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Sydney Water Modifications to the Picton Sewerage Scheme

Aboriginal Heritage Due Diligence Assessment



April 2011

**Report prepared for Parsons Brinckerhoff on behalf of
Sydney Water Corporation**



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Contents

1. Executive Summary	2
2. Introduction	3
3. Statutory Context	3
3.1. General.....	3
3.2. Due Diligence Assessment	3
3.3. Formal Aboriginal Heritage Impact Assessment (AHIA)	4
4. AHIMS Data	5
5. Landforms and Disturbance.....	5
5.1. General.....	5
5.2. Study Area A - 85 Cross Street, Tahmoor	5
5.3. Study Area B - 65 Progress Street, Tahmoor.....	6
5.4. Study Area C - 60- 61 B Marion Street, Thirlmere	7
6. Visual Inspection	8
6.1. General.....	8
6.2. Study Area A.....	8
6.3. Study Area B.....	9
6.4. Study Area C.....	9
7. Conclusions.....	9
Appendix 1: Due Diligence Code of Practice Flow Chart	10
Appendix 2: Summary Table Identifying the Due Diligence Assessment and Findings.....	12
Appendix 3: Figures	16
Appendix 4: AHIMS Documents	16

List of Tables

4.1. Details of AHIMS Sites in and Near Study Areas.....	5
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1. Executive Summary

- Archaeological and Heritage Management Solutions (AHMS) was commissioned by Parsons Brinckerhoff (PB) to undertake an Aboriginal heritage due diligence assessment of proposed changes to Sydney Water's Picton Sewerage Scheme in accordance with the NSW Department of Environment, Climate Change and Water's (DECCW) (2010) *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (hereafter 'the Code');
- It is understood that Sydney Water Corporation (Sydney Water) propose to build three sewage pumping stations and associated rising mains at three separate locations (Study Areas A, B and C) in Thirlmere and Tahmoor, NSW (Figure 3-1). The pumping stations and rising mains are to be constructed by Sydney Water as part of the proposed expanded Picton Sewerage Scheme;
- The purpose of this due diligence assessment was to determine whether or not further investigation and / or an Aboriginal Heritage Impact Assessment is warranted before the proposed works proceed;
- This assessment consisted of background desktop research and a visual inspection;
- Informal Aboriginal community consultation was undertaken with Tharawal Local Aboriginal Land Council and Cubbitch Barta Native Title Claimants as part of this assessment, and they were represented at the visual inspection;
- The assessment identified that 'further investigation and/or impact assessment' including an Aboriginal Heritage Impact Permit (AHIP) **would not** be required at Study Area A, B or C because:
 - A search of the DECCW Aboriginal Heritage Information Management System (AHIMS) database identified no registered Aboriginal heritage sites within any of the study areas;
 - No Aboriginal heritage sites were identified during visual inspections of each of the study areas;
 - No archaeological landforms of interest were identified in any of the study areas;
 - Discussions, during preliminary investigations, with two Aboriginal communities with knowledge of the area did not identify any cultural or archaeological areas of concern; and
 - Each of the study areas has been subject to land uses that have resulted in ground surface disturbance.

2. Introduction

This report presents the findings of an Aboriginal heritage due diligence assessment of the proposed locations for three sewage pumping stations and associated rising mains at Thirlmere and Tahmoor, NSW. The pumping stations and rising mains are to be constructed by Sydney Water as part of the proposed expanded Picton Sewerage Scheme. Archaeological and Heritage Management Solutions (AHMS) was commissioned by Parsons Brinckerhoff (PB), on behalf of Sydney Water, to undertake the assessment in accordance with the due diligence process described in the NSW Department of Environment, Climate Change and Water's (DECCW) (2010) *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (hereafter 'the Code') (Appendix 1). Specifically, the Code requires the study areas and proposed development to be assessed against a series of archaeological and disturbance questions. Each of these questions was explored for the study areas, and the proposed development in question, before the conclusions were reached (Appendix 2).

3. Statutory Context

3.1 General

In 2010 changes were made to the *National Parks and Wildlife Act, 1974*. The Department of Environment, Climate Change and Water (DECCW) also issued new requirements for managing Aboriginal heritage in NSW. The 2005 *Interim Community Consultation Requirements for Applicants* was replaced by *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, and the *Aboriginal Cultural Heritage and Guidelines Kit, 1997* was changed to two new guidelines - the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (Code of Practice)

3.2 Due Diligence Assessment

Under the new Code of Practice, a development proponent is required to decide whether an Aboriginal heritage investigation is needed as part of a proposal's environmental impact assessment. This is done by identifying whether the legislative context and / or the proposed activities and knowledge of existing archaeological information for a given area, trigger thresholds for further 'Due Diligence' investigation.

The Due Diligence Assessment both explores and answers a series of questions to identify whether or not a subsequent detailed assessment may be warranted. The questions used to determine Aboriginal heritage issues are prescribed in the Code of Practice. Investigations for the Due Diligence Assessment would include a review of the DECCW Aboriginal Heritage Information Management System (AHIMS data), previous reports and landscape features, and a brief visual inspection to identify any visible extant Aboriginal heritage resources and landscapes with potential to confirm objects or sites.

Aboriginal community consultation is not required for a Due Diligence Assessment Report, however, some proponents may choose to initiate it at this point in a project as part of a preliminary investigation.

A Due Diligence Assessment provides a legal defence, should Aboriginal site(s)/object(s) be damaged / destroyed during development.

3.3 Formal Aboriginal Heritage Impact Assessment (AHIA)

A Formal Aboriginal Heritage Impact Assessment results in a comprehensive assessment of the Aboriginal archaeological and cultural values of a study area in accordance with DECCW's (2010) *Code of Practice for Archaeological Investigations for Aboriginal Objects in New South Wales*.

Formal assessments include full Aboriginal community consultation in accordance with DECCW's (2010) *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, which proscribe a mandatory 10 week plus consultation period.

The formal assessment report would include a detailed consideration and summary of previous heritage assessments and regional archaeological studies, a landform analysis and a detailed archaeological field survey of the subject site. Statutory requirements and approvals sequences and management options would be documented for consideration by the client.

Identified Aboriginal heritage constraints and opportunities would be identified and mapped and the report would include an impact assessment, management strategies and recommendations to mitigate adverse impacts. If required, sub-surface test excavations could also be undertaken as part of the assessment. They do not require a permit or approval, provided that they strictly adhere to the excavation methodology defined in the Code of Practice.

4. AHIMS Data

Table 4.1 presents the findings of the DECCW Aboriginal Heritage Information Management System (AHIMS) search conducted on 2 February as part of this due diligence (Appendix 4). These sites are shown on Figure 3-1 (Appendix 3). Site 52-2-3809 is mapped as being located some 250 m west of Study Area A. The site card was requested from DECCW for the purpose of checking the accuracy of the coordinates provided, however, the DECCW database indicates that the site card for 52-2-3809 is unavailable.

Table 4.1 Details of AHIMS Sites in and Near Study Areas.

Site Number	Site Name	Description	Site Within Study Area?
52-2-3801	Macquarie Place AFT-1	Artefact	No
52-2-2078	Tahmoor 1	Art (pigmented or engraved), artefact	No
52-2-3663	Myrtle Creek PAD 1	Potential archaeological deposit (PAD)	No
52-2-3809	Greenacre Road AFT-1	Artefact	No
52-2-3802	Macquarie Place AFT-2	Artefact	No

5. Landforms and Disturbance

5.1 General

Landscape feature information was collated from aerial photographs, soil landscape maps and visual inspection. Aerial photographs, taken in 1955 and 1990 were compared with Google Earth for each study area (Figures 3-5 to 3-14, Appendix 3). Soil Landscape maps were consulted for background information, including possible previous land use, and the potential nature and depth of the soils.

5.2 Study Area A - 85 Cross Street, Tahmoor

Study Area A encompasses a swamp flat and lower to mid-slope (Figure 3-2, Appendix 3). It slopes upwards from a swampy area in the southwest to northeast at a gradient of

approximately 15 degrees. The nearest permanent water source is the Nepean River almost 1 km east of the study area.

This study area is located on either the Blacktown or Luddenham Soil Landscape¹ (the resolution of the soil map is too low to make a confident designation). Both soil landscapes sit atop Wianamatta Group Shales. The Luddenham landscape also often includes Minchinbury Sandstone.² This includes siltstone (which has been used to make stone tools, although there is no mention of rock outcrops being present in this soil landscape). Both soil landscapes have been extensively cleared of the original vegetation, which accurately describes the current appearance of Study Area A. The soils are shallow to moderately deep (<150 cm to 300 cm), and consist of acidic loams, clay loams and clays. These areas have typically been used for grazing and residential purposes in the past. Study area A currently supports a chicken farm, and what appears to be a dwelling.

The aerial photographs show that, in 1955, a dam appeared to be located in the south corner of Study Area A, which is the lowest lying point of the site (**Figure 3-5, Appendix 3**). By 1990, there is no sign of the dam (**Figure 3-6, Appendix 3**). The 1990 aerial photograph also shows that by that year several roads had been built across the study area. One road, oriented northeast to southwest had been built up through the low lying swampy area in the south of the study area. Another road, running adjacent to this bisected the middle of the study area. Neither road appeared to be sealed. The 1955 photograph of Study Area A does not show any buildings on this site. By 1990 the extant structures on the site had been built. It appears from the photographs that Study Area A had largely been cleared of vegetation by 1955, with only a strip of trees along the northwest border remaining.

5.3 Study Area B - 65 Progress Street, Tahmoor

Study Area B consists of a gentle lower slope bisected by a small (<1 m across) ephemeral creek-line (**Figure 3-3, Appendix 3**). The site slopes upwards away from the creek-line in both directions at a gradient of no more than 5 degrees. The nearest permanent water source is a tributary of the Nepean River some 770 m to the southeast.

Study Area B is located on the Blacktown Soil Landscape³ consisting of undulating plains on Wianamatta Shale Group Shale. It has been cleared of almost all the original vegetation.

¹ Hazelton, P.A. and P.J. Tille, 1990. *Soil Landscapes of the Wollongong- Port Hacking 1: 100 000 Sheet*. Soil Conservation Service of NSW, Sydney.

² Hazelton, P.A. and P.J. Tille, 1990. *Soil Landscapes of the Wollongong- Port Hacking* Soil Conservation Service of NSW, Sydney. Pp. 70-73.

³ *ibid*: pp. 27- 30.

Several older trees were identified within the study area, but they did not appear to be modified. The soils are shallow to moderately deep (<150 to 300 cm) red, yellow and brown podzolic soils (acidic loams, clay loams and clays). Rock outcrops are absent. This area is currently used for grazing cattle.

The 1955 photograph of Study Area B shows a site largely covered in trees (**Figure 3-7, Appendix 3**). No buildings are apparent. An ephemeral waterway enters the site from the south east. By 1990 Study Area B had been largely cleared (**Figure 3-8, Appendix 3**). The waterway appears to have been artificially rerouted. Several structures have been built in the vicinity of the site, with one located in the southeast. A track is apparent running east to west across the site. Google Earth shows some revegetation since 1990. The area for the proposed rising mains, along the road verge and the northernmost part of the site had been cleared of vegetation by 1990, and appears disturbed due to the building of the road, and installation of several power poles.

5.4 Study Area C - 60- 61B Marion Street, Thirlmere

Study Area C is located on a broad, flat terrace (**Figure 3-4, Appendix 3**). The area is some 400 m south of Redbank Creek, and 50 to 100 m northwest of an ephemeral creek that has been dammed. It is likely that this creek was a permanent water source before the dam was built. Although the site is currently almost completely flat, topographical maps show it as being located on an upper slope (**Figure 3-4, Appendix 3**). It is possible that its flat appearance is due to cutting and filling to flatten the site for the buildings that are apparent in the historical aerial photographs (**Figures 3-10 to 3-14, Appendix 3**).

Although Study Area C was considered initially to be a landform of interest due to its proximity to creeks, subsequent historic aerial photographs showed significant disturbance to the site. Due to extremely low visibility during the visual inspection, additional photographs were inspected for Area C. These were taken in 1966, 1969, 1972 and 1979 (**Figures 3-10 to 3-1, Appendix 3**).

The 1955 aerial photograph of Study Area C (**Figure 3-9, Appendix 3**) shows what appear to be erosion scours across a site which is extensively vegetated with trees. No buildings are visible. By 1966 (**Figure 3-10, Appendix 3**) the site is largely cleared of vegetation, and platforms of previous buildings are visible. One building still stands on the site. The 1969, 1972 and 1979 (**Figures 3-11 to 3-13, Appendix 3**) photographs show the same building, however, the building platforms are no longer visible. By 1990 the site has been completely cleared of vegetation (**Figure 3-14, Appendix 3**). The building has been removed, and houses had been built on lots to the north and west. Moreover, the topographical map shows the area as being located on an upper slope (**Figure 3-4, Appendix 3**). Therefore, it seems likely that

this area is not a natural terrace, but has been levelled by cut and fill to accommodate the buildings it has supported in the past.

Study Area C is located in The Blacktown Soil Landscape⁴ among undulating plains on Wianamatta Shale Group Shale. It has been completely cleared of the original vegetation, and now supports only weeds that thrive in clay (**Figure 3-20, Appendix 3**). The soils are typically shallow to moderately deep (<150 to 300 cm) acidic loams, clay loams and clays. No rock outcrops are present. These areas are generally used for grazing and residential purposes, although this site is currently unused as is evidenced from the extreme weed growth.

6. Visual Inspection

6.1 General

A visual inspection was undertaken on 10 February by Anna Biggs (AHMS), Glenda Chalker (Cubbitch Barta Native Title Claimants) and Alfred Fralzdeen (Tharawal Local Aboriginal Land Council). The visual inspection initially identified Area C as a 'landform of interest' requiring further consideration. Uncertainty was due to thick weed cover (**Figure 3-20, Appendix 3**). However, further historic research discounted this, as the site was heavily impacted and did not appear to be a natural landform.

6.2 Study Area A

It was not possible to enter the Ingham's property, part of which constitutes Study Area A. The property had a sign at the gate indicating that it is a quarantine area and permission must be granted to gain access to it. No phone number was provided on the sign. Sydney Water advised that the property owner had not responded to Sydney Water's notification letter regarding the project. As a consequence of the access issues, the site was inspected from the road and from a gate entry to the site.

Inspection found that tall thick grass obscured ground surface visibility which was estimated to be low to nil over the majority of the site. The site appeared to be largely disturbed due to various structures built on it (**Figure 3-15, Appendix 3**), a 50 cm deep road cut (**Figure 3-16, Appendix 3**), and several roads built up through the swampy area to the southwest of the site (**Figure 3-17, Appendix 3**). Glenda Chalker indicated that there were more sheds on the site in the past 20 years than are now extant. Several stepped areas were observed that may

⁴ *ibid*: pp. 27- 30.

have been building cuts for structures that are no longer standing. No sites or landforms of interest were identified.

6.3 Study Area B

Study Area B was being used to graze cattle, and had been moderately disturbed by trampling. There were also patches of introduced gravel apparent (**Figure 3-18, Appendix 3**). It appeared that the ephemeral creek that runs through the site had been rerouted (**Figure 3-19, Appendix 3**).

6.4 Study Area C

During the visual inspection, Study Area C appeared to be almost completely flat. A creek-line to the southeast has been dammed and was dry. It is possible that it may have been a permanent water course in the past. Due to thick vegetation cover, it was not possible to examine the ground surface in this study area during the visual inspection (**Figure 3-20, Appendix 3**). Visibility was nil, therefore no sites were identified in this study area. However, it should be noted that the weed, fleabane (*Conyza spp.*), growing within the study area thrives in clay, and is generally indicative of significant ground surface disturbance.

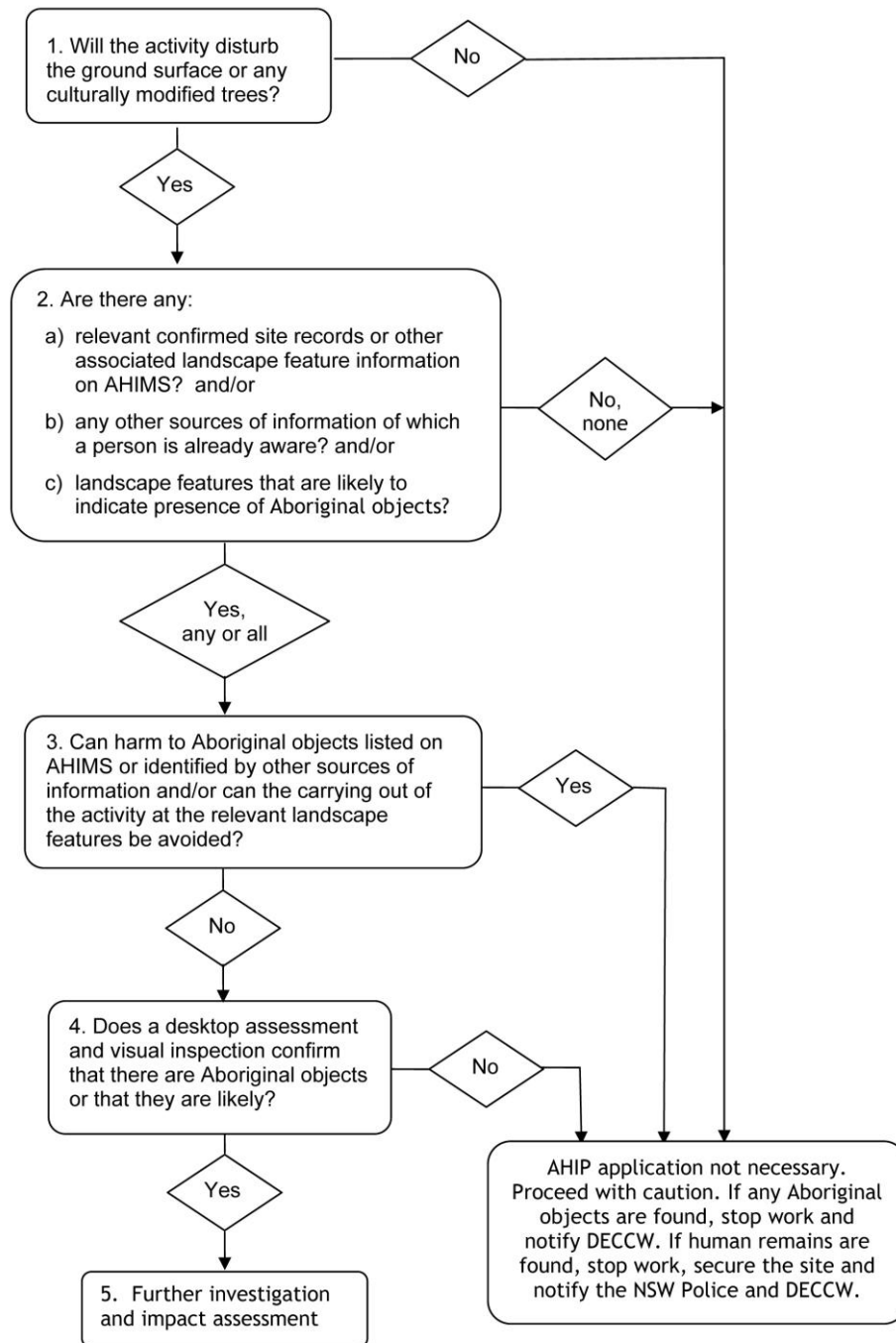
7. Conclusions

The assessment identified that ‘further investigation and/or impact assessment’ including an Aboriginal Heritage Impact Permit (AHIP) **would not** be required at any of the sites because:

- A search of the DECCW Aboriginal Heritage Information Management System (AHIMS) database identified no registered Aboriginal heritage sites within any of the study areas;
- No Aboriginal heritage sites were identified during visual inspections of each of the study areas;
- No archaeological landforms of interest were identified in any of the study areas;
- Discussions, during preliminary investigations, with two Aboriginal communities with knowledge of the area did not identify any cultural or archaeological areas of concern; and
- Each of the study areas has been subject to land uses that have resulted in ground surface disturbance.

Appendix 1: Due Diligence Code of Practice Flow Chart.

8 The generic due diligence process



(Source: DECCW, 2010)

Appendix 2: Summary Table Identifying the Due Diligence Assessment and Findings in Regards to Proposed Development at Picton

Table A4-1. Summary of the due diligence process outlined in DECCW's (2010) guidelines to determine whether or not further investigation and/or impact assessment is required.

Question #	Question	Explanation	Response for the project	Requirement	Reasons for Response in Relation to this Project
1	Will the activity disturb the ground surface or any culturally modified tree?	Will the proposed development impact the ground surface (e.g. excavation, digging, grading, etc) and/or modified trees (e.g. vegetation removal)?	Yes No	Continue to Question 2. AHIP not required. Proceed with caution. If any Aboriginal objects are found, stop work and notify DECCW. If human skeletal remains are found, stop work, secure the site and notify the NSW Police and DECCW.	It is understood that the proposed works would involve the installation of sewage pumping stations and associated rising mains in three locations. The proposed pumping stations would each have a footprint of up to 2,100m ² , and the rising mains would each require the excavation of a trench requiring an approximately 10 m wide disturbance corridor. Descriptions of pumping stations previously built for the Picton Sewerage Scheme show that the bulk of each of the proposed pumping stations is underground ⁵ .
2	Are there any: a) relevant confirmed site records or other associated landscape feature information on AHIMS that relate to the study area? and/or b) other sources of information of which a person is already aware? and/or	This question requires a search of DECCW's AHIMS database, which lists known Aboriginal objects/sites/places and landscape features of interest. This question requires a review of previous reports or other sources of information for the study area to identify any previous areas of archaeological or cultural interest. Informal Aboriginal consultation may be considered to address this question.	Yes No Yes No	Continue to Question 3. AHIP not required. Proceed with caution. If any Aboriginal objects are found, stop work and notify DECCW. If human skeletal remains are found, stop work, secure the site and notify the NSW Police and DECCW. Continue to Question 3. AHIP not required. Proceed with caution. If any Aboriginal objects are found, stop work and notify DECCW. If human skeletal remains are found, stop work, secure the site and notify the NSW Police and DECCW.	A search of the AHIMS database on 2 February 2011 identified five sites within several kilometres of the three study areas (A, B and C) (Appendix 3-1, Table 3-1 and Figure 3-1). A 50 m buffer zone surrounding the site was also searched. Of those, only one- AHIMS # 52-2-3809- is located within less than 1km of any of any of the study areas. Site # 52-2-3809 is an isolated artefact that was located some 250 m west of Study Area A. It should be noted that all or parts of the three study areas may be encompassed by a Native Title determination (NC97/7) by the Gundungurra Tribal Council Aboriginal Corporation. This determination applies only to Crown Land and State owned land; land in private tenure is not affected. If any of the study areas are located within Crown Land, there may be implications under the <i>Native Title Act 1993</i> . If Sydney Water believe any of the study areas are encompassing Crown Land, then a formal search request should be put to the National Native Title Tribunal, and the Office of the Registrar, <i>Aboriginal Land Rights Act, 1983</i> to identify the Aboriginal parties that require consultation and/or negotiation. Little Aboriginal archaeological research has been undertaken within the Picton, Tahmoor and Thirlmere region. An archaeological survey of the region was undertaken in 1995 by Godden Mackay ⁶ in the early stages of the planning for the Picton Sewerage Scheme. The assessment identified three PADs near major waterways in the area, and three Aboriginal heritage sites, but none within the current study areas. The report notes that most nearby sites are rock shelters with art. This site type is unlikely to be identified within any of the current study areas, because the areas of proposed works do not appear to contain any rock outcrops. As part of the preliminary investigation, informal Aboriginal community consultation was undertaken with the Tharawal Local Aboriginal Land Council

⁵ Picton Regional Sewerage Scheme SPS 920 and Rising Main: Technical Data: Revision 1

⁶ Godden Mackay, December 1995. Picton Regional Sewerage Scheme. Archaeological and Heritage Assessment. Report prepared for Sydney Water and the Department of Public Works and Services.

Question #	Question	Explanation	Response for the project	Requirement	Reasons for Response in Relation to this Project
	c) landscape features that are likely to indicate the presence of Aboriginal objects?	<p>The Due Diligence guidelines identify a number of landscape features, which are of archaeological interest and require further consideration. Specifically:</p> <ul style="list-style-type: none"> • within 200m of waters, or • located within a sand dune system, or • located on a ridge top, ridge line or headland, or • located within 200m below or above a cliff face, or • within 20m of or in a cave, rock shelter, or a cave mouth • and is on land that is not disturbed land. <p>Further definitions on these landscape features are provided in the guidelines.</p>	<p>Yes</p> <p>No</p>	<p>Continue to Question 3.</p> <p>AHIP not required. Proceed with caution. If any Aboriginal objects are found, stop work and notify DECCW. If human skeletal remains are found, stop work, secure the site and notify the NSW Police and DECCW.</p>	<p>(Alfred Frazldeen) and Cubbitch Barta Native Title Claimants (Glenda Chalker). Both representatives visited the study areas, and neither identified any cultural or archaeological sites in the vicinity.</p> <p>Information provided by Glenda Chalker, who has surveyed the area before, indicates that shed-like structures were located on the north east end of Study Area A over the last 20 years. These are no longer present. This information contributes to our understanding of previous land use and disturbance.</p> <p>Landscape feature information was collated from aerial photographs, soil landscape maps, visual inspections and oral history (Appendices 3-2 and 3-3).</p> <p>Study Area A is located on a lower to mid-slope and swamp flat, some 1 km west of the Nepean River (Appendix 3-2, Figure 3-2 and Appendix 3-3, Figures 3-15 to 3-17). The site has been disturbed by the construction and demolition of numerous buildings, an unsealed road, a dam and a track. The soil landscape map indicates that the original vegetation has been extensively cleared, and rock outcrops are not present in this soil landscape. The soil consists of loams and clays.</p> <p>Study Area B is on an undulating plain (Appendix 3-1, Figure 3-3 and Appendix 3-3, Figure 3-18 to 3-19). It is bisected by a small (<1 m wide) ephemeral creek, running north to south. The site slopes upwards away from the creek, in both directions, at a gradient of no more than 5 degrees. The closest permanent water source is a tributary of the Nepean River, some 770 m to the southeast. The site is currently used for grazing cattle and has been cleared of almost all the original vegetation, and heavily trampled. It also shows signs of disturbance in the form of introduced gravel, and uneven ground. The soils are loams and clay loams.</p> <p>Study Area C is located on a terrace near an ephemeral creek, which has been dammed (Appendix 3-2, Figure 3-4 and Appendix 3-3, Figure 3-20). The creek may have been a permanent water source before it was dammed. The nearest permanent water source is Redbank Creek, some 400 m to the north. The soil landscape map indicates that the soils are loams and clay loams. The original vegetation has been completely cleared, and weed growth on this site limited the ground surface visibility to nil during the visual inspection. Further aerial photographs were examined, and these show extensive disturbance to the site in the past. It appears that the original landform was not a terrace, but an upper slope.</p>
3	Can harm to Aboriginal objects listed on AHMS or identified by other sources of information and/or can the carrying	This question is a summary of Questions 1 and 2 above and is only required if undisturbed and/or Aboriginal objects	Yes	AHIP not required. Proceed with caution. If any Aboriginal objects are found, stop work and notify DECCW. If human skeletal remains are found, stop work, secure the site and notify the	In summary, the above considerations reveal no Aboriginal objects or areas of interest within the study areas. However, a site visit was conducted to further confirm the low likelihood of Aboriginal objects and sites being located within the study areas.

Question #	Question	Explanation	Response for the project	Requirement	Reasons for Response in Relation to this Project
	out of the activity at the relevant landscape features be avoided?	have been identified. This question requires consideration of the project's ability to avoid these areas.	No	NSW Police and DECCW. Continue to Question 4.	
4	Does a desktop assessment and visual inspection confirm that there are Aboriginal objects or that they are likely?	<p>This question is only required if undisturbed and/or Aboriginal objects</p> <p>This question is a collation of Questions 1 - 3 and requires consideration of the whole study area, not just areas of interest (if present). A visual inspection is required by a person with expertise in locating and identifying Aboriginal objects. Subsequent considerations by a qualified representative is also required.</p> <p>When referring to the Code, this question can be divided into two main parts:</p> <ol style="list-style-type: none"> 1. Does the study area retain Aboriginal objects? 2. Does the proposed activity impact the Aboriginal objects identified, or are the Aboriginal objects with the proposed activity area? 	<p>Yes</p> <p>No</p>	<p>Continue to Question 5.</p> <p>AHIP not required. Proceed with caution. If any Aboriginal objects are found, stop work and notify DECCW. If human skeletal remains are found, stop work, secure the site and notify the NSW Police and DECCW.</p>	<p>A visual inspection was undertaken on 10 February 2011 (Appendix 3-3). This confirmed that Study Areas A and B were moderately to highly disturbed, and not located on landforms of interest (Appendix 3-2). Due to weed growth, ground surface visibility was nil in Study Area C, which appeared to be a crest above a creek-line. Further historic aerial photographs, however confirmed that this area has also been highly disturbed, and it is likely that it is not a natural crest, but an upper slope that has been cut and filled for building platforms.</p> <p>In summary, there is a low likelihood of in situ Aboriginal objects or sites being located within the study areas.</p>
5	Further investigation and impact assessment				

Appendix 3: Figures





Figure 3-2. Topographic map showing landform in Area A (outlined in yellow).



Figure 3-3. Topographic map showing landform in Area B (outlined in yellow).

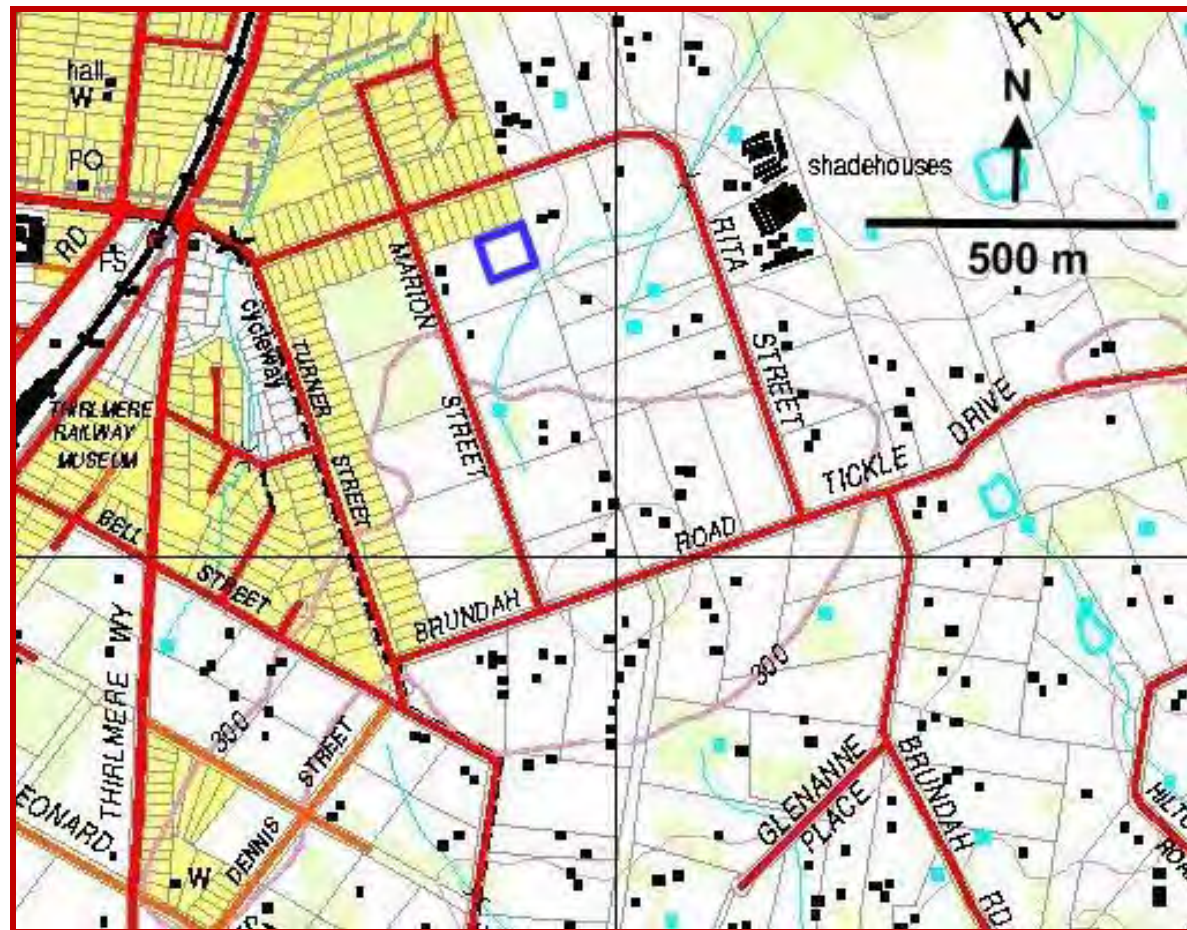


Figure 3-4. Topographic map showing landform in Area C (outlined in purple). Contours show 10 m intervals.



Figure 3-5. Study Area A in 1955 (outlined in red).⁷

⁷ Department of Lands, 1955. Warragamba Catchment. Run 10. NSW 581-5032.



Figure 3-6. Study Area A in 1990 (outlined in red).⁸

⁸ Department of Lands, 1990. Wollongong. Run 11. NSW3751.



Figure 3-7. Study Area B in 1955 (outlined in red).⁹

⁹ *Op. cit.* Department of Lands, 1955.



Figure 3-8. Study Area B in 1990 (outlined in red).¹⁰

¹⁰ Department of Lands, 1990. Wollongong. Run 11. NSW 3751/ 210.



Figure 3-9. Study Area C (outlined in red) in 1955 (outlined in red).¹¹

¹¹ *Op. cit.* Department of Lands, 1955.

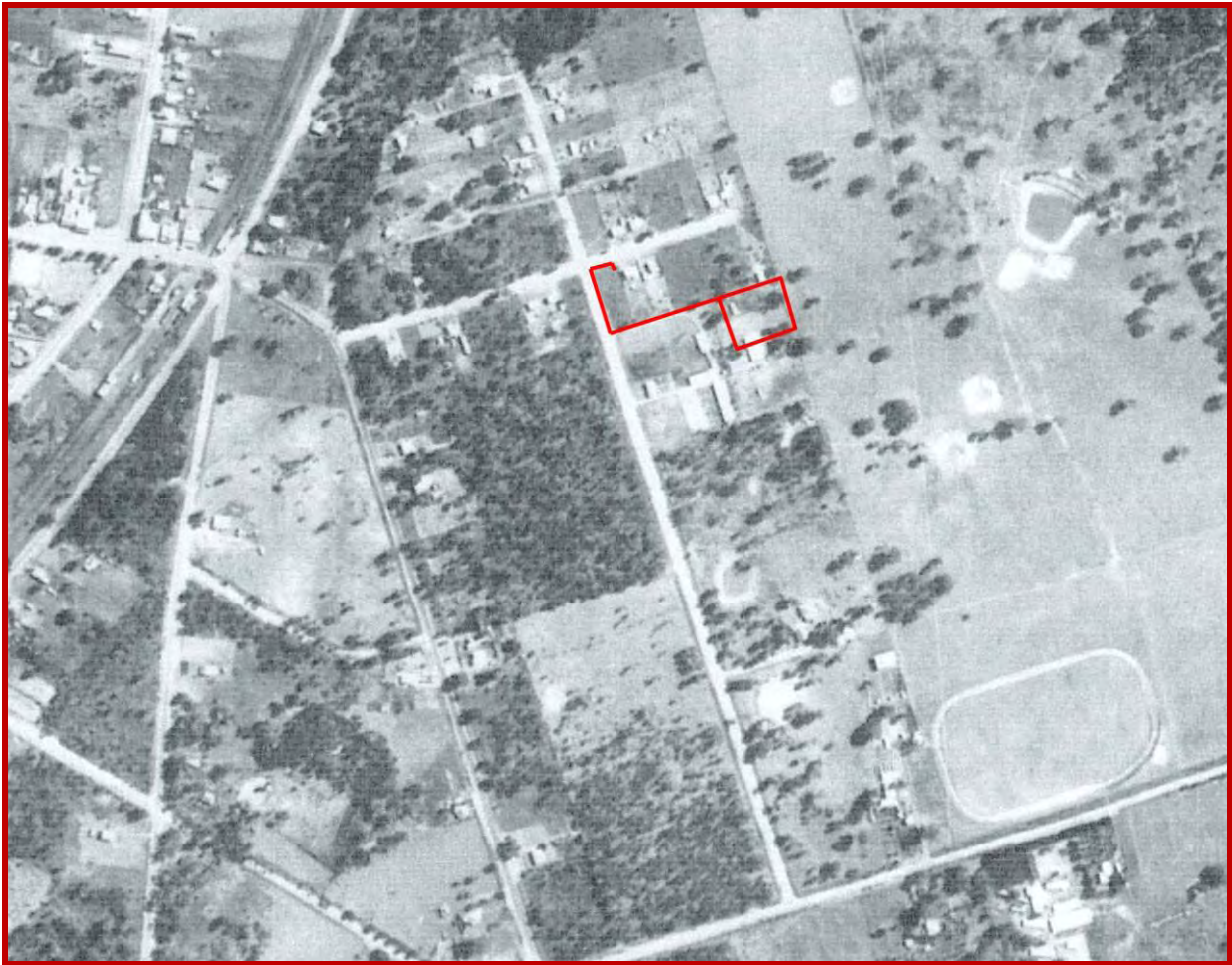


Figure 3-10. Study Area C (outlined in red) in 1966 (outlined in red).¹²

¹² Department of Lands, 1966. Wollongong. Run 5C. NSW 1440/ 5029.



Figure 3-11. Study Area C (outlined in red) in 1969 (outlined in red).¹³

¹³ Department of Lands, 1969. Wollongong. Run 4C. NSW 1623/ 5142.



Figure 3-12. Study Area C (outlined in red) in 1972 (outlined in red).¹⁴

¹⁴ Department of Lands, 1972. Wollongong. Run 3. NSW 2018/ 5112.



Figure 3-13. Study Area C (outlined in red) in 1979 (outlined in red).¹⁵

¹⁵ Department of Lands, 1979. Wollongong. Run 4. NSW 2783/ 129.



Figure 3-14. Study Area C (outlined in red) in 1990(outlined in red).¹⁶

¹⁶ Department of Lands. Wollongong. Run 10. NSW3754.



Figure 3-15. Area A from Cross Street, facing northeast. Note building in mid-ground.



Figure 3-16. Road cut in Area A, facing northeast. Depth is 50 cm.



Figure 3-17. Road across swamp in Area A (mid-ground), facing southeast.



Figure 3-18. Introduced gravel in Area B, facing west.



Figure 3-19. Creekline across Area B, facing north.



Figure 3-20. Area C facing east. Note the weed growth across the whole site.

Appendix 4: AHIMS Documents

Archaeological & Heritage Management Solutions Pty Ltd (AH)
349 Annandale Street
Annandale New South Wales 2038
Attention: Anna Biggs

Date: 02 February 2011

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 276580 - 279617, Northings : 6209879 - 6212693 with a Buffer of 50 meters. Additional Info : conducted by Anna Biggs on 02 February 2011

A search of the DECCW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

5	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

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 \(http://www.nsw.gov.au/gazette\)](http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from DECCW's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- AHIMS records information about Aboriginal sites that have been provided to DECCW 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.
- This search can form part of your due diligence and remains valid for 12 months.



<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
52-2-3801	Macquarie Place AFT-1	GDA	56	277182	6211066	Open site	Artefact		
	<u>Contact</u>	<u>Recorders</u>		Mrs.Georgia Roberts				<u>Permits</u>	
52-2-2078	Tahmoor 1	AGD	56	278630	6211550	Closed site	Art (Pigment or Engraved),Artefact	Shelter with Art,Shelter with Deposit	
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>	
52-2-3663	Myrtle Creek PAD 1	AGD	56	278559	6212032	Open site	Potential Archaeological Deposit (PAD)		
	<u>Contact</u>	<u>Recorders</u>		Ms.Renee Regal				<u>Permits</u>	
52-2-3809	Greenacre Road AFT-1	GDA	56	279024	6210452	Open site	Artefact		
	<u>Contact</u>	<u>Recorders</u>		Mrs.Georgia Roberts				<u>Permits</u>	
52-2-3802	Macquarie Place AFT-2	GDA	56	277200	6211179	Open site	Artefact		
	<u>Contact</u>	<u>Recorders</u>		Mrs.Georgia Roberts				<u>Permits</u>	

Report generated by AHIMS Web Service on 2/02/2011 for Anna Biggs for Datum :GDA, Zone : 56, Eastings : 276580 - 279617, Northings : 6209879 - 6212693 with a Buffer of 50 meters. Additional Info :

To inform a due diligence assessment and report for client.. Number of Aboriginal sites and Aboriginal objects found is 5

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