N, 325 N, 326 N, 327 N, 328 N, 329 N,	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 4-Jun E 4-Jun	33 33 33 33 33 33 33 33 33 33 33 33 33	5 NNW 1 NNW	1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 1 Chalcedony 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete	Other Proximal Flake Flake Proximal Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Flake Core Other Flake Other Other Other Other	Faceted	Focal Wide Focal Wide Focal	Feather Feather Feather Feather Feather Feather Step Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9,75 N/A 8.12 N/A 10.63 N/A 11.06 N/A 11.08 15.29 N/A 13.36 N/A 17.41 14.7 12.26 N/A 8.66 12.27 N/A 10.023 15.13 N/A 11.41 N/A 14.41 N/A 14.41 N/A	10.24 N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/	A 2.42 A A A 2.29 A A A 2.29 A A 2.64 A 2.08 A 2.08 A A 2.08 A A A A A A A A A A A A A A A A A A A	NVA NVA NVA NVA NVA NVA NVA NVA NVA NVA NVA O.: NVA O.: NVA O.: NVA NVA NVA NVA NVA NVA NVA NV	Angular fragment multidirectional 5 scars Angular fragment a longitudinal split right side Angular fragment Angular fragment Angular fragment Angular fragment	
311 312 313 314 315 316 317 320 N 320 N 322 N 322 N 325 N 325 N 325 N 326 N 327 N 327 N 328 N 329 N	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 4-Jun	33 33 33 33 33 33 33 33 33 33 33 33 33	5 NW NW NW NW S NW S NW S NW S NW S NW S	1 Silorete 1 Slorete 1 Chalcedory 1 Silorete 1 Chalcedory 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete 3 Silorete 3 Silorete 5 Silorete 5 Silorete 6 Silorete 7 Silorete 7 Silorete 8 Silorete 9 Silorete 9 Silorete 9 Silorete	Other Proximal Flake Proximal Flake Proximal Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Core Other Flake Other Other Other Other Other	Faceted	Focal Wide Focal Wide Focal	Feather Feather Feather Feather Feather Feather Step Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A 11.06 4.43 15.28 N/A 13.36 N/A 17.41 14.7 12.26 N/A 8.66 12.37 N/A 10.74 N/A 10.74 N/A 10.74 N/A 10.74 N/A 11.41 N/A 14.41 N/A 14.41 N/A 14.41 N/A 14.41 N/A 14.41 N/A	10.24 N/ N/ N/ N/ 7.6 6.95 N/ 11.51 6.92 N/ 12.46 N/ 5.5 N/ N/	A 2.42 A A A 2.29 A A 2.64 A 2.64 A 2.68 A 2.08 A 2.12 A A A A A A A A A A A A	NVA	Angular fragment 3 multidirectional 5 scars Angular fragment 3 longitudinal split right side Angular fragment Angular fragment Angular fragment Angular fragment Angular fragment	
311 312 313 314 315 316 317 318 319 319 320 N 321 N 322 N 325 N 327 N 327 N 327 N 328 N 329 N 329 N 320 N 321 N 321 N 321 N 322 N	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 4-Jun	33 33 33 33 33 33 33 33 33 33 33 33 33	5 NNW NWW NWW NWW NWW NWW NWW S NWW 5 NNW 5 NNW-1	1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 1 Chalcedony 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete	Other Proximal Flake Flake Proximal Flake Proximal Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Flake Core Other Flake Other Other Other Other Other Other	Faceted	Focal	Feather Feather Feather Feather Feather Feather Step Feather Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A 11.06 N/A 11.08 4.43 15.29 N/A 13.36 N/A 17.41 14.7 12.26 N/A 8.66 12.37 N/A 10.74 N/A 10.73 N/A 11.41 N/A 14.41 N/A 14.41 N/A 14.51 N/A 14.51 N/A 14.51 N/A 14.51 N/A 14.51 N/A 14.51 N/A	10.24 N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/	A 2.42 A A A 2.29 A A 2.54 A 2.64 A 2.64 A 2.08 A 2.08 A A 2.12 A A A A A A A A A	NVA	Angular fragment multidirectional 5 scars Angular fragment a longitudinal split right side Angular fragment Angular fragment Angular fragment Angular fragment	
311 312 313 314 315 316 317 318 319 320 N 321 N 322 N 322 N 325 N 326 N 327 N 328 N 329 N 321 N 321 N 321 N 321 N 321 N 322 N 323 N 324 N 325 N 326 N 327 N 327 N 327 N 328 N	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 4-Jun	33 33 33 33 33 33 33 33 33 33 33 33 33	3 NOW 3 NOW 5 NOW	1 Silorete 1 Slorete 1 Chalcedory 1 Silorete 1 Chalcedory 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete 3 Silorete 3 Silorete 5 Silorete 5 Silorete 6 Silorete 7 Silorete 7 Silorete 8 Silorete 9 Silorete 9 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 2 Silorete	Other Proximal Flake Flake Flake Proximal Flake Proximal Flake Distal Fragment Other Proximal Flake Other Flake Other Other Other Other	Faceted	Focal Wide Focal Wide Focal	Feather Feather Feather Feather Feather Feather Step Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A 10.63 N/A 11.06 4.43 15.28 N/A 13.36 N/A 17.41 14.7 12.26 N/A 8.66 12.37 N/A 10.74 N/A 10.73 N/A 10.74 N/A 10.75 N/A 11.41 N/A 4.41 N/A 4.41 N/A 4.41 N/A 4.40 N/A	10.24 N/ N/ N/ N/ 7.6 6.95 N/ 11.51 6.92 N/ 12.46 N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/	A 2.42 A A A 2.29 A A 2.64 A 2.64 A 2.68 A A 2.08 A A 2.12 A A A A A A A A A A A 1.68	NVA	Angular fragment 3 multidirectional 5 scars Angular fragment 5 longitudinal split right side Angular fragment	
311 312 313 314 315 316 317 318 319 319 320 N 321 N 322 N 325 N 327 N 327 N 327 N 328 N 329 N 329 N 320 N 321 N 321 N 321 N 322 N	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 4-Jun	33 33 33 33 33 33 33 33 33 33 33 33 33	5 NNW NWW NWW NWW NWW NWW NWW S NWW 5 NNW 5 NNW-1	1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 1 Chalcedony 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete	Other Proximal Flake Flake Proximal Flake Proximal Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Flake Core Other Flake Other Other Other Other Other Other	Faceted	Focal	Feather Feather Feather Feather Feather Feather Step Feather Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A 11.06 N/A 11.08 4.43 15.29 N/A 13.36 N/A 17.41 14.7 12.26 N/A 8.66 12.37 N/A 10.74 N/A 10.73 N/A 11.41 N/A 14.41 N/A 14.41 N/A 14.51 N/A 14.51 N/A 14.51 N/A 14.51 N/A 14.51 N/A 14.51 N/A	10.24 N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/	A 2.42 A A A 2.29 A A 2.64 A 2.64 A 2.68 A A 2.08 A A 2.12 A A A A A A A A A A A 1.68	NVA	Angular fragment 3 multidirectional 5 scars Angular fragment 5 longitudinal split right side Angular fragment	
311 313 314 315 314 315 316 316 317 318 317 318 320 N 320 N 322 N 322 N 322 N 325 N	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 4-Jun	33 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	3 NNW 5 NNW-1	1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 1 Chalcedony 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete 2 Silorete 2 Silorete 2 Silorete 3 Silorete 2 Silorete	Other Proximal Flake Flake Flake Proximal Flake Proximal Flake Distal Fragment Other Proximal Flake Other Flake Other Other Other Other	Faceted	Focal	Feather Feather Feather Feather Feather Feather Step Feather Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A 10.63 N/A 11.06 4.43 15.29 N/A 13.36 N/A 17.41 14.7 12.26 N/A 8.66 12.37 N/A 10.74 N/A 10.75 N/A 11.4.1 N/A 14.13 N/A 14.01 N/A 13.16 N/A 13.16 N/A 8.52 16.15 N/A	10.24 N/ N/ N/ N/ 7.6 6.95 N/ 11.51 6.92 N/ 12.46 N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/	A 2.42 A A A 2.29 A A A 2.54 A A 2.64 A 1.5 A 2.68 A A A A A A A A A A A A A A A A A A A	NVA	Angular fragment 3 multidirectional 5 scars Angular fragment 5 4 Iongitudinal split right side Angular fragment	
311 312 313 314 315 316 316 316 319 316 319 320 N 321 N 322 N 322 N 322 N 322 N 323 N 323 N 324 N 325 N 325 N 326 N 327 N 328 N 327 N 328 N 327 N 328	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4/A	33 33 33 33 33 33 33 33 33 33 33 33 33	3 NOW 3 NOW 5 NOW 6 NOW	1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 1 Chalcedony 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete 2 Silorete 3 Silorete 3 Silorete 5 Silorete 5 Silorete 6 Silorete 7 Silorete 7 Silorete 8 Silorete 9 Silorete 9 Silorete 9 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete	Other Proximal Flake Flake Flake Proximal Flake Proximal Flake Distal Fragment Other Proximal Flake Flake Flake Core Other Flake Flake Flake Flake Flake Flake Flake Flake Proximal Flake Flake Other	Faceted	Focal	Feather Feather Feather Feather Feather Feather Step Feather Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9,75 N/A 8.12 N/A 10.63 N/A 10.63 N/A 11.06 4.43 15.29 N/A 13.36 N/A 17.41 14.7 12.26 N/A 8.66 12.37 N/A 10.73 N/A 10.73 N/A 10.73 N/A 10.74 N/A 10.73 N/A 11.41 N/A 14.51 N/A 14.51 N/A 14.51 N/A 14.51 N/A 15.52 N/A 15.53 N/A 15.54 N/A 15.55 N/A 15.55 N/A 15.55 N/A 15.55 N/A	N/ N/ N/ N/ N/ N/ 7.6 6.95 N/ 11.51 6.92 N/ 12.46 N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/	A 2.42 A A A 2.29 A A 2.40 A A 2.40 A A 2.40 A 2.64 A 2.08 A 2.02 A 2.02 A 3.03 A 3.03 A 3.03 A 4.03 A 4.03 A 5.03 A 6.03 A 7.03	NI/A NI/A NI/A NI/A NI/A NI/A NI/A NI/A	Angular fragment multidirectional 5 scars Angular fragment 3 4 longitudinal split right side Angular fragment	
311 311 313 314 315 316 316 317 318 316 317 318 319 320 N 320 N 320 N 322 N 323 N 325 N 325 N 327 N 327 N 327 N 327 N 327 N 328 N 327 N 328 N 32	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 4-Jun	33 33 33 33 33 33 33 33 33 33 33 33 33	3 NOW 3 NOW 5 NOW	1 Silorete 1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete 2 Silorete 3 Silorete 3 Silorete 5 Silorete 5 Silorete 6 Silorete 1 Silorete 2 Silorete 2 Silorete 3 Silorete 3 Silorete 5 Silorete 5 Silorete 6 Silorete 7 Silorete 6 Silorete 7 Silorete 7 Silorete 8 Silorete 9 Silorete	Other Proximal Flake Flake Flake Proximal Flake Distal Fragment Other Proximal Flake Other Other Other Other Other Other Other Other Other	Faceted	Focal	Feather Feather Feather Feather Feather Feather Step Feather Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A 11.06 14.33 15.29 N/A 13.36 N/A 13.36 N/A 14.7 12.26 N/A 8.66 12.37 N/A 10.74 N/A 10.74 N/A 10.74 N/A 11.41 N/A 14.13 N/A 14.13 N/A 14.13 N/A 15.15 N/A	N/ N/ N/ N/ N/ N/ N/ 7.6 6.95 N/ 11.51 6.92 N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/	A 2.42 A A A 2.29 A 1.77 A 2.64 A 1.5 A 2.08 A A 2.12 A A 3.16 A A 4 A A A A A A A A A A A	NVA NVA NVA NVA NVA NVA NVA NVA NVA N	Angular fragment 3 multidirectional 5 scars Angular fragment 5 longitudinal split right side Angular fragment	
311 313 314 315 316 316 317 318 319 320 N 321 N 322 N 322 N 322 N 323 N 325 N	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 4-Jun E 4-Jun	33 33 33 33 33 33 33 33 33 33 33 33 33	3 NOW 3 NOW 5 NOW	1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 1 Chalcedony 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete 2 Silorete 3 Silorete 3 Silorete 2 Silorete	Other Proximal Flake Flake Proximal Flake Proximal Flake Distal Fragment Other Proximal Flake Other Other Other Other Other Other Other Other	Faceted	Focal	Feather Feather Feather Feather Feather Feather Step Feather Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9,75 N/A 8.12 N/A 10.63 N/A 11.06 N/A 11.08 13.36 N/A 13.36 N/A 13.36 N/A 13.36 N/A 13.37 N/A 10.74 N/A 8.66 12.27 N/A 10.74 N/A 10.73 N/A 10.74 N/A 10.75 N/A 10.75 N/A 10.75 N/A 10.75 N/A 10.75 N/A 10.77 N/A 11.41 N/A 14.43 N/A 14.43 N/A 14.51 N/A 14.51 N/A 14.51 N/A 14.51 N/A 14.51 N/A 14.51 N/A 13.56 N/A 13.56 N/A 13.56 N/A 13.56 N/A 13.57 N/A 13.58 N/A	N/ N/ N/ N/ N/ N/ N/ 7.6 6.95 N/ 11.51 6.92 N/ 12.46 N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/	A 2.42 A A A A 2.29 A A 2.64 A 2.08 A 2.12 A 2.08 A 2.12 A A 3.168 A 4 A 4 A 4 A A A A A A A A A A A A A A	NI/A NI/A NI/A NI/A NI/A NI/A NI/A NI/A	Angular fragment multidirectional 5 scars Angular fragment 3 4 longitudinal split right side Angular fragment	
311 312 313 314 315 316 316 317 318 316 317 318 319 320 N 321 N 322 N 322 N 322 N 322 N 323 N 325 N 325 N 326 N 327 N 326 N 327 N 327 N 327 N 327 N 328 N 329 N 329 N 328 N 32	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 4-Jun	33 33 33 33 33 33 33 33 33 33 33 33 33	3 NOW 3 NOW 3 NOW 3 NOW 1 NOW	1 Silorete 2 Silorete	Other Proximal Flake Proximal Flake Proximal Flake Proximal Flake Proximal Flake Proximal Flake Other	Faceted	Focal	Feather Feather Feather Feather Feather Feather Step Feather Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A 10.63 N/A 11.06 4.43 15.28 N/A 13.36 N/A 17.74 N/A 16.25 N/A 16.26 N/A 16.74 N/A 10.74 N/A 10.73 N/A 11.41 N/A 14.41 N/A 14.	N/ 10.24 N/ N/ N/ N/ N/ N/ 7.6 6.95 N/ 11.51 6.92 N/ 12.46 N/ N/ N/ N/ N/ N/ N/ N/ N/ N/	A 2.42 A A A 2.29 A 7.77 A 2.64 A 1.57 A 2.08 A A 2.12 A A 3.41 A 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	NI/A NI/A NI/A NI/A NI/A NI/A NI/A NI/A	Angular fragment Multidirectional 5 scars Angular fragment Iongitudinal split right side Angular fragment	
311 313 314 315 316 316 317 318 318 319 320 N 321 N 322 N 322 N 322 N 323 N 325 N 32	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 4-Jun	33 33 33 33 33 33 33 33 33 33 33 33 33	3 NOW 3 NOW 3 NOW 3 NOW 1 NOW	1 Silorete 2 Silorete	Other Proximal Flake Proximal Flake Proximal Flake Proximal Flake Proximal Flake Proximal Flake Other	Faceted	Focal	Feather Feather Feather Feather Feather Feather Step Feather Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9.75 N/A 8.12 N/A 10.63 N/A 10.63 N/A 11.06 4.43 15.28 N/A 13.36 N/A 17.74 N/A 16.25 N/A 16.26 N/A 16.74 N/A 10.74 N/A 10.73 N/A 11.41 N/A 14.41 N/A 14.	N/ 10.24 N/ N/ N/ N/ N/ N/ 7.6 6.95 N/ 11.51 6.92 N/ 12.46 N/ N/ N/ N/ N/ N/ N/ N/ N/ N/	A 2.42 A A A 2.29 A 7.77 A 2.64 A 1.57 A 2.08 A A 2.12 A A 3.41 A 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	NI/A NI/A NI/A NI/A NI/A NI/A NI/A NI/A	Angular fragment Multidirectional 5 scars Angular fragment Iongitudinal split right side Angular fragment	
311 311 313 314 315 316 316 317 318 319 320 N 321 N 322 N 322 N 322 N 323 N 325 N 325 N 325 N 325 N 327 N 327 N 327 N 327 N 328 N 32	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 4-Jun E 4-Jun	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	3 NOW 3 NOW 1 NOW 1 NOW 1 NOW 1 NOW 1 NOW 2 NOW	1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 1 Chalcedony 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete 2 Silorete 3 Silorete 3 Silorete 2 Silorete 3 Silorete	Other Proximal Flake Flake Proximal Flake Proximal Flake Proximal Flake Distal Fragment Other Proximal Flake Other	Faceted Flake Scar Faceted Faceted	Focal Wide Focal Wide Focal Focal	Feather Feather Feather Feather Step Feather Feather Feather Feather Feather	Low/Weak Low/Weak Irregular Irregular	5.01 N/A 8.92 N/A 10.89 9,75 N/A 8.12 N/A 10.63 N/A 11.06 N/A 11.08 15.29 N/A 13.36 N/A 17.41 14.7 12.26 N/A 8.66 12.37 N/A 10.07 N/A 10.02 15.13 N/A 11.41 N/A 14.31 N/A 14.41 N/A 14.51 N/A 15.51 N/A 15.51 N/A 15.51 N/A 15.51 N/A 15.51 N/A 15.55 N/A 15.56 N/A 15.56 N/A 15.57 N/A 15.56 N/A 15.56 N/A 15.57 N/A	N/ 10.24 N/ N/ N/ N/ 7.6 6.95 N/ 11.51 6.92 N/ 12.46 N/ N/ N/ N/ N/ N/ N/ N/ N/ N/	A 2.42 A A A A 2.08 A A 2.08 A A 2.12 A A 2.08 A 2.16 A 2.16 A A 3.168 A A 4.4 A A A A A A A A A A A A A A A A A A A	NI/A NI/A NI/A NI/A NI/A NI/A NI/A NI/A	Angular fragment multidirectional 5 scars Angular fragment a longitudinal split right side longitudinal split right side angular fragment Broken backed blade?	
311 312 313 314 315 316 316 317 318 319 319 319 319 319 319 319 319 319 319	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4/A E	33 33 33 33 33 33 33 33 33 33 33 33 33	3 NOW 3 NOW 5 NOW	1 Silorete 1 Slorete 1 Chalcedony 1 Silorete 1 Chalcedony 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete 3 Silorete 3 Silorete 3 Silorete 5 Silorete 5 Silorete 1 Silorete 2 Silorete 3 Silorete 3 Silorete 3 Silorete 3 Silorete 3 Silorete	Other Proximal Flake Flake Flake Proximal Flake Distal Fragment Other Proximal Flake Other	Faceted Flake Scar Faceted Flake Scar Faceted Faceted	Focal Wide Focal Wide Focal Focal Wide Focal	Feather	Low/Weak Low/Weak Fregular Fregular Fregular	5.01 N/A 8.92 N/A 10.89 9,75 N/A 8.12 N/A 10.63 N/A 10.63 N/A 10.63 N/A 11.06 1 4.43 15.28 N/A 13.36 N/A 17.41 14.7 12.26 N/A 8.56 12.57 N/A 10.72 N/A 10.73 N/A 10.13 N/A 11.41 N/A	N/ 10.24 N/ N/ N/ N/ N/ N/ 1.51 6.92 N/ 11.51 N/ 12.46 N/ N/ N/ N/ N/ N/ N/ N/ N/ N/	A 2.42 A A A 2.29 A A 2.64 A 2.68 A A 2.08 A A 2.12 A A A A A A A A A A A A A A A A A A A	NI/A NI/A NI/A NI/A NI/A NI/A NI/A NI/A	Angular fragment Multidirectional 5 scars Angular fragment Iongitudinal split right side Angular fragment Broken backed blade? Broken backed blade?	
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311 312 313 314 315 316 317 318 319 320 N 321 N 322 N 325 N 325 N 326 N 327 N 328 N 327 N 328 N 327 N 328 N 329 N 329 N 320 N 321 N 321 N 322 N 323 N 325 N 326 N 327 N 328 N 327 N 328 N 328 N 329 N 329 N 320 N 320 N 321 N 322 N	2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 2-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 3-Jun E 4-Jun E 4-Jun	33 33 33 33 33 33 33 33 33 33 33 33 33	3 NOW 3 NOW 5 NOW	1 Silorete 1 Silorete 1 Chalcedony 1 Silorete 1 Chalcedony 1 Silorete 1 Silorete 1 Silorete 1 Silorete 1 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete 2 Silorete 3 Silorete 2 Silorete 2 Silorete 3 Silorete 3 Silorete 5 Silorete 6 Silorete 7 Silorete 8 Silorete 9 Silorete 1 Silorete 1 Silorete 2 Silorete 2 Silorete 3 Silorete 3 Silorete 3 Silorete 3 Silorete 5 Silorete 1 Silorete 1 Silorete 3 Silorete 3 Silorete 3 Silorete 5 Silorete 5 Silorete 6 Silorete 7 Silorete 8 Silorete 9 Silorete 9 Silorete 9 Silorete 9 Silorete 1 Silorete	Other Proximal Flake Flake Flake Proximal Flake Distal Fragment Other Proximal Flake Other Flake Flake Flake Flake Flake Other	Faceted Flake Scar Faceted Flake Scar Faceted Faceted	Focal Wide Focal Wide Focal Focal Wide Focal	Feather	Low/Weak Low/Weak Fregular Fregular Fregular	5.01 N/A 8.92 N/A 10.89 9,75 N/A 8.12 N/A 10.63 N/A 10.63 N/A 10.63 N/A 11.06 4.43 15.29 N/A 13.36 N/A 17.41 14.7 12.26 N/A 8.66 12.37 N/A 10.73 N/A 10.73 N/A 10.74 N/A 10.73 15.13 N/A 11.41 N/A 14.51 N/A 15.52 N/A 17.72 N/A 17.32 N/A 17.32 N/A 17.33 N/A 17.34 N/A 17.35 N/A 17.36 N/A 18.56 N/A 18.66 N/A 18.67 N/A 18.68 N/A 18.69 N/A 18.69 N/A 18.69 N/A 18.60 N/A 18.60 N/A	N, N N N N N N N N N	A 2.42 A A A 2.29 A A 2.40 A A 2.40 A A 2.64 A 2.08 A 2.12 A A 2.12 A A 3.40 A 4.40 A 4.40 A 5.78 A 5.78 A 2.39	NI/A NI/A NI/A NI/A NI/A NI/A NI/A NI/A	Angular fragment multidirectional 5 scars Angular fragment 5 4 Iongitudinal split right side Angular fragment Broken backed blade? Broken backed blade?	
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345	4-Jun E	33	NW-4	2 Silcrete	Flake	Faceted	Wide	Feather	Irregular	19.99	14.32	3.69	1	1.4
346	4-Jun E	33	NW-4	2 Silcrete	Distal Fragment			Feather	1	14.19 N/A	N/A		I/A	
347	4-Jun E	33	NW-4	2 Silcrete	Flake	Faceted	Focal	Feather	Irregular	15.78	7.6	2.81	I/A	
348	4-Jun E	33	NW-4	2 Chalcedony	Flake Tool	Indeterminate	Indeterminate			23.52 N/A	N/A			0.7 Chalcedony retouched geometric tool
349	4-Jun E	33	NW-4	2 Silcrete	Distal Fragment			Feather		11.21 N/A	N/A		VA.	
350	4-Jun E	33	NW-4	2 Silcrete	Other		1			12.27 N/A	N/A		I/A	Angular fragment
351	4-Jun E	33	NW-4	2 Silcrete	Other					10.63 N/A	N/A		I/A	Angular fragment
352	4-Jun E	33	NW-4	2 Silcrete	Other					8.52 N/A	N/A		I/A	Angular fragment
353	4-Jun E	33	NW-4	2 Chalcedony	Other					19.55 N/A	N/A		I/A	Angular fragment chalcedony
354	4-Jun E	33	NW-4	3 Silcrete	Flake	Faceted	Focal	Feather	Irregular	15.05	5.36	2.95		0.4 split flake
355	4-Jun E	33	NW-5	1 Silcrete	Flake	Flake Scar	Wide		Irregular	10.4	18.82	10.88		3 cortical termination
356	4-Jun E	33	NW-5	1 Silcrete	Proximal Flake	Faceted	Focal		Irregular	21.47 N/A	N/A		I/A	conjoin w 357-358
357	4-Jun E	33	NW-5	1 Silcrete	Distal Fragment		11.000		4 12 200	10.17 N/A	N/A	1	I/A	conjoin w 357-358
358	4-Jun E	33	NW-5	1 Silcrete	Distal Fragment					9.47 N/A	N/A		I/A	conjoin w 357-358
359	4-Jun E	33	NW-5	1 Silcrete	Flake	Faceted	Focal	Feather	Irregular	8.79	7.05	2.08		
360	4-Jun E	33	NW-5	2 Silcrete	Flake	Cortex	The second	Feather	Irregular	21.52	11.09	6.37		1.8
361	4-Jun E	33	NW-5	2 Silcrete	Core					27.31 N/A	N/A		VA.	multidirectional 6 scars
362	4-Jun E	33	NW-5	2 Silcrete	Core					11.45 N/A	N/A		VA.	bidirectional 3 scars exhausted
363	4-Jun E	33	NW-5	2 Silcrete	Other				4	8.94 N/A	N/A		I/A	Angular fragment
364	4-Jun E	33	NW-6	2 Silcrete	Other					9.35 N/A	N/A		I/A	Angular fragment
365	4-Jun E	33	NW-6	2 Chalcedony	Other		III A TOTAL	Page 1	1 1	29.27 N/A	N/A		I/A	Chalcedony split distal flake?
366	4-Jun E	33	NW-7	1 Silcrete	Flake	Cortex	Indeterminate	Feather	Irregular	9.75	17.13	3.66		0.7
367	4-Jun E	33	NW-6	1 Silcrete	Flake	Flake Scar	Wide	Bipolar	Irregular	11.54	8.77	3.56		0.7
368	4-Jun E	33	NW-6	1 Silcrete	Distal Fragment			Feather		12.57 N/A	N/A		I/A	
369	4-Jun E	33	NW-7	2 Silcrete	Flake	Faceted	Focal	Feather	Irregular	9.04	7.56	3.4 1	VA.	
370	4-Jun E	33	NW-7	2 Silcrete	Distal Fragment		1000	Feather		9.83 N/A	N/A		I/A	Angular fragment

4.39
41.88
13.26019
3.76
29.79
11.34447
1.49
13.55
4.081262

TOTAL ARTEFACTS

370

	370	100%
Unidentified	2	1%
Silcrete	290	78%
Quartzite	21	6%
Quartz	9	2%
Petrified Wood	7	2%
Fine Grained Sili	2	1%
Chert	35	9%
Chalcedony	4	1%
Material	No. %	

Туре	No.	%	
Core		29	8%
Distal Fragment		52	14%
Flake		97	26%
Flake Tool		7	2%
Flaked Piece		1	0%
Medial Flake		1	0%
Other	1	115	31%
Proximal Flake		67	18%
Unidentified		1	0%
	3	370	100%