Camden Council
Business Paper

Ordinary Council Meeting
11 August 2015

ORD01 Proposed amendments to *Camden LEP 2010* (No.32) and *Camden DCP 2011* - Lot 24, DP 1086823 Crase Place, Grasmere

SPECIALIST REPORTS TO SUPPORT PLANNING PROPOSAL

APPENDIX A

Proposed Zoning and Minimum Lot Size provisions

LEGEND

W	4000m²
Z2	min 4ha

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MAP 1:1000

issue	issue date	issue description	des	dwn	app
A	09.01.14	for information	VM	EM	VM

scale AS SHOWN AT A1	project YEWENS ESTATE GRASMERE	dwg title ZONING MAP- PROJECT SITE	
date 09.01.13	client COWBRIDGE HOLDINGS PTY LTD	dwg no. PM03/03	project no. 12134

LEGEND

R5 — R5 LARGE LOT RESIDENTIAL

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MAP 1:1000

A	14.11.13	for information		VM	EM	VM
issue	issue date	issue description		des	dwn	app

scale: AS SHOWN AT A1
project: YEWENS ESTATE GRASMERE
dwg title: ZONING MAP - PROJECT SITE
date: 14.11.13
client: COWBRIDGE HOLDINGS PTY LTD
dwg no. PM03/03
project no. 12134

APPENDIX B

Correspondence from Sydney Water

AERIAL
NTS

LEGEND

- SITE BOUNDARY
- FUTURE NATIVE AROMATIC BUFFER
- RANDOM INDIVIDUAL TREES
- DISTANCE FROM SEWERAGE PLANT BOUNDARY
- PRIVATE OPEN SPACE
- INDICATIVE HOUSE LOCATIONS* *HOUSES ARE GRAPHIC ONLY AND DO NOT RELATE TO ACTUAL HOUSE PLAN

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issue	issue date	issue description	des	dwn	app
A	25.03.13	client issue	VM	EM	VM

scale	project	dwg title	
AS SHOWN AT A1	YEWENS ESTATE GRASMERE	AERIAL PROJECT SITE	
date	client	dwg	project no.
25.03.13	COWBRIDGE HOLDINGS PTY LTD	LC01.03	12134

APPENDIX C

Interaction with Sydney Water

APPENDIX C

Summary Timeline of Events

Date	Correspondence type	From	To	Conversation Content	Outcome	Actioned
1 Aug 2011	E-mail	Clive Hughes	Camden Council	Seeking relaxation of Council's odour limit - noting that it was imposed by Council and not Sydney Water which would allow a more logical location of the building envelope rather than its current location which is limited in opportunity.	Chris Lalor of Council waiting for Sydney Water representative to return	
8 Aug 2011	E-mail		Sydney Water Richard Schuil	Making enquiries regarding the blanket exclusion zone of 400m around STP with the emphasis on actual wind patterns.		
11 Aug 2011	Phone and confirming e-mail		Sydney Water Rodney MacKenzie	Confirming earlier conversation that the site is due west of the STP and that the prevailing winds are south to north and therefor the site is not in the prevalent direction of winds arising from the STP …..may result in a reduction of the odour zone	Confirmed receipt of e-mail	
21 Nov 2011	E-mail		Sydney Water Cassandra Loughlin	Following up on the relaxation of the odour exclusion zone. Advice offered that : • Upgrades to the STP occurred in 2009/10 and further upgrades are scheduled for 2012. • REF for the 2012 upgrade shows that the plume does not touch the subject site. • From 1999 to 2010 5 odour complaints were received and these were during periods when major upgrade works were proposed (Pg 53 of REF West Camden Water Recycling Plant Biosolids Treatment Upgrade and Amplification). • If a house were built within the (currently) identified building envelope, then this will impact on the view corridor to the nature reserve for all three property owners. • Any dwelling should be closer to the ridgeline on the south eastern border next to the now defunct Old Oaks Road.	24 Nov 2011 (CL) Sydney Water - the current approach is to use a combination of odour mitigation techniques and compatible landuses. SW will meet with Council to discuss SW approach to development proposals so that a consistent response is developed. When meeting is held with Council then the proposal will be discussed.	Meeting held with CL on 12th December 2011
23 Jan 2012	E-mail	Cassandra Loughlin Sydney Water	Clive Hughes	Confirms the reviewed approach of managing impact of odour emissions ie mitigation works associated with compatible landuses. This approach is consistent with OEH guidelines and DPI. OEH – Assessment and management of odour from stationary sources in NSW: technical framework: http:/www.environment.nsw.gov.au/air/odour.htm. DPI draft NSW Best Practice Odour Guidelines. Subject to further assessment, the building zone could be relocated to the suggested site however there is unlikely to be any support, at this stage, for rezoning or subdivision of the property.		
4 June 2012	E-mail	Clive Hughes	Sydney Water Cassandra Loughlin	Seeking a meeting with CL and Rod Mackenzie with regard to an alternate building envelope as it provides best views and privacy from other houses on the southern boundary. Rational is based on the e-mail of 21 November 2011. Opportunity to actively monitor odour risk would be to plant a 25m to 30m corridor of mixed aromatic natives providing a wind (odour) break and a visual separation between the source and the site.	Cassandra has left the section that works on developments near treatment plants and Rod has left Sydney Water. The matter has been forwarded to David Demer (on leave). The matter has been referred to Engineering and Environmental Services Group to provide advice/comments	
???	E-mail	Sydney Water David Demer	Clive Hughes	The required buffer from the STP is based on the 2 Odour Unit (2OU) contour and Sydney Water will only support compatible land uses such as industrial or farming. The position of the proposed building appears to be outside the 2OU contour boundary. If an application is lodged with Camden Council for development, then Sydney Water would make comment then.		
20 Aug 2012	E-mail	Sydney Water David Demer	Clive Hughes	Selected advice from an internal board paper.		

				Confirms that a strategy is being implemented to manage odour emissions from wastewater treatment plants through: **1. Odour mitigation works.** Sydney Water is proactively managing odour emissions at our treatment plants by: ▪ implementing an Odour Management Strategy to address nuisance odours. ▪ reviewing actual and potential odour impacts from treatment plants on an ongoing basis. ▪ planning and implementing odour mitigation works to meet staging of future residential development. Sydney Water has a program of odour mitigation works to address the current impact of odour at our treatment plants. However, any odour mitigation works to accommodate urban growth will be funded by the benefiting developers. **2. Compatible land uses.** To complement the odour mitigation works, Sydney Water will work with planning authorities to negotiate compatible land uses on land around treatment plants. This approach: • minimises costs to the community while accommodating population growth. • allows land to be used to its highest potential. Sydney Water's approach to managing odour emissions from wastewater treatment plants is consistent with the draft *NSW Best Practice Odour Guidelines* and the *Technical Framework: Assessment and Management of Odour from Stationary Sources*. The Framework is attached and the link to the Guideline is at: http://www.planning.nsw.gov.au/LinkClick.aspx?fileticket=a7HL_ZuG64o%3D&tabid=299&language=en-US		
21st December 2013	Letter	Sydney Water	Clive Hughes	Acknowledges there is a revised odour contour however future upgrades the plant in the future, and the land use being proposed, may lead to future conflicts and therefore Sydney Water does not support subdivision of the site.		
24th January 2013	Meeting			Outcome of the meeting with Sydney Water representatives (David Demer. Louisa Vorreiter and Adrian Miller) is that Siteplus will prepare alternate plans which show the housing in an alternative location. It was noted that odour flows downhill and tends to 'pool'. When alternative ideas are prepared, another meeting will be sought with Sydney Water to show an alternate option.		
21st May 2013	Letter	Sydney Water	Clive Hughes	Advice provided by Sydney Water that it is satisfied that development can occur within the 400m contour and outside the 2OU contour on the subject property on the basis that the dwellings are located no closer than 300m to the treatment plant. A copy of the plans and the advice is located in Appendix B of this document.		

APPENDIX D

Indicative Subdivision Layout

AERIAL
NTS

LEGEND

300M WRP BUFFER ZONE

MINIMUM LOT SIZES

W 4000m²

Z2 4ha

REVISIONS

issue	issue date	issue description	des	dwn	app
G	08.01.14	Plan Adjustment as per Council's request- Lot Sizes	VM	EM	VM
F	26.11.13	Plan Adjustment	VM	EM	VM
E	30.10.13	Readjusted boundary layout	VM	EM	VM
D	10.10.13	Readjustment to indicative lanscape and dwelling placement	VM	EM	VM
C	20.09.13	Inclusion of bushfire attack level info	VM	EM	VM
B	12.02.13	Adjusted plan to Sydney Water	VM	EM	VM
A	17.09.13	Plan Developed for Sydney Water	VM	EM	VM

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scale	project	dwg title	
AS SHOWN AT A1	YEWENS ESTATE GRASMERE	MINIMUM LOT SIZE PLAN	
date	client	dwg no.	project no.
14.09.12	COWBRIDGE HOLDINGS PTY LTD	PM05/06	12134

NOTE:

* THIS PLAN HAS BEEN PREPARED FROM A COMBINATION OF FIELD SURVEY AND EXISTING RECORDS
* THE TITLE BOUNDARIES SHOWN HEREIN HAVE BEEN DETERMINED BY PLAN DIMENSIONS ONLY AND HAVE NOT BEEN VERIFIED BY FIELD MEASUREMENTS
* PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR POSSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATION OF ALL SERVICES
* CONTOURS HAVE BEEN INTERPOLATED FROM SPOT HEIGHTS TAKEN AND ARE APPROXIMATE ONLY
* THIS NOTE IS AN INTEGRAL PART OF THIS PLAN

NOTE: SURVEY DATA USED IS AS SUPPLIED BY MR CLIVE HUGHES

CONTACT DIAL BEFORE YOU DIG PH: 1100, PRIOR TO ANY EXCAVATION

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Ph: (02) 4655 9485 Fax: (02) 4655 9487
Email: admin@apexsurveying.com.au
www.apexsurveying.com.au

DATUM AHD	SCALE: N.T.S	DRAWN DF	CONCEPT PLAN OF PROPOSED BUILDING ENVELOPE FOR DISCUSSION ONLY
ORIGIN OF LEVELS SUPPLIED PLAN	SUBURB: GRASMERE	SURVEYED	
CONTOUR INTERVAL	L.G.A.: CAMDEN	DATE: 28/05/2012	SURVEYORS REFERENCE : 12106
SHEET NO. 1 OF 1 SHEETS			

AERIAL
NTS

LEGEND

300M WRP BUFFER ZONE

LAND MEETING BAL12.5 CONSTRUCTION & APZ REQUIREMENT

REVISIONS

issue	issue date	issue description	des	dwn	app
G	08.01.14	Plan Adjustment as per Council's request- Lot Sizes	VM	EM	VM
F	26.11.13	Plan Adjustment	VM	EM	VM
E	30.10.13	Readjusted boundary layout	VM	EM	VM
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C	20.09.13	Inclusion of bushfire attack level info	VM	EM	VM
B	12.02.13	Adjusted plan to Sydney Water	VM	EM	VM
A	17.09.13	Plan Developed for Sydney Water	VM	EM	VM

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planning engineering landscape design management

scale	project	dwg title	
AS SHOWN AT A1	YEWENS ESTATE GRASMERE	AERIAL PROJECT SITE	
date	client	dwg no.	project no.
14.09.12	COWBRIDGE HOLDINGS PTY LTD	PM05/06	12134

APPENDIX E

Bushfire Assessment

BUSHFIRE HAZARD ASSESSMENT FOR PROPOSED REZONING OF 10 CRASE PLACE, GRASMERE

LOT 24 DP: 1086823

LGA: CAMDEN

OWNER: CLIVE HUGHES

PROJECT MANAGER: SITE PLUS PTY LTD

29 October 2013

Our ref: 995bf

Harris environmental consulting

Phone: (02) 4236 0954 Fax: (02) 4236 1410 Mobile: 0425 335 245 ABN: 6156 3609 153

Email: sean@harrisenvironmental.com.au Postal Address: PO Box 13, Wallaby Hill Rd, Jamberoo NSW 2533

FPA AUSTRALIA

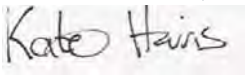
Certified Business
Bushfire Planning
& Design

HARRIS ENVIRONMENTAL CONSULTING:

FPA Business Certification number: BPD-BD-26927

ABN 6156 3609 153

ASSESSOR & QUALIFICATIONS



Katherine Harris
BPAD – D Certified Practitioner: BPAD-D BPD-PD-26927
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Bsc App Sc, Agriculture (HAC)

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SUMMARY

This Bushfire Hazard Assessment was prepared for the proposed rezoning of Lot 24 in DP 1086823, which is located on bushfire prone land.

This assessment outlines how compliance with Planning for Bushfire Protection (2006) can be achieved to assist in further subdivision design. It identifies the land which meets BAL 12.5 construction and APZ requirements, the key constraints and the general bushfire protection measures required.

Site specific bushfire protection measures are not provided at this stage although this assessment can be used to inform subsequent stages in the development assessment process.

1. INTRODUCTION

This Bushfire Assessment Report has been prepared by Harris Environmental Consulting for the proposed rezoning of Lot 24 DP 1086823, at 10 Crase Pl, Grasmere. This assessment is based on a site assessment carried out on the 23 September 2013.

This assessment has been prepared with all reasonable skill, care and diligence. The writers of this report recognizes the fact that no property and lives can be guaranteed to survive a bushfire attack and this proposal examines ways the risk can be reduced through consideration of the following legislation:

1. *Rural Fires Act 1997*;
2. *Environmental Planning and Assessment Act 1997;*
3. Building Code of Australia;
4. NSW Rural Fires Services, *Planning for Bushfire Protection*,2006;
5. Australian Standard AS3959-2009 Construction of buildings in bushfire-prone areas.

Harris Environmental Consulting accepts no responsibility to third parties who use this report or part thereof. This assessment was undertaken using the terms of contract between Site Plus Pty Ltd and Harris Environmental Consulting. The authors allow the intellectual property within the assessment to be used, with the date of assessment acknowledged, and copyright will not be breached.

2. ASSESSMENT CRITERIA

This assessment addresses the bushfire protection requirements of Section 117 Direction 4.4 of *Environmental Planning and Assessment Act 1979*. It applies the Planning Principles for Rezoning to Residential Land in Bushfire Prone Areas from *Planning for Bushfire Protection* 2006 (PBP).

The Planning Principles for Rezoning to Residential Land in Bushfire Prone Areas are applied to the proposed development. These planning principles are listed on page 4 of the *Planning for Bushfire Protection Guidelines*, (NSW Rural Fire Service, 2006). This includes:

a) **Access**; does the site have provision for a perimeter road with two way access which delineates the extent of the intended development?

b) **Asset Protection Zones**; does the development have provision at the urban bushland interface for the establishment of adequate asset protection zones for future housing?

c) **Minimum lot depths**; what will be the minimum residential lot depth to accommodate asset protection zones for lots on perimeter roads?

d) **Perimeter exposed to hazard**; does the development minimise the area of developed land interfacing the hazard?

e) **Inappropriate development in hazardous areas**; are there any site specific controls needed to address development or placement of combustible materials?

f) **Inappropriate placement of combustible materials in asset protection zones**; are there any site specific controls needed to prevent the inappropriate placement of combustible materials in asset protection zones?

3. SITE LOCATION AND PROPOSAL

3.1 Location

The general location is shown on Figure 1 and a broad scale aerial photograph is shown in Figure 2. Figure 3 provides a street map.

The subject site (Lot 24 DP 1086823) is located approximately 2 kilometres west of Camden and is accessed off Harben Vale Circuit. The whole south eastern boundary adjoins The Old Oaks Road. The north eastern boundary adjoins Werombi Road. The Camden Sewerage Treatment Plant is located on the other side of Werombi Road directly north east of the site. The northern boundary adjoins a series of water storage dams.

Figure 1 Location of property

Figure 2 Broadscale view of property location

Figure 3 Street map of subject site

3.2 Proposal

Lot 24, DP 1086823 is currently zoned RU1 Rural Landscape under the current Camden Local Environment Plan, and is proposed to be rezoned to R5 - Large Lot Residential. Indicative house lot layouts are identified in Figure 4 below to show how the proposal can comply with bushfire protection requirements. Final details of landscaping and boundaries will be determined when a DA is lodged.

Figure 4 Proposal

4. SITE DESCRIPTION

4.1 Mapped Bushfire Prone Land

The Camden Council map of Bushfire Prone Land (Figure 5) shows a small fraction of the property is mapped as Bushfire Prone Land. The mapped area is in the north east corner. However the site is located on grassland and the adjacent nature strip would be considered Bushfire Prone regardless of whether or not it has been mapped.

Figure 5 Bushfire Prone Land

4.2 Terrain

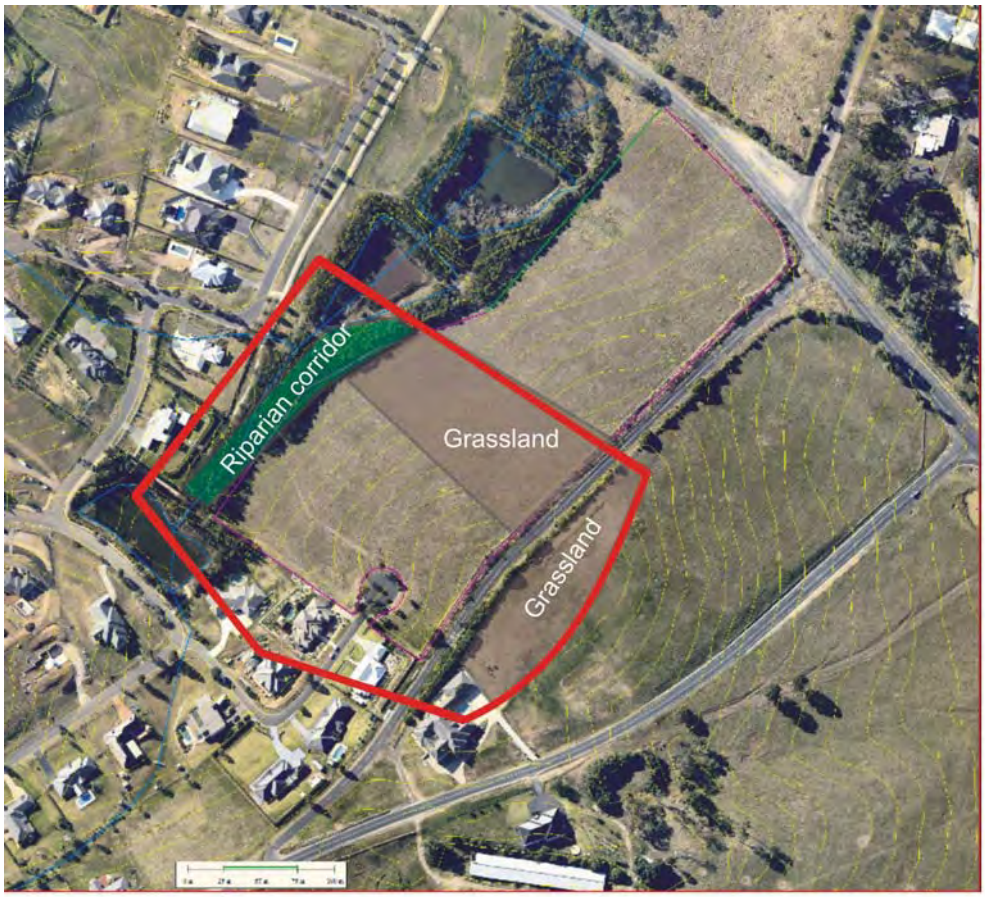
The subject lot faces the north west. The landform is undulating and slopes gently down towards the drainage line and three large water supply dams on the north westerly boundary. The house sites will be located on land close to the cul-de-sac on the south western side of the subject lot. See Figure 4.

4.3 Vegetation

Figure 6 shows the bushfire prone land within 100m of the area identified suitable for dwellings. The dominant vegetation formation is characterised as grassland. The only trees near to the site are located within the nature strip where the creek and water supply dams are, as shown in Photo 1. There is also a bike track within this riparian corridor. For bushfire assessment purposes, the trees in the riparian corridor are considered "Rainforest", as the total width measures approximately 40m and the PBP 2006 page 52, allows "*Riparian areas are those areas of vegetation which are no greater than 20m in width and are found on either bank of a river, creek or stream identified on a bush fire prone land map and treated the same as rainforest*". These trees are still juvenile as shown in Photo 2.

Photo 1 View of grassland and riparian corridor on north western elevation

Figure 6 Vegetation Formations within 100m of land identified as suitable for house sites



approximately 100 m from land identified as suitable for house sites

Grassland

Tree's planted along riparian corridor with bike track, 40m in width

Lot Boundary

Creek line

2m contour

Photo 2 View of tree planting in riparian corridor and bike track

5. BUSHFIRE HAZARD ASSESSMENT

5.1 Methodology

A number of related factors determine the nature of the bushfire hazard. These are slope, vegetation type, distance from hazard, access and the regions fire rating index. The Fire Rating Index is determined by the NSW RFS for fire areas and council areas across NSW and assumed for a 1 in 50 year event (Table A2.3, RFS 2006). Camden LGA has an **FDI rating of 100** for a 1 in 50 year event.

Each of these factors has been considered in this assessment.

The assessment of the slopes and vegetation was carried out in accordance with the RFS Guidelines Planning for Bushfire Protection (2006), Appendix II and AS 3959:2009, Section 2.

5.2 Slope Assessment

The effective "slope" is the slope under the vegetation posing the bushfire threat. As fires travel slower down a hill, AS3959:2009 classifies all upslope as "flat".

For this assessment, the slopes that would most significantly influence fire behavior were determined over a distance of 100m from the proposed development. This assessment was undertaken using a digital contour map with 2 metre contour intervals and assessed in the field, using a hand held clinometer.

Table 1 summarises the identified effective slope in accordance with the PBP (2006) to a distance of 100m.

Table 1 Slope and direction

NORTH	SOUTH	EAST	WEST
Downslope 5-10 degrees	Upslope/Level	Upslope	Downslope 5-10 degrees

The subject lot is located on an undulating side slope with a north westerly orientation. This assessment found that the slope influencing bushfire behavior on the north west falls into the PBP (2006) category of "downslope 5-10 degrees". Photo 3 shows the downslope looking directly west from proposed indicative dwelling footprints. The east and south elevations falls into the PBP (2006) category of level/upslope. Photo 4 shows the upslope looking east from indicative dwelling footprints.

Photo 3 View looking west

Photo 4 View looking east

5.3 Defendable space/Asset Protection Zone

The Asset Protection Zone (APZ) provides a defendable space between the asset and the hazard. This ensures minimal separation for safe fire-fighting, reduced radiant heat, reduced embers and smoke.

The primary purpose of the APZ assessment is to determine a compliant (APZ required by Acceptable Solutions within Table A2.4 AS 3959-2009) location for building envelopes.

The building construction standard is based on the determination of the Bushfire Attack Level (BAL) in accordance with AS 3959:2009 'Construction of Buildings in Bushfire Prone Areas'. The BAL is based on known vegetation type (AS3959 – vegetation), effective slope and managed separation distance between the development and the bushfire hazard.

It is assumed that the highest bushfire attack level construction standard will be BAL 12.5. The following describes the BAL setbacks for each elevation:

North West: the BAL 12.5 setback is located 36m from the downslope 5-10 degree "rainforest";

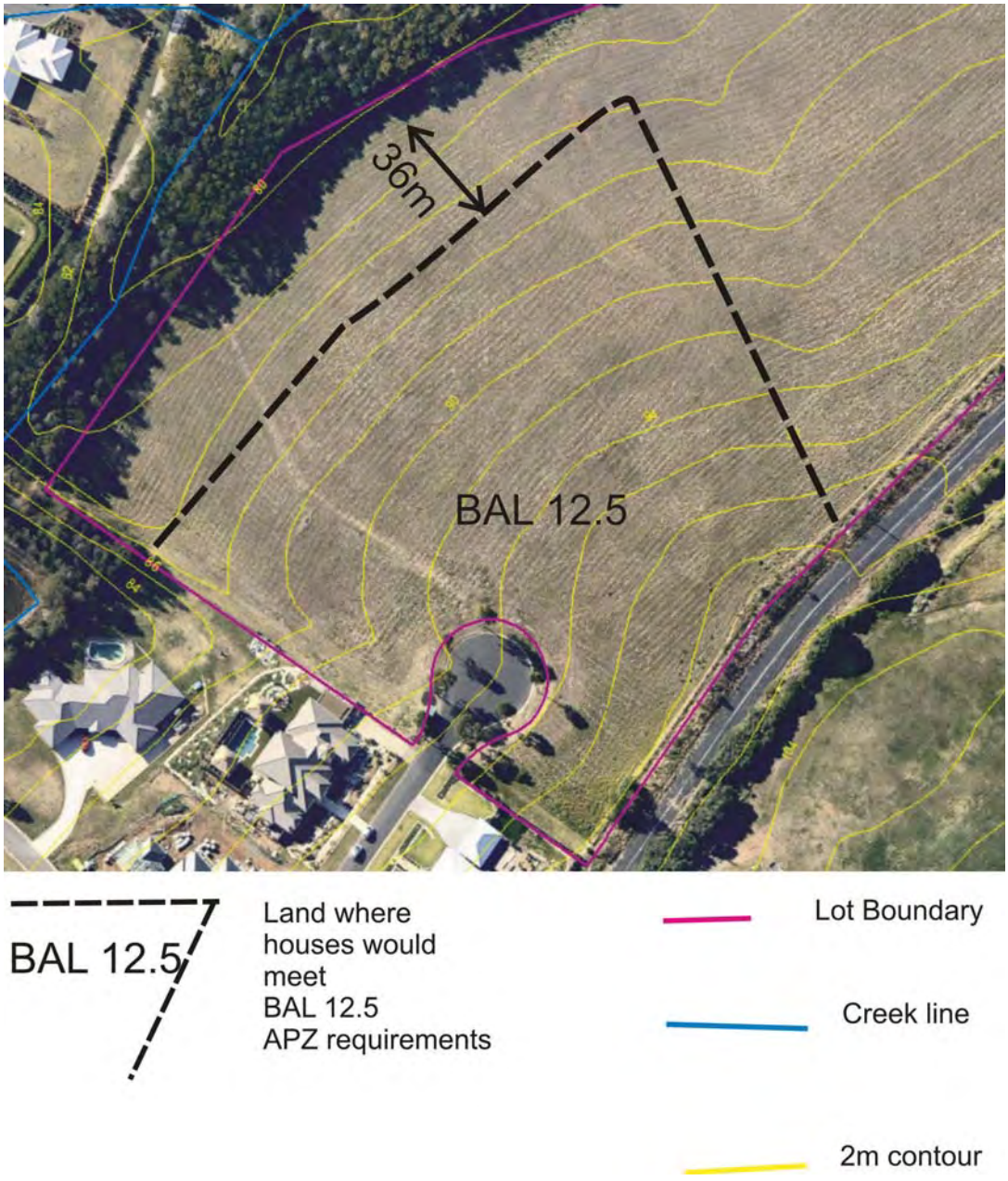
North East: the BAL 12.5 Setback is located along the 300m buffer line and assumes the grassland on the other side of this land could be "managed" as part of a APZ;

South West: Managed lands so no setback required;

South East: The Old Oaks Road provides an adequate buffer to the "Grassland" so no setback required.

Figure 7 shows BAL 12.5 APZ setbacks of land for the land identified as suitable for housing "

Figure 7 APZ Requirements of indicative dwelling footprints



5.4 Access

The proposed lots are all within 40m from an existing sealed 2-way public road.

5.5 Inappropriate Development in Hazardous Areas

Site specific controls will be required to address the development or placement of combustible materials within the building setbacks that is part of the APZ for lots. This will be based on the Bushfire Protection Measures in Appendix 5 of PBP (RFS, 2006) which includes:

- Avoid planting trees species with rough fibrous bark, or which retain/shed bark in long strips or retain dead material in their canopy.
- Avoid planting deciduous species that may increase fuel at surface/ground level by the fall of leaves.
- Avoid climbing species to walls and pergolas.
- Locate combustible materials such as woodchips/mulch, flammable fuel stores (LPG gas bottles) away from the building.
- Locate combustible structures such as garden sheds, pergolas and materials such as timber furniture away from the building.
- Ensure any vegetation planted around the house is a suitable distance away so these plants do not come into physical contact with the house as they mature.
- The property should be developed to incorporate suitable impervious area surrounding the house, including courtyards, paths and driveways.

5.6 Water Supply and Utility Services

Adequate supply of water is essential for firefighting purposes. In addition, gas and electricity should be located so as not to contribute to the risk of fire or impede the firefighting effort. Water, electricity and gas are to comply with section 4.1.3 of PBP (2006).

5.7 Building Construction

The Australian Standard AS3959:2009 Construction of building in bushfire prone areas provides the relevant construction requirements for buildings in bushfire prone land. The proposed lot layout provides building envelopes for construction standard of BAL12.5.

6. SUMMARY

Based upon an assessment of the plans and information received for the proposal, it is recommended that:

- The APZ setbacks identified in this assessment will be required as a condition of development. The consent authority is required to ensure that a mechanism is established to ensure the setback is enforced.
- Water, electricity and gas are to comply with Section 4.1.3 of PBP (2006).
- Landscaping is to be undertaken in accordance with Appendix 5 of PBP (2006) and managed and maintained in perpetuity.
- Standard of access is to comply with standards for PBP (2006) 4.1.3.

7. REFERENCES

Keith, D. (2004) "Ocean Shores to Desert Dunes" Department of Environment and Conservation, Sydney

NSW Rural Fire Service (2006) *Planning for Bushfire Protection. A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners*.

NSW Rural Fire Service Standards for asset protection zones. Can be accessed from www.rfs.nsw.gov.au

Standards Australia (2009) *AS3959, Construction of buildings in bushfire-prone areas.*

Appendix I Methodology and process used to determine APZ

The PBP (2006) provides a methodology to determine the Asset Protection Zone required for residential dwellings. In addition, the Australian standard AS3959-2009 determines the appropriate setback for construction level BAL 29.

The following process was taken to assess the APZ required for this zoning proposal.

Determine vegetation formations

The PBP (2006) requires the assessment to:
(a) Determine vegetation formations:

I. *Identify vegetation within 140 metres in all directions;*
II. *Consult Table A2.1 to determine the predominant vegetation type; and*
III. *Select the predominant vegetation formation as described in Table A2.1.*

The vegetation formations classified in Table A2.1 of Planning for Bushfire Protection 2006 that could be included in Bushfire Prone Land area:

- Forest (wet and dry schlerophyll)
- Woodland
- Plantations (pine only)
- Forested wetlands
- Tall heaths
- Freshwater heaths
- Short heaths
- Alpine complex
- Semi-arid woodlands; and
- Rainforest.

However, Bushfire Prone Land does not include:

a) Vegetation less than 1 ha, or a shape that provides a potential fire run to building of less than 50m is considered remnant vegetation, which is considered a low hazard. The same APZ and construction standards applied to rainforest are applied to remnant vegetation;

b) The following are not considered in the assessment:
   - non-vegetated areas including roads, footpaths, cycleways, waterways buildings, rocky outcrops etc; and
   - reduced vegetation including maintained lawns, golf course fairways, playgrounds or sports fields, vineyards, orchards, cultivated ornamental gardens and commercial nurseries.

For this site, the Eucalypt vegetation is found as open forest that is consistent with what is deemed to be **Forest.**

Determine effective slope

The effective slope represents the slope most likely to influence fire behavior. The effective slope between the proposed development site and forest, measured over 100m, is divided into two categories:

- 5-10 degrees
- 10-15 degrees.

The steeper slopes are closer to the development within the southern part of the development. This is because the development is closer to the Megarritys Creek.

Where a large part of the 100m transect included slopes in the 10-15 degree range, it was assumed this was the dominant slope to influence fire behaviour. The land assessed in the 5-10 degree category includes a smaller proportion of slope in the 10-15 degree category, so it was much less likely that this slope would influence fire behaviour.

Determine appropriate fire weather

The Fire Rating Index is determined by the NSW RFS for fire areas and council areas across NSW and assumed for a 1 in 50 year event (Table A2.3, RFS 2006). Wollondilly LGA has an **FDI rating of 100** for a 1 in 50 year event.

Determine appropriate setback

The required Asset Protection Zone setback is calculated using the following Table 2.4.2 from the AS 3959 2009.

Minimum specifications for Asset Protection Zones

Appendix II Definition of Asset Protection Zones

The following summary from RFS (2001) and RFS (2006) is intended to help the owner to understand how the Inner and Outer Protection Zones are to be maintained.

Inner Protection Zone (IPA)

The inner component of an asset protection zone, consisting of an area maintained to minimal fuel loads and comprising a combination of perimeter road, fire trail, rear yard or reserve, so that fire path is not created between the hazard and the building. An IPA should provide a tree canopy of less than 15% and should be located greater than 2 metres from any part of the roofline of a dwelling. Garden beds of flammable shrubs are not to be located under trees and should be no closer than 10 metres from an exposed window or door. Trees should have lower limbs removed up to a height of 2 metres above the ground.

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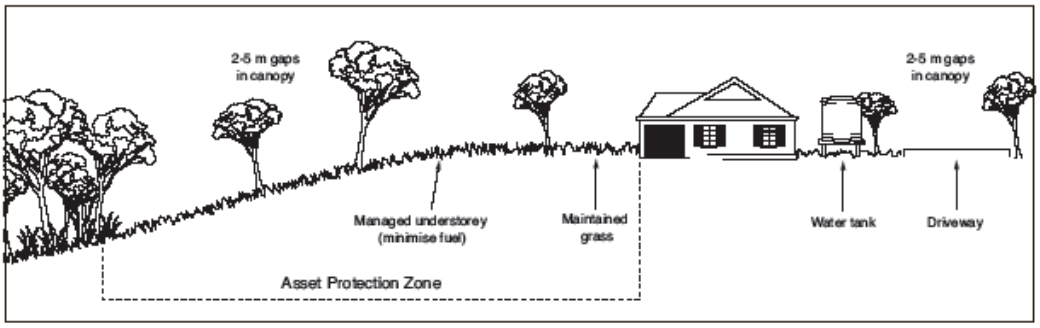

Figure A 2.1 Asset Protection Zone (setback) design

APPENDIX F

Sewer Augmentation Assessment

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resources & energy

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Facsimile: +61 2 8923-6877
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ABN 61 001 279 812

24 January 2014

Ref: 301015-03400
File:

Site Plus Pty Ltd
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Attention Anne Trezise

Dear Anne

10 CRASE PLACE, GRASMERE (LOT 24 DP 1086823) SEWERAGE SERVICING INVESTIGATION

This letter outlines a preliminary sewerage servicing investigation prepared by WorleyParsons for the proposed residential development at 10 Crase Place, Grasmere (the property), also described as Lot 24 of DP 1086823.

The purpose of this letter is to provide advice to Site Plus Pty Ltd advising whether an appropriate sewerage servicing option is available for the indicative level of development. We understand that this advice will accompany a rezoning application for the property.

1. APPROACH

This sewerage servicing investigation has been developed and presented in the following phases:

- Review of background data and documentation;
- Confirmation of the proposed development layout and type;
- Review of existing sewerage infrastructure in the vicinity of the property, including an estimate of current sewer loading and total available capacity;
- Presentation of an indicative servicing option involving connection to a Sydney Water gravity sewer sewerage system that discharges to West Camden Water Recycling Plant (WRP).

2. SITE LOCATION

The subject property is located at the end of Crase Place, Grasmere in the Camden Local Government Area (LGA). The property is bound by Werombi Road to the north, The Old Oaks Road to the east, existing residential development to the south and an unnamed watercourse to the west. The West Camden WRP is located to the north-east of the site (refer to **Figure 1**).

Figure 1: Extent of the property at 10 Crase Place, Grasmere

(Image from http://maps.six.nsw.gov.au/ (15/10/13))

3. PROPOSED DEVELOPMENT

Site Plus is currently preparing a rezoning application for the property to accommodate up to four low density residential dwellings outside the 300 metre odour control buffer for West Camden WRP. The indicative layout of these dwellings is shown below in **Figure 2**.

Figure 2: Indicative proposed development layout **Source: Site Plus**

The indicative development layout presented in **Figure 2** has been derived from an iterative process. Following the upgrade of West Camden WRP, a layout had initially been prepared for Sydney Water that showed the 'odour boundary' could be adjusted. This odour boundary is currently a constraint on potential future development of the site. Sydney Water advised that they had no issue with the development of the site if it occurred beyond 300 metres of the boundary of the WRP. Sydney Water's response amends the odour buffer from 400 metres to 300 metres. This enabled the indicative development envisaged in **Figure 2** from which this investigation has been prepared.

4. EXISTING SEWERAGE INFRASTRUCTURE

The subject property is neighboured by an existing residential area, with subdivided lots connected to a gravity sewerage system that discharges to West Camden WRP. A review of Dial Before You Dig (DBYD) information has revealed that a DN150 PVC sewer main runs within the south-western boundary of the proposed property (as marked in **Attachment A**).

The sewer passes through the neighbouring residential area before draining to the West Camden WRP inlet works. The overall capacity of the existing gravity sewerage system that services the site and surrounding residential area is governed by a DN150 PVC concrete encased sewer, located about 300 metres north of 10 Crase Place, near Werombi Rd.

The details of this sewer main were obtained from Sydney Water's HYDRA asset database and analysed using the Sydney Water Sewerage Flow Schedule (September 2013 Edition). The grade of the sewer was found to be 1.13% with a maximum capacity of 16.5 L/s.

The grade of the sewer main immediately adjacent to the property was determined by comparing survey and DBYD data, and was found to vary between 12%-14%. At this grade the total capacity of the sewer main is found to be 53.91 L/s.

The results of the pipe capacity calculations are shown in **Table 1**.

Table 1: Comparison of sewer loadings

	No. of lots[1]	Design Flow (L/s)[2]	EP [2]	*Max Design Flow (L/s)* [3]
Pre-Development (Existing) Conditions	90	12.32	315	*16.5*
Future Conditions (Existing + Proposed)	**94**	**12.78**	**329**	***16.5***

Notes:

1 Estimated number of lots currently connected to sewer main, as shown on Sydney Water DBYD Map. The neighbouring residential area contains 90 residential lots including both developed and undeveloped sites. This analysis assumes that all lots have been developed.

2 Equivalent Population, based on 3.5 EP per Lot as per WSA 02-2002-2.2 Table A1

3 Calculated using the Sydney Water Sewerage Flow Schedule (EP Calculations) (Updated September 2013)

As shown above, the existing loading falls is within capacity of the existing sewer.

Future Development

The addition of the four proposed dwellings presents a 3.7% increase in design flow. The total proposed loading on the sewer main in terms of design flow is 12.78 L/s, within the maximum of 16.5 L/s (approximately 80% of its maximum design flow).

The results of the calculations show that there is adequate capacity to cater for the four additional dwellings within the existing DN150 PVC sewer main, both in terms of design flow and EP.

5. PROPOSED SERVICING OPTION

A preliminary servicing option has been prepared by WorleyParsons and involves the installation of a DN150 gravity sewer to connect each dwelling to the existing sewer main. It shows that a gravity line be placed along the rear boundary of each property to maximise land use and connect to the existing sewer main with the property boundary, approximately 40 metres downstream of the existing sewer and maintenance hole. This indicative arrangement is shown in **Attachment A**.

We note that the indicative proposed layout shows the building envelope in close proximity to the existing maintenance hole within the boundary of Lot 1 (as shown in **Attachment A**) and the final placement / location of a dwelling should take this into consideration. It is likely that this dwelling will be subject to SWC building over or adjacent to sewer requirements, such as piling of dwelling

foundations and concrete encasement of the existing sewer. Access to this maintenance hole should be considered during the design of the proposed dwelling.

6. CONCLUSION

Following a desktop review of background documentation and an investigation of existing sewerage infrastructure capacity, we advise the following regarding sewerage servicing for the proposed development of 10 Crase Place, Grasmere:

- The existing sewerage system appears to have sufficient capacity DN150 PVC concrete encased sewer main, located approximately 300 metres north of the property, and is currently being used at approximately 80% of its estimated design flow capacity.
- There is adequate capacity in the existing sewerage infrastructure, including a sewer main to the south-west of the property, to accommodate the addition of the four proposed dwellings.

WorleyParsons would also like to bring the following points to Site Plus' attention:

- Proximity of the proposed indicative building envelope for Lot 1 in relation to the existing sewer and maintenance hole may be subject to "GUIDELINES FOR BUILDING OVER/ADJACENT TO SYDNEY WATER WATER AND WASTEWATER ASSETS"

7. DISCLAIMER

WorleyParsons has undertaken a desktop study of the overall catchment and has only assessed the key pipes in the existing sewerage system for rezoning purposes only. This report is not intended to provide any approval for connection to Sydney Water systems.

Only Sydney Water can provide approval for connection to the sewerage network.

The servicing option proposed is a concept only and may not be suitable for the final subdivision of the site. The property owner should apply to Sydney Water for a Section 73 Certificate following rezoning of the site and subsequent preparation of Development Application documentation. The developer will need to engage a Water Servicing Coordinator for the Section 73 certificate and to progress the approval, design and construction of an extension of Sydney Water's sewer system.

*****

We trust that this report meets your requirements. Please do not hesitate to contact the undersigned on (02) 8456 7263 should you require any further information or clarification of any issue.

Regards

WorleyParsons

Tim MICHEL

Engineer, Water and Environment

Reviewed by

Warren BRAZEL

Senior Civil Engineer

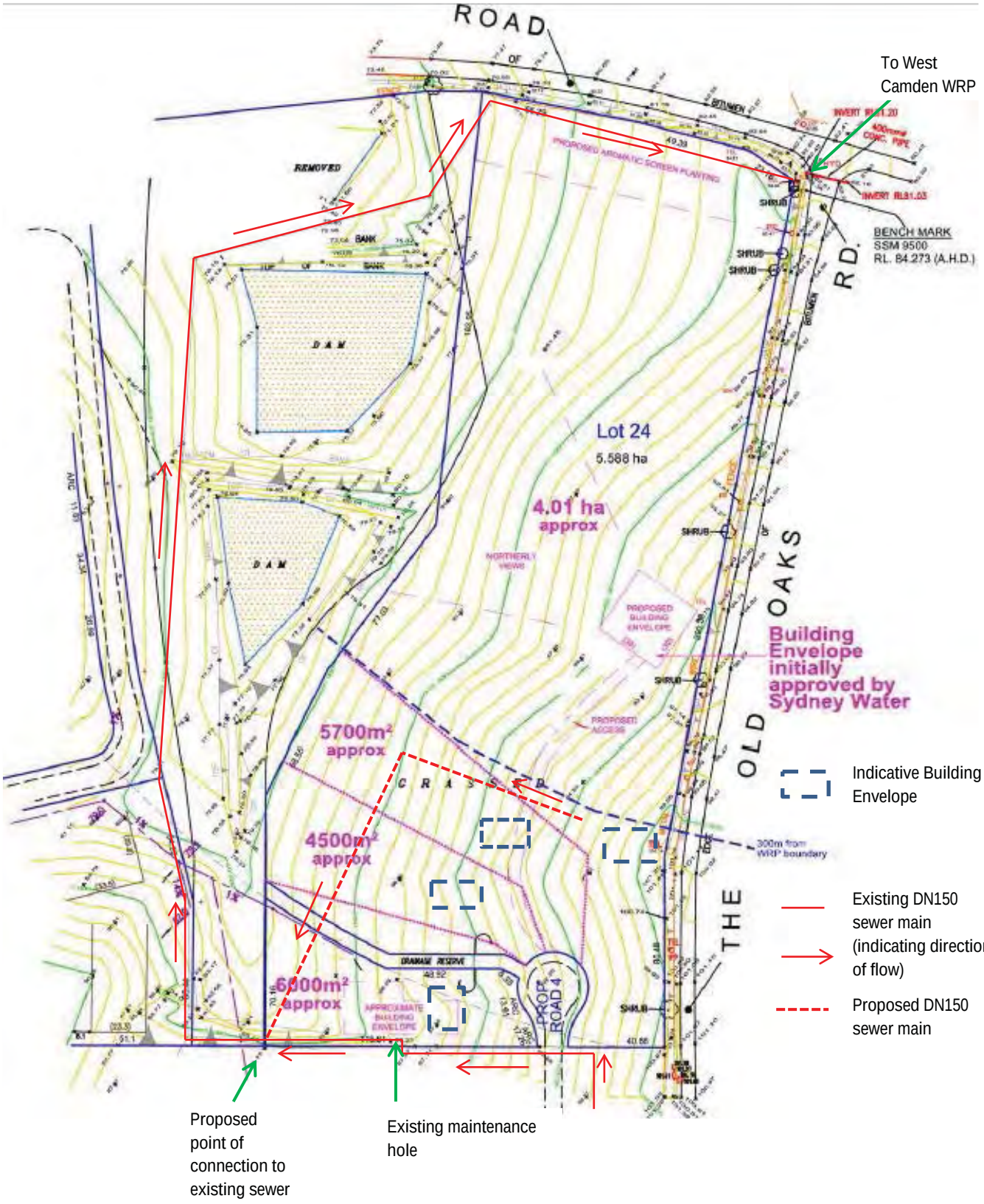
Enclosed:

Attachment A Indicative layout of proposed development

WorleyParsons
resources & energy

ATTACHMENT A

INDICATIVE LAYOUT OF PROPOSED DEVELOPMENT



APPENDIX G

Traffic Assessment

Cowbridge Holdings
Lot 24 DP 1086823 Crase Place, Grasmere
Traffic Report
Project No 12134 – November 2013

siteplus

planning . engineering . landscape . design . management

TRAFFIC REPORT FOR PLANNING PROPOSAL AT Lot 24 DP 1086823 Crase Place, Grasmere

Prepared For

Cowbridge Holdings Pty Ltd

By

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Document Tracking

Document Status		Revision 1					
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Project No.		12134			Date	November 2013	
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		Name	Signature	Date	Name	Signature	Date
1	Draft Report	AT		Nov 2013	KR		Nov 2013
2	Council Comment	AT		Jan 2014			Jan 2014

TABLE OF CONTENTS Page No.

FIGURES

APPENDICIES

1.0 SUMMARY

This Traffic Report assesses the traffic impacts relating to a Planning Proposal to enable subdivision of the site into four residential allotments. The legal description of the site is Lot 24 DP 1086823.

Currently development of the site has been limited in part because the West Camden Water Recycling Plant (WRP) is located in close proximity to the subject site. This has resulted in an odour buffer of 400m applying to the site from the boundary of the WRP. Indicative plans have been developed, and have received Sydney Water's agreement, which shows that the location of the odour buffer can be adjusted if development occurs beyond 300m from the boundary of the WRP.

The Planning Proposal is to rezone the subject site from RU1 Primary Production to R5 Large Lot Residential. Whilst the site is currently vacant, the existing zoning boundaries allow the erection of one dwelling

In our opinion, the Planning Proposal to enable the subdivision of the site will have no impact on traffic generation or infrastructure requirements.

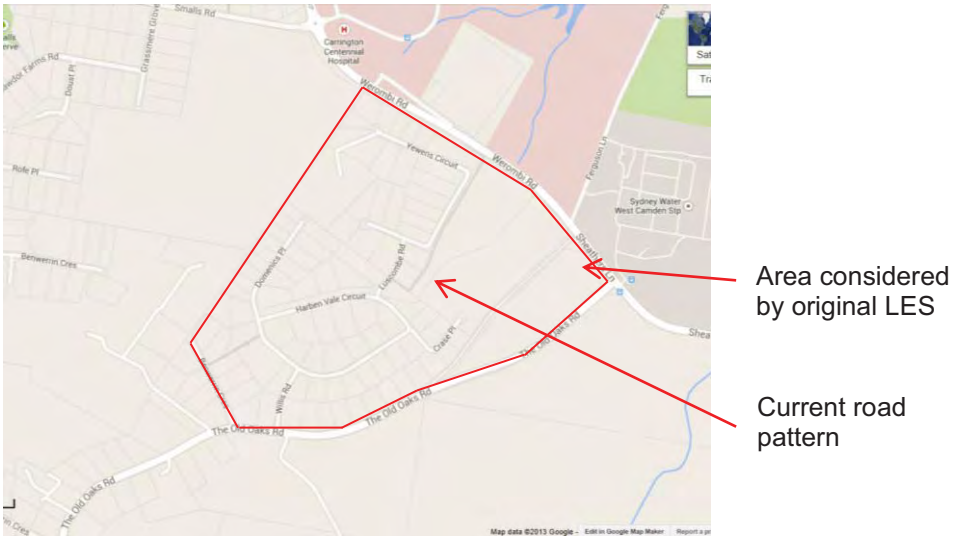
2.0 INTRODUCTION

In 2001 a Local Environmental Study (LES) was prepared by Planning Workshop Australia to support a rezoning of (five) 5 properties to permit residential zonings in Grasmere. The land area comprising these five properties in the LES is outlined in red in Figure 2.1. The Planning Proposal received support and the current road pattern is a result of the rezoning and re-subdivision of the site as shown in Figure 2.1.

To support the rezoning proposal, a range of studies were undertaken including a traffic report. One outcome of the traffic report's observations was that The Old Oaks Road was described as intersecting with Werombi Road at a T-junction. This (historic) T-junction was less than adequate for a 80km/hr as it was located within a cutting on a bend and on the crest of a hill. The road has been subsequently realigned so that it intersects with Sheathers Lane further to the east - this infrastructure work has been completed.

The subject site carries one dwelling entitlement.

Figure 2.1 Area Investigated for 2001 re-zoning proposal



Source: Planning Workshop Australia; www.googlemaps.com.au

2.1 Scope of Works

This report specifically considers the traffic impacts associated with a Planning Proposal to enable the creation of 4 lots on the subject site. In considering this assessment, it is noted that one dwelling entitlement currently exists on the site. The planning proposal to enable further subdivision of the site will create an additional 3 dwelling entitlements.

The intent of this assessment is to consider the traffic generation and capacity of the existing street system to accommodate rezoning of the site to enable additional subdivision of the site. The assessment builds on the original documentation provided in the 2001 LES.

3.0 TRAFFIC GENERATION

3.1 Locality

Werombi Road is classified as a 'collector' road and provides access to the West Camden Water Recycling Plant, the Carrington Aged Care and the Camden Farms, University of Sydney. This road has an approximate length of 16km from Cawdor Road in Camden to Silverdale Road, Werombi. It is a sealed, single lane road. Werombi Road provides the northern boundary of the site and there will be no access to the site from this road.

The Old Oaks Road is also a sealed, single lane road. A portion of this road has been realigned to accommodate the previous LES investigations. The Old Oaks Road intersects with Sheathers Lane further to the east.

The subject site is located at the end of a cul-de-sac which is indirectly accessed from The Old Oaks Road, Grasmere. It is accessed via Willis Road and Harben Vale Circuit. The location of the subject site within the local street system and the original alignment of The Old Oaks Road is shown in Figure 3.1.

Figure 3.1 Site Location

Source: www.google.com.au

3.2 Proposed Use

The report is prepared in response to a Planning Proposal to rezone the subject site to enable future subdivision of the site. Indicative plans showing the potential subdivision of the site into 4 lots is shown indicatively in Figure 3.2.

Development of the site is currently limited by an odour buffer boundary. The plans shown in Figure 3.2 have been derived from an iterative process. Initially plans had been prepared for Sydney Water following the upgrade of the WRP which showed the 'odour boundary' could be adjusted. Sydney Water advised they had no issue with the development of the site if development occurred beyond 300m of the boundary of the WRP. Sydney Water's response essentially amends the odour buffer from 400m to 300m. This enables the indicative development envisaged in Figure 3.2 from which all investigations have occurred.

Figure 3.2 Indicative Subdivision Plan

Source: Siteplus

3.3 Existing Traffic

Grassmere Estate is currently subdivided into ninety-four (94) lots and the subdivision pattern can be seen in Figure 3.1. Fourteen (14) of these lots have frontage to The Old Oakes Road or Benwerrin Crescent. The remaining eighty (80) lots use Willis Road to enter Grasmere Estate.

The LES prepared in 2001 estimated the number of lots that could be developed was 80. To determine the level of traffic generation, the original LES relied on a traffic survey undertaken by Camden Council for Ellis Lane. The survey showed that for the 157 dwellings which had direct access to Ellis Lane, approximately 1,350 vehicles were recorded on the weekday. This equated to the RTA's 'Guide to Traffic

Generating Developments' which gave a standard rate of 9 trips/day for urban areas.

On this basis, a range of 8.5-9 trips per day was adopted for the 2001 LES and translated to approximately 700 vehicle trips per day (vpd). It was considered that the existing road system would not be exceeded as there was ample spare capacity in the road system.

The capacity as the road system also took into account potential future development in the area including Ellis Lane and Grasmere. It was noted that much of the development occurring in the area would use Werombi Road to travel between Cawdor and Camden. Ultimately the LES concluded that with full development of Ellis Lane and Grasmere, it would result in an additional 3,000 to 3,250 vpd. Even with full development, the net increase in traffic flow was unlikely to create any demand for road or intersection capacity improvements.

3.4 Additional Traffic

The *Guide for Traffic Generating Developments* for dwelling houses is 8.5- 9 vpd. This Planning Proposal anticipates a 4 lot subdivision which would generate an average of 35 vpd.

It is noted that the proposed R5 Large Lot Residential zone permits attached dual occupancy development. If each of the indicative lots were developed for dual occupancy, then the average traffic generation would be 70 vpd.

In the context of traffic capacity within the existing road system, the previous studies have found that there is ample capacity for the level of development anticipated. The additional traffic generated by the planning proposal and the subsequent subdivision of the site into 4 lots is not considered a significant impact on the traffic system within the Grasmere Estate nor the traffic system in the extended area. Again it is considered that even with full development, the net increase in traffic flow will not create a demand for road or intersection capacity requirements.

3.5 Public Transport Provisions

There are buses servicing the area, which have stops closest to the subject site along Sheathers Lane adjacent the intersection with The Old Oaks Road. These run approximately on the hour along three different routes. Copies of these bus routes are found in Appendix A.

4.0 CONCLUSION

This Planning Proposal is seeking the rezoning of Lot 24 DP 1086823 Crase Place Grasmere to enable future subdivision of the site.

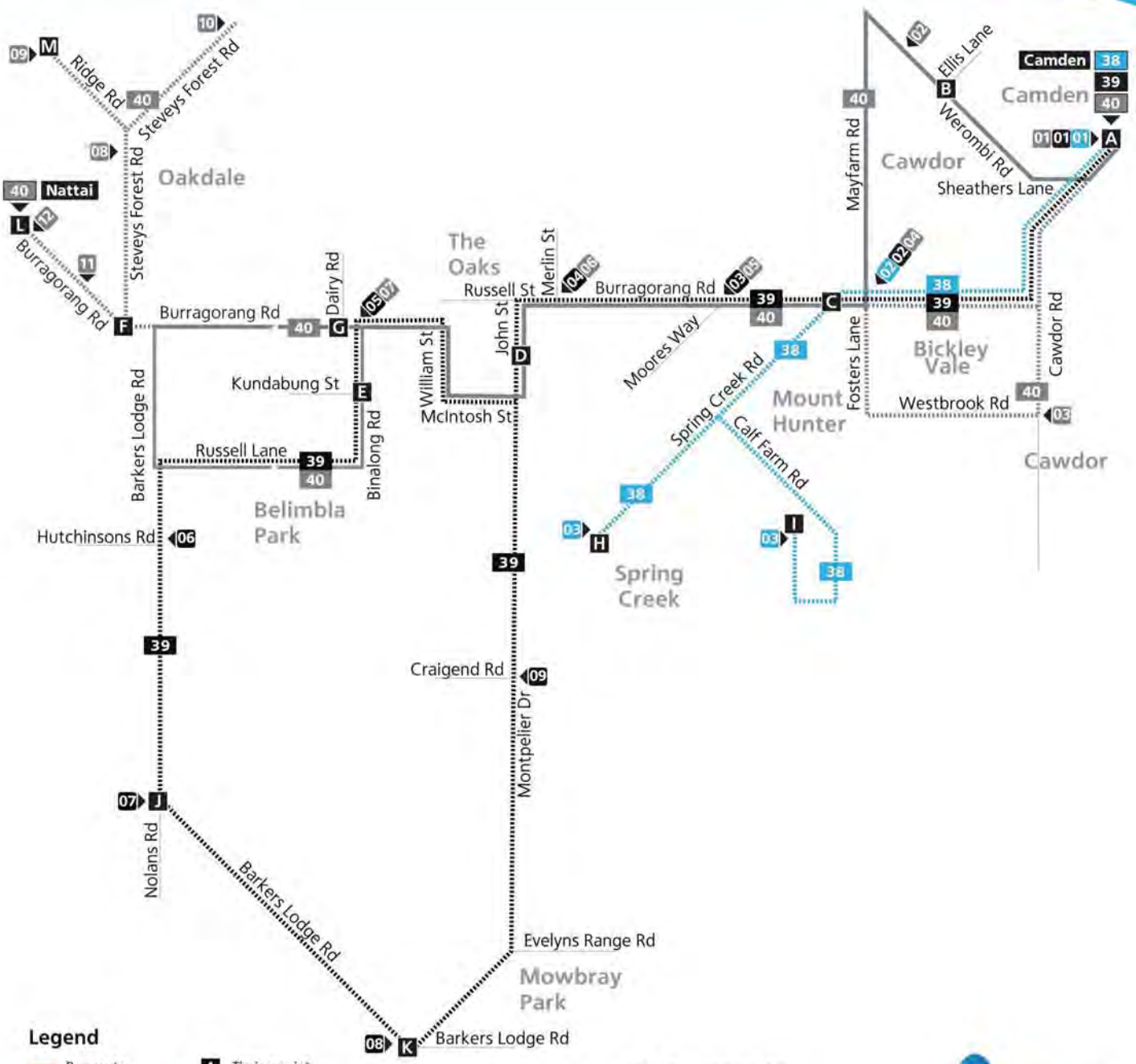
The impact of future development has been considered in the context of the existing street system and infrastructure requirements which might arise. In applying the Traffic Generating Development Guidelines to the potential for development of the site, it has been concluded that the average 35 vpd arising out of the development of the site can be easily catered for within the existing road network and capacity of the street system. Furthermore, no additional infrastructure works are required arising from this Planning Proposal.

APPENDIX A

Bus Route/ Timetable

Bus route map

38, 39, 40



Legend

- Bus route
- 39 Bus route number
- A Timing point
- 04 Section point

North — Diagrammatic Map Not to Scale

Transport

Monday to Friday — Oakdale, Belimbla Park & The Oaks to Camden

Monday to Friday

L	Nattai					$07.14							
G	Oakdale Burragorang Road & Dairy Road	05.44		06.41		$07.43	H07.59			08.14			
F	Oakdale Burragorang Road & Steveys Forest Road	05.50	06.16	06.49		$07.46	H08.02			08.18			
E	Belimbla Park Binalong Road & Kundabung Street	05.57	06.23	06.56			H07.43	$07.43		08.26			
D	The Oaks John Street & Mary Street	06.04	06.30	07.03		$07.50	H07.50	$07.50		08.34			
C	Mt Hunter Burragorang Road & Spring Creek Road	06.14	06.40	07.13		$07.57	H07.57	$07.57		08.42			$09.05
B	Ellis Lane Werombi Road & Ellis Lane	06.21	06.50	07.23	$08.09		D H08.03		D	D	08.58		D
A	Camden John Street & Argyle Street	06.27	06.59	07.32	$08.18	$08.15	H08.13	$08.15		08.54	09.08	$09.22	
O	Connecting bus departs Camden	06.34	06.58	07.35	08.17	08.11	08.17	08.17		09.11	09.11	09.41	
O	Connecting bus arrives Campbelltown Station	07.04	07.21	08.04	08.46	08.36	08.46	08.46		09.40	09.40	10.23	
W	Campbelltown train departs via East Hills line	07.15	07.27	08.17	08.58	08.24	08.26	08.26		10.02	10.02	10.35	
R	Campbelltown train departs via Liverpool line	07.19	07.35	08.26	09.03	08.28	08.39	08.39		10.09	10.09	10.39	

Monday to Friday (continued...)

L	Nattai		$08.55										
G	Oakdale Burragorang Road & Dairy Road			12.00	13.01				17.00			18.01	
F	Oakdale Burragorang Road & Steveys Forest Road		09.23	12.06	13.03	16.07			17.09			18.06	
E	Belimbla Park Binalong Road & Kundabung Street	$09.16	09.32	12.12	14.09	16.13			17.15			18.15	
D	The Oaks John Street & Mary Street	$09.16	09.38	12.18	14.15	16.19			17.22			18.16	
C	Mt Hunter Burragorang Road & Spring Creek Road	$09.26	09.47	12.27	14.24	16.28			17.35			18.29	
B	Ellis Lane Werombi Road & Ellis Lane		D	A09.56	A12.36	A14.33		D	17.55	D	18.24		D 19.19
A	Camden John Street & Argyle Street	$09.35	10.08	12.48	14.45	16.47	17.16	17.47	18.13	18.41	19.28		
O	Connecting bus departs Camden	09.47	10.23	12.53	14.47	16.53		17.51		18.46			
O	Connecting bus arrives Campbelltown Station	10.23	11.01	13.33	15.23	17.14		18.01		19.02			
W	Campbelltown train departs via East Hills line	10.32	11.26	14.02	15.42	17.52		18.13		19.33			
R	Campbelltown train departs via Liverpool line	10.39	11.09	13.39	15.39	17.19		18.43		19.47			

Monday to Friday (continued...)

L	Nattai	
G	Oakdale Burragorang Road & Dairy Road	19.19
F	Oakdale Burragorang Road & Steveys Forest Road	19.25
E	Belimbla Park Binalong Road & Kundabung Street	19.31
D	The Oaks John Street & Mary Street	19.36
C	Mt Hunter Burragorang Road & Spring Creek Road	19.44
B	Ellis Lane Werombi Road & Ellis Lane	D
A	Camden John Street & Argyle Street	19.53
O	Connecting bus departs Camden	20.29
O	Connecting bus arrives Campbelltown Station	20.49
W	Campbelltown train departs via East Hills line	21.02
R	Campbelltown train departs via Liverpool line	21.19

Saturday

G	Oakdale Burragorang Road & Dairy Road	08.16	13.34	18.31
F	Oakdale Burragorang Road & Steveys Forest Road	08.22	13.40	18.37
E	Belimbla Park Binalong Road & Kundabung Street	08.28	13.46	18.43
D	The Oaks John Street & Mary Street	08.34	13.52	18.49
C	Mt Hunter Burragorang Road & Spring Creek Road	08.43	14.01	18.58
B	Ellis Lane Werombi Road & Ellis Lane	08.52	14.10	18.31 19.07
A	Camden John Street & Argyle Street	09.02	14.20	18.40 19.17
O	Connecting bus departs Camden	09.05	14.41	18.41 19.20
O	Connecting bus arrives Campbelltown Station	09.47	15.17	19.17 19.42
W	Campbelltown train departs via East Hills line	09.54	15.24	19.24 19.54
R	Campbelltown train departs via Liverpool line	10.03	15.33	19.33 20.03

Monday to Friday — Camden to Spring Creek, Mowbray Park & Ridge Road

Monday to Friday

A	Camden John Street & Argyle Street		$15.44
I	Spring Creek End Calf Farm Road	$17.03	$18.05 $16.09
H	Spring Creek End Spring Creek Road	$17.05	$18.13 $16.14
A	Camden John Street & Argyle Street	$18.23	$19.32 $17.41

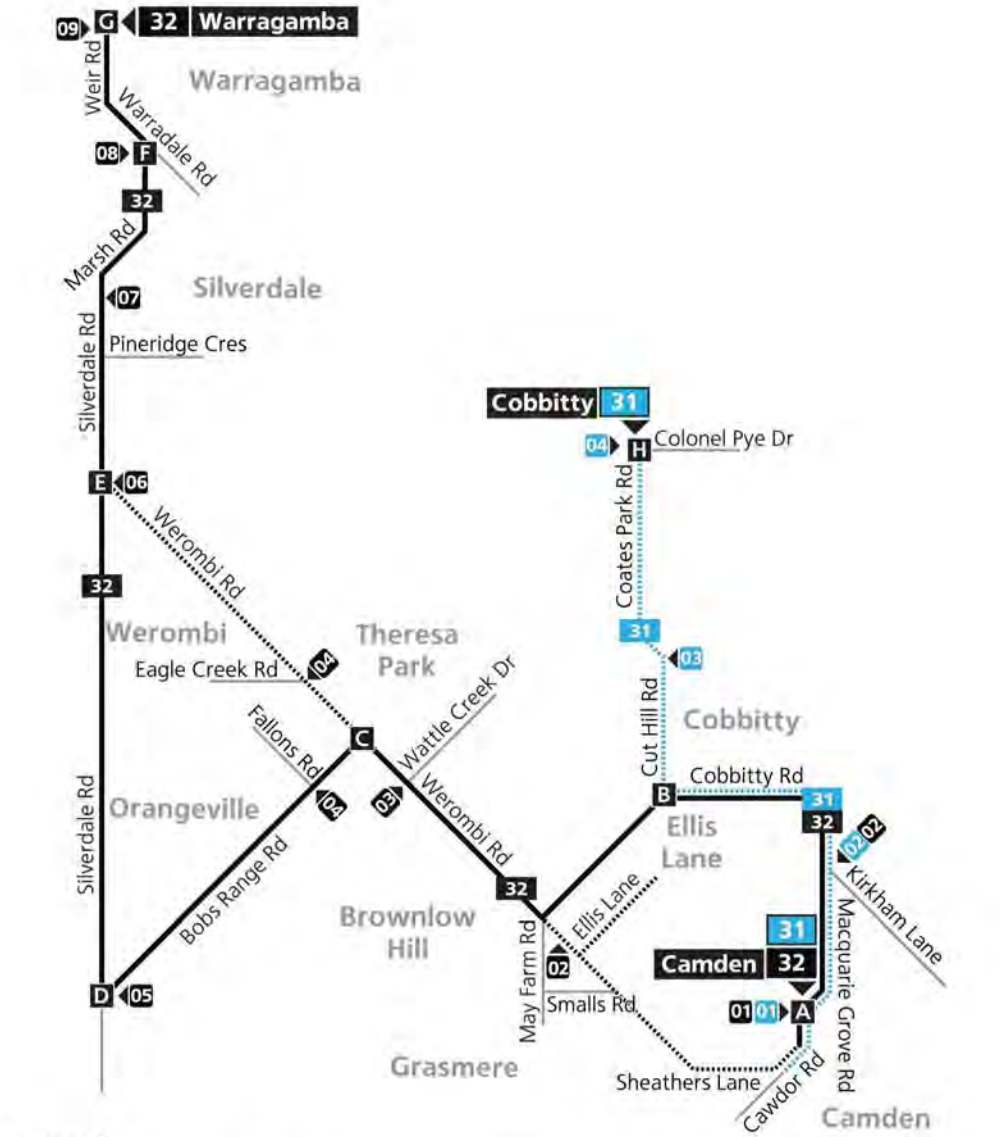
Monday to Friday

A	Camden John Street & Argyle Street			$15.27
D	The Oaks John Street & Mary Street			$15.44
E	Mowbray Park Barkers Lodge Road & Montpelier Drive	$17.21	$18.05	$16.08
J	Mowbray Park Barkers Lodge Rd & Nolans Rd	$17.34	$18.12	$16.03
D	The Oaks John Street & Mary Street	$17.50	SX18.28	$16.22
A	Camden John Street & Argyle Street	$18.15	SX18.46	

Monday to Friday

A	Camden John Street & Argyle Street	05.44		13.08
D	The Oaks John Street & Mary Street	Y09.51		16.38
M	Oakdale Steveys Forest Road & Ridge Road	06.11	$17.28	08.17 16.59
D	The Oaks John Street & Mary Street	06.30	$17.50	08.38
A	Camden John Street & Argyle Street	06.39	$18.15	16.09

Monday to Friday / Saturday — Oakdale, Belimbla Park & The Oaks to Camden



Legend

- Bus route
- 31 Bus route number
- A Timing point
- 00 Section point
- North Diagrammatic Map Not to Scale

Transport

Monday to Friday — Warragamba to Camden

Monday to Friday

Route number										
G Warragamba Weir Road & Fourteenth Street	05:57	06:36		07:28	...	...	...	12:32	16:04	17:55
F Silverdale Marsh Road & Warradale Road	05:59	06:38		07:31	...	...	...	12:34	16:42	17:57
E Werombi Silverdale Road & Werombi Road	06:11	06:50		07:51	S07:59	...	...	12:46	16:54	18:09
D Orangeville Silverdale Rd & Bobs Range Rd	06:21	07:00		W	S08:09	...	S09:05 S09:38	12:55	W	W
C Theresa Park Bobs Range Rd & Werombi Rd	06:28	07:07		07:56	S08:18	...	S09:12 S09:44	13:02	17:00	18:15
H Cobbitty Coates Park Rd & Colonel Pye Dr	...	...	S07:34	...	...	S09:11	...	...	...	...
B Cobbitty Cobbitty Road & Cut Hill Road	06:39	07:18	S07:43	H08:01	S08:29	S09:21	S09:53 S09:55	13:13	L	L
A Camden John Street & Argyle Street	06:54	07:33	S07:58	08:14	S08:45	S09:35	S09:37 S10:08	13:26	17:18	18:33
Connecting bus departs Camden	06:59	07:35	08:15	08:17	08:48	09:47	09:47 10:27	13:27	17:23	18:34
Connecting bus arrives Campbelltown	07:21	08:08	08:43	09:06	09:32	10:23	10:23 11:03	14:03	17:44	19:05
Campbelltown train departs via East Hills line	07:30	08:17	09:02	09:26	10:02	10:32	10:32 11:26	14:26	18:02	19:17
Campbelltown train departs via Liverpool line	07:36	08:36	09:09	09:39	10:09	10:39	10:39 11:09	14:09	18:13	19:13

Monday to Friday (continued...)

Route number	
G Warragamba Weir Road & Fourteenth Street	18:05
F Silverdale Marsh Road & Warradale Road	18:52
E Werombi Silverdale Road & Werombi Road	19:04
D Orangeville Silverdale Rd & Bobs Range Rd	W
C Theresa Park Bobs Range Rd & Werombi Rd	19:10
H Cobbitty Coates Park Rd & Colonel Pye Dr	...
B Cobbitty Cobbitty Road & Cut Hill Road	L
A Camden John Street & Argyle Street	19:28
Connecting bus departs Camden	19:49
Connecting bus arrives Campbelltown	20:02
Campbelltown train departs via East Hills line	20:32
Campbelltown train departs via Liverpool line	20:42

Saturday

Route number		
G Warragamba Weir Road & Fourteenth Street	07:08	18:01
F Silverdale Marsh Road & Warradale Road	07:10	18:03
E Werombi Silverdale Road & Werombi Road	07:21	18:16
D Orangeville Silverdale Rd & Bobs Range Rd	07:32	W
C Theresa Park Bobs Range Rd & Werombi Rd	07:39	18:22
H Cobbitty Coates Park Rd & Colonel Pye Dr	...	...
B Cobbitty Cobbitty Road & Cut Hill Road	07:49	L
A Camden John Street & Argyle Street	08:00	18:40
Connecting bus departs Camden	08:05	18:41
Connecting bus arrives Campbelltown	08:47	19:17
Campbelltown train departs via East Hills line	08:54	19:24
Campbelltown train departs via Liverpool line	09:03	19:33

APPENDIX H

Contamination and Salinity Assessment

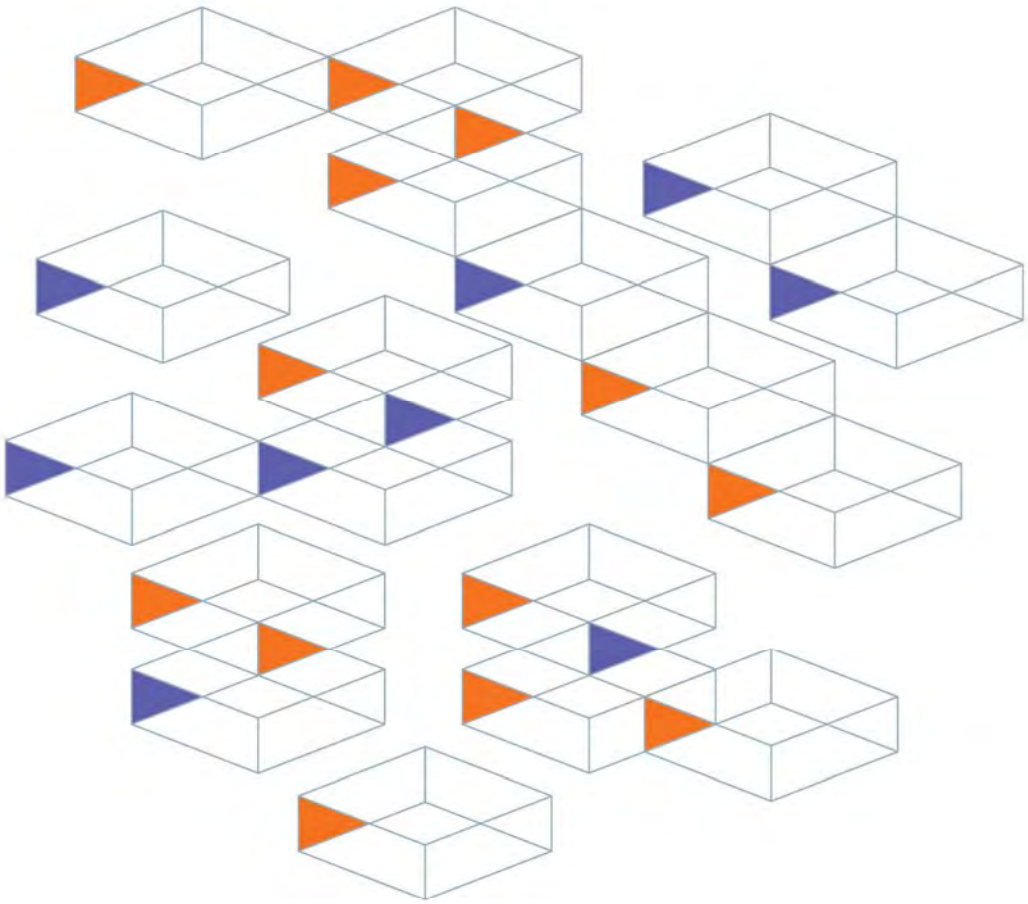
Site Plus

PHASE 1 CONTAMINATION ASSESSMENT AND SALINITY ASSESSMENT

PART LOT 24 DP1086823, 10 CRASE PLACE, GRASMERE, NSW

Report Date: 25 November 2013

Reference: ENAUWOLL04150AA-R01 (Rev. 1)



Boundaries
are set by those
who are afraid
to push them

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PHASE 1 CONTAMINATION ASSESSMENT AND SALINITY ASSESSMENT
PART LOT 24 DP1086823, 10 CRASE PLACE, GRASMERE, NSW

Report Date: 25 November 2013

Report Ref: ENAUWOLL04150AA-R01 (REV.1)

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LIST OF ATTACHMENTS

ABBREVIATIONS

AEC	Area of Environmental Concern
AHD	Australian Height Datum
bgs	below ground surface
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
COPC	Chemical of Potential Concern
DECC	Department of Environment and Climate Change (NSW)
DLWC	Department of Land and Water Conservation (NSW)
NEHF	National Environmental Health Forum
NEPM	National Environment Protection (Assessment of Site Contamination) Measure
NSW EPA	Environment Protection Authority of New South Wales
NSW SALIS	NSW Soil and Land Information System
OCP	Organochlorine Pesticide
OPP	Organophosphorus Pesticide
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
TRH	Total Recoverable Hydrocarbon
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

Coffey was commissioned by Site Plus to undertake a Phase 1 Contamination Assessment and Salinity Assessment at No. 10 Crase Place, Grasmere, NSW (herein referred to as the 'Site').

We understand that a submission is being prepared to amend current zoning allowing additional dwellings to occupy the site. Camden Council has requested information concerning soil contamination and salinity, as part of this submission. The building envelope is currently constrained by an odour buffer associated with Sydney Water's water treatment plant located northeast of the site. The building envelope occupies an approximate area of 2ha.

The objectives of the assessment were to:

- Assess, at a preliminary level, the potential for contamination to be present on the site from previous site activities with respect to its proposed land use and provide recommendations on the need for further stages of assessment; and
- Assess for potential salinity issues.

The scope of work developed to meet this objective included a review of site history information, review of geotechnical reports and salinity indicators, and site walkover. The results of the desk study and site walkover were interpreted and assessed with respect to these objectives.

Contamination Issues

Site history information indicates that the site has been used for grazing land since at least the 1900's. The site had formed part of a larger parcel of land (48.4ha) and has been progressively subdivided since 2005 into smaller lots. Apart from installation of minor infrastructure (i.e. cul-de-sac and stormwater drain), the site has remained undeveloped. There were some gaps in the early site history which cannot preclude certain activities occurring or structures having been present at the site.

Based on the available site history information, the likelihood of these contaminating activities occurring at the site was assessed as low to very low. Further stages of investigation are not considered necessary based on information presently available.

It is recommended that an unexpected finds procedure be developed to manage potential contamination, should it be encountered during construction. Potential contamination may include, but not limited to, oil staining, building materials such as fibre cement, burial pits, fill, odours or discolouration.

Salinity Issues

Based on literature review and topography, the site has been assessed to have a low to moderate salinity potential. A low salinity potential is expected in hill crest/sandstone areas and transitioning to a moderate potential in the lower lying regions near the western site boundary.

Salinity issues can be exacerbated through inappropriate development practices, which can mobilise salt to the surface where it can come into contact with structures. The risk to structures and style of mitigation measures are dependent on profiling and construction details of the proposed development. Management strategies are available to mitigate the effects of potential salinity and options can be further refined following additional investigations during detailed design. Further investigations can be undertaken at a future stage, for example, as part of a development application.

EXECUTIVE SUMMARY

This executive summary must be read in conjunction with the full report and in the context of the attached “Important Information about your Coffey Environmental Report” and to the statement of limitations in Section 9 of this report.

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1 INTRODUCTION

Coffey was commissioned by Site Plus to undertake a Phase 1 Contamination Assessment and Salinity Assessment at No. 10 Crase Place, Grasmere, NSW (herein referred to as the 'Site') (Figure 1). The work was completed in general accordance with our proposal ENAUWOLL04150AA-P01, dated 6 September 2013. This report presents the findings of the assessment.

We understand that a submission is being prepared to amend current zoning allowing additional dwellings to occupy the site. Camden Council (Council) has requested information concerning soil contamination and salinity, as part of this submission. The building envelope is currently constrained by an odour buffer associated with Sydney Water's water treatment plant located north east of the site. The buffer zone is shown on Figure 2. The building envelope occupies an approximate area of 2ha.

The objectives of the assessment were to:

- Assess, at a preliminary level, the potential for contamination to be present on the site from previous site activities with respect to its proposed land use and provide recommendations on the need for further stages of assessment; and
- Assess for potential salinity issues.

2 SCOPE OF WORKS

The work carried out by Coffey to meet the above objectives included:

- Review of published information (e.g. topographic, geological, soil landscape, salinity potential maps) and previous geotechnical reports.
- Specific information reviewed for assessing the likelihood of potential contamination to exist at the site included review of: historical title records, aerial photographs and Camden Council planning records; and search of NSW EPA and WorkCover Dangerous Goods licence databases.
- Specific information reviewed for assessing salinity potential included the collation of broad scale information including review of climate and rainfall data, land use and vegetation history, search of the NSW Office of Water groundwater database, NSW Soil and Landscape Information Systems and defining landforms.
- A site walkover to visually assess potential sources of contamination, observe surrounding land uses, topography, drainage, nearby sensitive environments, and assess details of the site history and desk study to further assess potential areas of environmental concern (AECs) and contaminants of potential concern (COPCs) and obvious evidence of saline impacted soils.
- Preparation of this report summarising results of the desk study and site walkover and making conclusions and recommendations with respect to the objectives outlined in Section 1.

3 SUMMARY OF SITE LAND USE AND SURROUNDING ENVIRONMENT

The Site identification information is summarised in Table 1. The Site locality, Site layout and general surrounding land uses are shown in Figures 1 and 2. The Site is defined on Figure 2. The Site forms part of a larger parcel of land which extends a further 265m north.

Table 1: Summary of Site Identification Information

Street Address	10 Crase Place, Grasmere, NSW
Site Area (approximate)	2ha
Dimensions (approximate)	165m (southern boundary) by 110m (eastern boundary)
Title Identifiers	Part Lot 24 DP1086823
Local Government Area	Camden
Parish and County	Camden
Current Zoning	R5 Large Lot Residential and RUI Primary Production under the Camden Council Local Environmental Plan (LEP) 2010.
Grid Co-ordinates	285317E; 6228585N (from the southeastern corner of the Site)
Surrounding Land Uses	North: Grazing land then Werombi Road and Sydney Water Sewerage Treatment Plant East: Grazing land and a residential dwelling South: Two residential dwellings and vacant land West: Dams and connecting watercourses

3.1 Topography and Drainage

Reference to the Camden 1:25,000 topographic map published by the New South Wales Department of Information, Technology and Management indicates that the Site is at an elevation between 80m and 100m above Australian Height Datum (AHD) (Refer to Figure 1). This is consistent with survey plans included in the Local Environmental Study (Coffey, 1999).

The site is located on the western slopes of a local rise in topography and has a moderate downward slope of 5° to 10° in that direction. Surface water that is not absorbed into the ground is likely to follow the topography, flowing west, into a series of dams and connecting watercourses adjacent to the site's western boundary. Water released from these dams will flow north through a culvert beneath Werombi Road and discharging into a larger dam located approximately 580m north of the site. The topography map and aerial photographs suggest that this dam does not routinely discharge into the Napean River located 75m north of this dam.

3.2 Soil Landscape

The Wollongong to Port Hacking 1:100,000 soil landscape series sheet 9029-9129, (Soil Conservation Service of NSW, 1990) shows that the Site is situated within the Blacktown soil landscape. Blacktown is a residual soil landscape characterised by gently undulating rises on Wianamatta Group shale with broad rounded crests and ridges of gently inclined slopes. The soils on crests and upper slopes are well drained however lower slopes are subject to poor drainage and drainage depressions. Soils are moderately reactive, highly plastic and have low fertility.

3.3 Local Geology

The 1:100,000 Wollongong-Port Hacking Geological Map 9029-9129 (Geological Survey of NSW 1985) shows that the Site is underlain by the Bringelly Shale. The Bringelly Shale is described as shale, carbonaceous claystone, laminite with coal in parts which forms part of the Wianamatta Group of Rocks. The map indicated that a geological contact with an 'unnamed sandstone member' was located near the southern part of the site. This unnamed sandstone member was described as fine to medium grained quartz-lithic sandstone.

This description is generally consistent with subsurface conditions encountered during previous investigations undertaken at the site (Refer to Section 4) and observations made of road cuttings near the site (Refer to Section 4).

3.4 Local Hydrogeology and Groundwater Use

A survey of groundwater bores within a 1 kilometre radius of the site registered with NSW Office of Water indicated that there are 10 registered bores. The bores were located between 400m and 1km from the site and were either up-gradient or cross gradient of the site. Three of the ten bores were registered with work summary sheets. These three bores were installed between 1965 and 2003 and registered for stock and / or irrigation purposes. Salinity information was listed for bores GW023588 and GW105251. Groundwater from bore GW023588 was described as 'very salty' whereas the salinity was measured at GW105251 but units were not specified. Water bearing zones were encountered in the 'clay shale' at 3m and 5.5m, and depths greater than 8.5m within shale and sandstone units.

No other chemical data was listed on the work summary sheets. The work summary sheets for groundwater bores GW023588, GW072309 and GW105251 and their location are presented in Appendix A.

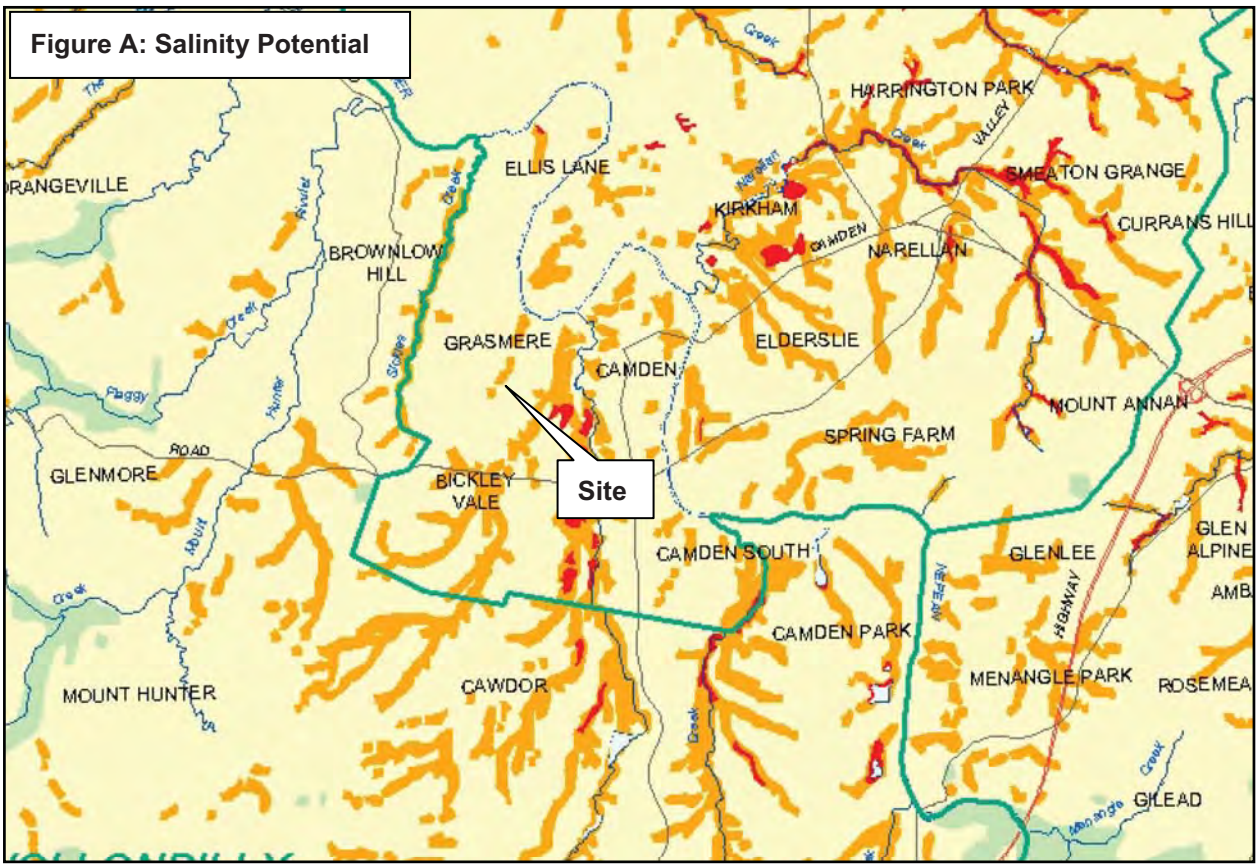
Based on site observations and results of the desk study, groundwater is expected to follow local topography, flowing in a westerly direction towards the dams and connecting watercourses. Depth to groundwater across the site is expected to be variable. In areas of higher elevation, groundwater may be encountered at depths between 3m and 5m; however in lower regions near the foot slopes, groundwater could be less than 1m from the ground surface and in periods of heavy rain groundwater seepages may be observed.

3.5 Salinity Potential

The Salinity Potential in Western Sydney 2002 (NSW DIPNR, 2003) map indicates the site located within an area of moderate salinity potential where saline areas may occur in this zone, which have not yet been identified or may occur if risk factors change adversely (Refer to Figure A). This zone is characterised by hill slopes and crests on Wianamatta Group Shales and situated within particular soil landscapes including the Blacktown Soil Landscape. Other salinity indicators such as scalding and certain vegetation types were also associated with this zone.

A high salinity potential was mapped in an area adjacent to the site's western boundary and appears to be associated with the three dams and connecting watercourses (Refer to Figure A). The map indicates these areas are predisposed to salinity based on soil, geology, groundwater and topography. This area is also located at the lower slopes of a local rise and forms part of a drainage system where water accumulation is high.

Figure A: Salinity Potential



Salinity Potential

Very Low	Moderate	High	Known Salinity

The NSW Soil and Land Information System (SALIS) database was reviewed and identified three soil technical reports prepared for properties located between 600m to 1.1km from the site. A copy of these reports and map showing where the soil survey was done is presented in Appendix A.

Profiles 58 and 59 represent hillcrest or hill slope similar to that of the site, whereas Profile 84 is located in along a plain. Electrical conductivity concentrations reported in soils from profiles 58 and 59 were notably lower than those at profile 84. This was consistent with field observations where salting was evident at Profile 84. Profiles 58 and 59 reports “no salting evident”, however Profile 59 did note “might be salty”. This observation for Profile 59 does not appear to be reflected in electrical conductivity results that suggest the potential for salt is low. Based on the descriptions provided, Profiles 58 and 59 are comparable with the landform for the site. Therefore, salinity conditions at the site could be similar to those encountered at Profiles 58 and 59.

3.6 Climate Information

Rainfall and other climate statistics for the Site were recorded by the Bureau of Meteorology at Camden Airport (Station No. 68192), which is located approximately 2.7km north of the Site (Refer to map in Appendix B).

These statistics are based on data recorded by the Camden Airport weather station since 1943 and are presented in Appendix B. Table 2 provides a summary of annual mean for temperature, rainfall and wind. No information was available on evaporation.

Table 2: Annual Mean for Climate Data

Climate Data	Rainfall (mm)	Temperature (°C)		Wind (km/h)	
		Minimum	Maximum	9am conditions	3pm conditions
Mean	768.4	10.2	23.6	7.0	15.9

Climate information can be incorporated into future salinity assessments once building designs are finalised.

4 SUMMARY OF PREVIOUS INVESTIGATIONS

Coffey was commissioned by Planning Workshop Australia in 1999 to undertake a land capability assessment incorporating items of landform, geotechnical, mineral resources, soils and agricultural capability of a 48.4ha study area, which included the current site. As part of the 1999 study, Coffey reviewed a report prepared by Regional GTS Pty Ltd presenting results of a geotechnical investigation undertaken in 1995. The references for these reports are listed below:

- Regional GTS Pty Ltd (1995) Geotechnical Assessment for proposed residential development, Lots 100, 102 and Part 1 Old Oakes Road, Camden (Report Ref: 95225/GK/1, dated 8 August 1995).
- Coffey Geosciences Pty Ltd (1999) Grasmere Local Environmental Study – Land Capability Study, southwest corner of Werombi Road and Old Oaks Road, Grasmere (Report Ref: S20166/1-AG, dated 28 July 1999).

A geotechnical report held on Council file was briefly reviewed (Geotechnique, 2005). The reference for this report is listed below:

- Geotechnique Pty Ltd (2005) Site Classification for Proposed Subdivision, cnr Werombi and Old Oakes Roads, Grasmere (Report Ref: 10255/2-AA, dated 4 July 2005).

The relevant parts of these reports are summarised in the following sections.

4.1 Geotechnical Assessment (Regional GTS, 1995)

Regional GTS (GTS) was commissioned by T.J. O'Donnell & Associates Pty Ltd to undertake a geotechnical assessment of a 43.6ha property, including the current Site. The purpose of the assessment was to assess the suitability of the land for proposed residential development. This included site stability, site classification (in accordance with AS2870.1 & .2, 1990) and other geotechnical restraints.

To achieve this objective, published geological information was reviewed, site observations of surface features such as rock outcrops and vegetation were made and collecting information on subsurface conditions from seven hand auger boreholes drilled to a maximum depth of 1.2m.

The Site and surrounding properties were mostly covered with a thick grass that had been recently slashed and trees were sparsely located throughout the area. Residential dwellings were noted west and south of the Site, but none were observed on the Site. Dams and connecting watercourses were present at the time of the assessment. The report notes that water releases from these dams flow north towards a culvert beneath Werombi Road. This culvert is located approximately 150m west of the Werombi Road and Old Oaks Road intersection.

The subsurface conditions encountered at the borehole locations were topsoil overlying residual clay soils then extremely to highly weathered shale. No fill or groundwater was observed at the borehole locations. The subsurface conditions are summarised in Table 3.

Table 3: Summary of Subsurface Conditions

Unit	Description	Unit Thickness
Topsoil	Clayey silt, low plasticity, highly organic, dry to moist, firm.	0.2m to 0.3m
Residual	Silty Clay, medium to high plasticity, red-brown becoming orange-grey with depth, moist, stiff.	0.8m to >1m
Extremely to highly Weathered Shale	Shale, grey. Extremely weathered shale (described as a soil) was dry to moist and very stiff to hard.	Unknown

The soil observed at the dams and connecting water courses was inferred to be alluvial, comprising silts but was not assessed directly. The closest borehole to the current site was located approximately 100m north of the site's northern boundary and was the only borehole to encounter highly weathered shale. Highly weathered shale was also observed in road cuttings near the Sewerage Treatment Plant, a further 170m north of this borehole. The assessment inferred the shales to be those consistent with the Bringelly Shale Member of the Wianamatta Group of rocks.

4.2 Land Capability Study (Coffey, 1999)

A land capability assessment was undertaken by Coffey in 1999 for inclusion in a Local Environmental Study being prepared by Planning Workshop Australia. The study area included five lots occupying 48.4ha. The Site formed part of Lot 102 DP841639. As previously discussed, the study included landform, geotechnical, mineral resources, soils and agricultural capability.

Land within the Grasmere area has traditionally been used for agricultural purposes such as cattle grazing, dairy farming and occasional cropping. However since the early 1970's, these activities were reduced due to land sub-division for hobby farms and rural residential use.

The study area had not been exposed to significant agricultural activities for several years however occasional grazing and pastoral improvement were still common on Lot 102 DP841639 at the time of the study. There was evidence of past overgrazing, concurrent leaching and soil erosion.

The study area was divided into four geotechnical zones based on geology, topography and risk of slope instability. The Site formed part of Zone B described as 'flanking slopes of 5° to 10°' with a low risk of slope instability. The geology for this Zone comprised colluvial and residual soils, less than 2m depth developed on either shale or sandstone. No rock outcrops were observed on Site. However, sandstone outcrops were observed in road cuttings east of the Site and another located near residential housing located approximately 400m south of the Site. Shale outcrops were noted along Werombi Road. Inferred locations of these outcrops are shown on Figure 2.

A fill mound approximately 2.5m high and 100m long was located near the south-western boundary of Lot 102 DP841639. The exact location of this fill mound was not provided. There was no further discussion concerning the occurrence of fill materials within the study area.

Four soil samples were collected across the study area targeting depths between 0.1m and 0.5m and tested for dispersion characteristics. The closest sampling location to the Site was located approximately 15m north of the northern Site boundary. This sample was collected at 0.5m representing red-brown sandy clays; clays were medium plasticity and sands fine to medium grained.

The laboratory results indicated that non-dispersive materials were present at this location. The results for other samples were variable and more dispersive.

Vegetation occurrences were discussed in broad terms for the study area. A mixture of native and introduced grasses in particular Paspalum and Phalarius, and smaller amounts of native Sedge, Kikuyu, Couch and Clovers. There was significant intrusion of weeds in the pasture, mainly of the Feather Grass and Fireweed varieties at the time of the study. Generally few trees occupied the study area. Minimal trees comprising Red Gum, and Red and Grey Box varieties generally occupied southern parts of the study area, south of the Site.

4.3 Site Classification (Geotechnique, 2005)

The majority of test pit locations were positioned in the subdivision area located west of the site. One test pit appears to have been positioned within the southern portion of the site immediately south of the cul-de-sac. The report indicates this test pit was excavated during previous geotechnical investigations. The subsurface conditions were similar to those encountered in previous investigations. No groundwater inflows were observed within the investigation depth of 2.5m. The report noted that groundwater seepages may occur in periods of rainfall.

5 SITE HISTORY

5.1 General

Information on the Site history was obtained from:

- Review of selected aerial photographs;
- A historical land title search to review previous landowners and possible past uses of the Site;
- Interviews with available people familiar with the history and operations of the Site;
- A search of NSW EPA register for listings of the Site and nearby Sites;
- A review of Camden Council records and planning certificate; and
- A search of dangerous goods licenses held for the Site by WorkCover.

The Site history information is presented in Appendix C to G and a summary is provided below.

5.2 Summary of Site History

The general chronology of the site land use history is summarised below:

- Prior to 1901 – unknown;
- 1901 to 1945 – owned by farmers/graziers;
- 1945 to 1955 – owned by a clerk and hotel keeper;
- 1955 to 1989 – owned by several government departments;
- 1989 to 2003 – owned by University of Sydney for grazing use;
- 2003 to current – owned by two company entities;
- 2005 – subdivision of Lot 1. Site formed part of Lot 102; and
- 2012 – subdivision of Lot 102. Site formed part of Lot 24.

Site history information indicates that the site has been used for grazing land since at least the 1900's. The site had formed part of a larger parcel of land (48.4ha) and has been progressively subdivided from 2005 into smaller lots. Apart from the construction of a cul-de- sac and stormwater drain (directing water from the cul-de- sac to watercourse west of the site) circa 2007, no other activities are known to have occurred on the site.

A representative from University of Sydney provided information of site activities during their tenure on the site. The University representative was involved with the site for approximately 20 years. The site was used as part of the University's agricultural / veterinarian program where a variety of sheep, cattle and horses grazed at the site. The animals were periodically transported to another property located on Mayfarm Road, where they were treated for ticks, worms and other parasites. Mayfarm Road is located approximately 3km west of the site. No chemicals (e.g. pesticides, fuels, etc) were stored onsite and no tick dips were used to manage animal parasites. Any animals that died at the site were taken to the University for dissection and further study. No crops, ploughing or filling took place during the University's tenure. The site eventually become surplus to the University's needs and was sold in 2003.

Council records indicate that a development application (DA) for student accommodation, education and associated seminars/functions was submitted for Lot 1 in 1991. Based on aerial photographs, it is likely this building was constructed south or southeast of the site. Another DA was submitted to Council for the construction of a brick stables building for Lot 24 in 2007. Based on other site history information and site observations construction of this building has not commenced. Council indicate their records do not extend past 1991 and have no record of complaints or other information pertaining to the site. A copy of these DA's is included in Appendix D.

The planning certificate for the site (under Section 149 of the Environmental Planning and Assessment Act, 1979) indicates the land is not subject to any notifications under the Contaminated Land Management Act 1997.

The WorkCover search of the Stored Chemical Information Database (SCID) for licenses to keep dangerous goods indicated that no records pertaining to dangerous goods storage existed for the site.

There are currently no notices on the NSW EPA contaminated land record.

The following gaps in the site history are noted:

- Limited information is available on the early history of the site and therefore, some site activities may not have been identified.

5.3 Historical Information for Surrounding Areas

The University representative provided anecdotal information concerning the early history of the area but was unclear if there was a direct relationship to the site. This information included:

- A boys home "on top of the hill" (presumably south or southeast of the site) operated by the Department of Youth and Community Services between 1980 and 1989; and
- Unspecified use of the area by the Department of Defence during World War 2. Based on property title information, the Commonwealth did not acquire the site until 1955 and prior to this was privately owned. This would suggest the site was not used by Department of Defence.

Although the site appears to have remained generally undeveloped, surrounding properties to the east, south and west have progressively transformed from grazing land to rural / residential land use. Northeast of the site, a sewerage treatment plant was constructed circa 1975. The dams west of the site were progressively constructed starting prior to 1954 and completed by circa 1975.

In the 1954 aerial photograph, a structure and driveway was evident in the northeastern corner of Lot 24, but had been removed by 1965. Other evidence of activities on the remaining parts of Lot 24 was not observed until 2007. In 2007, two patches of exposed soils were observed north of the site. Although some grass cover has re-established across these areas since 2007, exposed soil is still evident.

6 SITE OBSERVATIONS

An environmental scientist made observations of the Site and nearby surrounds on 21 October 2013 during a site walkover. A summary of the relevant observations made is described below, with the Site layout and relevant features shown in Figure 2. An aerial photograph showing the current Site is presented in Figure 2. Relevant Site photographs (Plates 1 to 6) are also presented in Appendix H.

The Site was irregular in shape and except for a cul-de-sac occupying the southeastern portion of the site was vacant (i.e. no buildings/structures present). The Site was accessible from Crase Place which terminated within the southeastern portion of the site. The northern and eastern site boundaries were defined by a wooden fence and the western boundary by a serious of dams, connecting watercourses and a chain wire fence. Chain wire fencing was used along parts of the southern boundary to define the property boundary between residential Lots and the site.

The Site and remaining parts of Lot 24 are situated on the western slope of a local rise (Plate 3). The ground surface has a moderate downward slope (ranging between 5% and 10%) mostly towards the west with some cross slope towards the north (Plate 3). At the base of these slopes were a series of local depression, which at the time of the site visit were dry and firm underfoot (Plates 1, 2 and 5). During periods of heavy rain, water is likely to accumulate in these areas causing saturated ground conditions. These areas generally correlated with darker green zones observed on aerial photographs.

The Site and remaining parts of Lot 24 were generally grass covered with some patches of exposed soil (Plates 2 and 5). One of these patches was located adjacent to the southern boundary and may be associated with the construction of the adjoining residential dwelling (Plates 2 and 4). Some gravel fill was observed in this area. The other two patches of exposed soil were located north of the site and corresponded to exposed ground observed in the 2007 aerial photograph (Plate 5). At the time of the site walkover some grass cover had re-established in these areas. Some brick fragments were observed suggesting these exposed areas may have been associated with a localised filling event during construction of nearby residential dwellings (Plate 6).

Evidence of a slight depression was observed between the cul-de-sac and watercourses west of the site. This depression is consistent with that observed in the 2007 aerial photograph and appears to be associated with the stormwater drainage system. This depression is also consistent with the drainage easement shown on title diagrams (Appendix E). The drainage appears to capture water accumulated within the cul-de-sac and directs it towards the watercourses located west of the site. No other structures or infrastructure was observed on the site. A building once occupied the northeastern corner of Lot 24 (offsite) circa 1954. Evidence of this former structure was not apparent during the site walkover however the long grass may have obscured any remnants.

There was no evidence of salinity indicators onsite such as yellowing vegetation or dieback, scalding or efflorescence. No groundwater seepages or springs were observed.

Apart from some localised filling in offsite areas, no other evidence of potentially contaminating activities or indications of contamination (such as oil staining, etc) was observed.

7 DISCUSSION

7.1 Contamination

Site history information and site observations indicate that site activities have generally been associated with grazing and the site has remained undeveloped. Activities and potential sources of contamination associated with this land use could have potentially included:

- Importing fill of unknown quality and origin;
- Potential weathering of hazardous building materials, demolition of site structures and use of pesticides near buildings;
- Storage of fuels and chemicals in former farming buildings and sheds;
- Use of pesticides for treating parasites on livestock;
- Filling of disused farm dams with waste materials;
- Burial of deceased livestock.

The likelihood of these activities and potential sources of contamination occurring onsite and associated Contaminants of Potential Concern (COPCs) based on site history and observation information is discussed in Table 4.

Table 4: Summary of Potentially Contaminating Activities, Potential Areas of Environmental Concern, Likelihood of Contamination and Contaminants of Potential Concern

Potentially Contaminating Activity/Source	Sub Component / Description	Potential Areas of Environmental Concern (See also Figure 2)	Likelihood of Contamination*	Potential Chemicals of Concern
Fill of Unknown Origin and Quality	Surplus soil (cut materials) transferred to site during construction of neighbouring subdivisions south and southeast of the site.	Localised areas near the northern site boundary and near the southern boundary adjacent recently constructed residential dwellings. *Soil and groundwater media potentially impacted.*	Low likelihood of contamination and appears to be localised. Geotechnical reports did not identify fill at the site. The fill material appears to have been derived from excavation of natural soils although some brick fragments were observed in filled areas near the northern boundary. Some gravel fill was observed near the southern boundary and possibly associated with the distribution of excess materials following construction of the adjoining residential dwelling. No other evidence of construction materials was observed on the ground surface near filled areas.	TRH, BTEX, PAH, OCP, OPP, PCB, heavy metals, asbestos
Potential weathering of hazardous building materials, demolition of site structures and use of pesticides near buildings	Weathering of hazardous building materials such as lead paint, fibre cement containing asbestos and galvanised iron. Potentially present from former and existing site structures. Possible use of pesticides near structures.	Typically contamination associated with this AEC is identified adjacent to former structures or in areas where demolition has taken place. *Generally near surface soil are potentially impacted.*	Very low likelihood of contamination. Site history information has not identified any structures within the site suggesting contamination associated with the use of pesticides around building and weathering of hazardous building materials is unlikely.	OCP, OPP and heavy metals, asbestos
Storage of fuels and chemicals in former farm buildings and sheds	Storage and use of fuels, oils and lubricants or other chemicals	Contamination would typically be present in near surface soils in areas where these chemicals were stored. *Soil and groundwater media potentially impacted.*	Very low likelihood of contamination. Site history information has not identified any structures onsite, storage or the use of chemicals onsite.	TRH, BTEX, PAH, OCP, OPP, arsenic
	Use of pesticides for treating parasites on livestock.	Contamination would typically occur in near designated treatment areas, such as a tick dip. Contamination would be present in both surface soil and at depth depending on the method of pesticide application. *Soil and groundwater media potentially impacted.*	Low likelihood of contamination. Site history suggests parasite management occurred offsite in recent years however limited information is available on early history for the site.	OCP, OPP, arsenic
Filling and disposal of wastes in farm dams or other areas	Filling of dams with waste materials and / or burial of dead livestock.	Contamination would typically be present within the fill materials used to fill the dam and possibly dam sediments from runoff from upslope areas. Contamination associated with livestock burial areas would be localised to burial cell. *Soil and groundwater media potentially impacted.*	Low likelihood of contamination. Three dams were constructed west of the site and are presently filled with water. Aerial photographs did not identify dams onsite or potential burial areas. The University confirmed during their tenure that dead animals were removed from site. Aerial photographs are up to 11 years apart and other site history information available prior to 1990 is limited. Filling of dams and burying dead animals were activities routinely undertaken in rural areas; and therefore it cannot be precluded that these practices did not occur at the site.	TRH, BTEX, PAH, OCP, PCB, heavy metals, asbestos, nutrients, pathogens.

* *It is important to note that this is not an assessment of financial risk associated with the AEC in the event contamination is detected, but a qualitative assessment of the probability of contamination being detected at the potential AEC, based on the site history study and field observations.*

TRH Total Recoverable Hydrocarbons
BTEX Benzene, Toluene, Ethylbenzene, Xylene
PAH Polycyclic Aromatic Hydrocarbons
PCB Polychlorinated Biphenyl
Heavy Metals arsenic, cadmium, chromium, copper, lead, nickel, mercury, zinc
OCP Organochlorine Pesticides
OPP Organophosphorus Pesticides

7.2 Salinity

The desk study has indicated that the site is located within an area of moderate salinity potential, particularly lower lying regions within the western portions of the site. Previous investigations observed sandstone near the southern and southeastern parts of the site and potentially associated with the local rise in topography. These areas are likely to pose a lower salinity potential than the lower western portions of the site.

No groundwater information was available directly relating to the site. Groundwater information from other properties in the region indicates water bearing zones encountered at depths between 3m and 5m in weathered shale. Natural springs or seepages were not observed during the site walkover however perched/shallow groundwater may daylight as springs or seepages during heavy rainfall periods. It should be noted that water bearing zones within the Bringelly Shale are typically saline.

The 2007 aerial photograph indicated potential white efflorescence in areas immediately surrounding dams, located west of the site. This white feature may also be associated with hydromulching rather than salt as vegetation growth substantially increased in later years. Potential hydromulching is consistent with site observations, as no evidence of salt impacts were noted onsite or in nearby surrounding areas.

Inappropriate development practices could mobilise the potentially saline groundwater to the surface, or lower the site surface to intercept saline soils, not just in the topographically low areas on site, but also in more elevated locations. Inappropriate practices could include:

- Excessive removal of vegetation, thereby reducing the amount of water intake by plants and increasing infiltration of rainwater into the soil, causing the water table to rise nearer the ground surface;
- Overwatering of future parks and gardens causing the water table to rise nearer the ground surface;
- Construction of retaining walls and excessive compaction can form barriers to groundwater flow, resulting in a rising groundwater table or perched water behind the wall. Saline water can also lead to damage of the retaining wall;
- Pipes extending into the groundwater zone can be corroded quicker than normal. Burst and / or leaking pipes can exacerbate the problem by rising the water table; and
- Drilling of piers, footings etc into the groundwater surface can lead to capillary rise of the groundwater table, particularly in clay soils.

8 CONCLUSIONS

8.1 Contamination

Site history information indicates that the site has been used for grazing land since at least the 1900's. The site had formed part of a larger parcel of land (48.4ha) and has been progressively subdivided since 2005 into smaller lots. Apart from installation of minor infrastructure (i.e. cul-de-sac and stormwater drain), the site has remained undeveloped. There were some gaps in the early site history which cannot preclude certain activities occurring or structures having been present at the site. Potentially contaminating activities that may occur at rural sites and may have occurred at the site include:

- Importing fill of unknown quality and origin;
- Potential weathering of hazardous building materials, demolition of site structures and use of pesticides near buildings;
- Storage of fuels and chemicals in former farming buildings and sheds;
- Use of pesticides for treating parasites on livestock;
- Filling of disused farm dams with waste materials;
- Burial of deceased livestock.

Based on the available site history information, the likelihood of these contaminating activities occurring at the site was assessed as low to very low. Further stages of investigation are not considered necessary based on information presently available.

It is recommended that an unexpected finds procedure be developed to manage potential contamination, should it be encountered during construction. Potential contamination may include, but not limited to, oil staining, building materials such as fibre cement, burial pits, fill, odours or discolouration.

8.2 Salinity

Based on literature review and topography, the site has been assessed to have a low to moderate salinity potential. A low salinity potential is expected in hill crest/sandstone areas and transitioning to a moderate potential in the lower lying regions near the western site boundary. Further investigation is required to confirm this assessment along with developing appropriate strategies for managing the level of salinity present at the site. Further investigations can be undertaken at a future stage, for example, as part of a development application.

Salinity issues can be exacerbated through inappropriate development practices, which can alter groundwater levels, or disturb soils and mobilise salt to the surface, where it can come into contact with structures. The following management strategies and options are provided for preliminary planning purposes only. Further investigation would be best undertaken once more details are known with respect to the proposed development.

Options that may be used to mitigate the effects of potential saline soils or groundwater on the site include the following:

- Minimising water infiltration;
- Landscaping using salt-tolerant native plants in areas identified with slightly saline soils;
- Sealing the base of stormwater detention ponds;
- Retaining as much deep-rooted vegetation on site as possible;
- Minimising soil disturbance such as compaction and cut and fill;
- Water proofing slab work;
- Provide good site drainage to prevent water-logging;
- The use of higher strength concrete with thicker cover and exposure class masonry;
- Minimise disturbance on groundwater flow caused by utility trenches; and
- Soils replaced in their original order if deep (<1m) excavations are undertaken.

9 LIMITATIONS

Limited information is available on the early history of the site and therefore, some site activities may not have been identified. In addition, aerial photographs are up to 11 years apart and other site history information available prior to 1990 is limited. We cannot preclude that potentially contaminating activities took place during these periods. Allowances for uncertainties and potential unexpected finds should be made during planning and development phases.

In preparing this report, Coffey has relied on information in reports made available to Coffey by the client and prepared by other consultants. Coffey has assumed that these consultants performed the scope of works in general accordance with standard industry procedures and guidance materials at the time and that the information is suitable.

We draw your attention to the attached sheet titled "Important Information about your Coffey Environmental Report" which must be read in conjunction with this report.

10 REFERENCES

1. **Coffey Geosciences Pty Ltd (1999)** *Grasmere Local Environmental Study – Land Capability Study*, southwest corner of Werombi Road and Old Oaks Road, Grasmere (Report Ref: S20166/1-AG, dated 28 July 1999);
2. **Geological Survey of NSW (1985)** *1:100,000 Wollongong to Port Hacking Geological Series Sheet No. 9029-9129*, edition 1;
3. **Geotechnique Pty Ltd (2005)** *Site Classification for Proposed Subdivision*, Cnr Werombi and Old Oakes Roads, Grasmere (Report Ref: 10255/2-AA, dated 4 July 2005);
4. **NEPC (1999)** *National Environmental Protection (Assessment of Site Contamination) Measure 1999*, National Environment Protection Council;
5. **NEPC (2013)** *National Environmental Protection (Assessment of Site Contamination) Measure 1999*, as amended in 2013, National Environment Protection Council;
6. **NSW DEC (2006)** *Guidelines for the NSW Auditor Scheme,* 2nd Ed;
7. **NSW Department of Infrastructure, Planning and Natural Resources (2003)** *Salinity Potential in Western Sydney 2002*;
8. **NSW Department of Information, Technology and Management (2000)** *Camden 1:25,000 Topographic Map 9029-4N*, 3rd Edition;
9. **NSW OEH (2000)** *Guidelines for Reporting on Contaminated Sites*;
10. **Regional GTS Pty Ltd (1995)** *Geotechnical Assessment for proposed residential development*, Lots 100, 102 and Part 1 Old Oakes Road, Camden (Report Ref: 95225/GK/1, dated 8 August 1995).

Important information about your **Coffey** Environmental Report

Introduction

This report has been prepared by Coffey for you, as Coffey's client, in accordance with our agreed purpose, scope, schedule and budget.

The report has been prepared using accepted procedures and practices of the consulting profession at the time it was prepared, and the opinions, recommendations and conclusions set out in the report are made in accordance with generally accepted principles and practices of that profession.

The report is based on information gained from environmental conditions (including assessment of some or all of soil, groundwater, vapour and surface water) and supplemented by reported data of the local area and professional experience. Assessment has been scoped with consideration to industry standards, regulations, guidelines and your specific requirements, including budget and timing. The characterisation of site conditions is an interpretation of information collected during assessment, in accordance with industry practice,

This interpretation is not a complete description of all material on or in the vicinity of the site, due to the inherent variation in spatial and temporal patterns of contaminant presence and impact in the natural environment. Coffey may have also relied on data and other information provided by you and other qualified individuals in preparing this report. Coffey has not verified the accuracy or completeness of such data or information except as otherwise stated in the report. For these reasons the report must be regarded as interpretative, in accordance with industry standards and practice, rather than being a definitive record.

Your report has been written for a specific purpose

Your report has been developed for a specific purpose as agreed by us and applies only to the site or area investigated. Unless otherwise stated in the report, this report cannot be applied to an adjacent site or area, nor can it be used when the nature of the specific purpose changes from that which we agreed.

For each purpose, a tailored approach to the assessment of potential soil and groundwater contamination is required. In most cases, a key objective is to identify, and if possible quantify, risks that both recognised and potential contamination pose in the context of the agreed purpose. Such risks may be financial (for example, clean up costs or constraints on site use) and/or physical (for example, potential health risks to users of the site or the general public).

Limitations of the Report

The work was conducted, and the report has been prepared, in response to an agreed purpose and scope, within time and budgetary constraints, and in reliance on certain data and information made available to Coffey.

The analyses, evaluations, opinions and conclusions presented in this report are based on that purpose and scope, requirements, data or information, and they could change if such requirements or data are inaccurate or incomplete.

This report is valid as of the date of preparation. The condition of the site (including subsurface conditions) and extent or nature of contamination or other environmental hazards can change over time, as a result of either natural processes or human influence. Coffey should be kept appraised of any such events and should be consulted for further investigations if any changes are noted, particularly during construction activities where excavations often reveal subsurface conditions.

In addition, advancements in professional practice regarding contaminated land and changes in applicable statues and/or guidelines may affect the validity of this report. Consequently, the currency of conclusions and recommendations in this report should be verified if you propose to use this report more than 6 months after its date of issue.

The report does not include the evaluation or assessment of potential geotechnical engineering constraints of the site.

Interpretation of factual data

Environmental site assessments identify actual conditions only at those points where samples are taken and on the date collected. Data derived from indirect field measurements, and sometimes other reports on the site, are interpreted by geologists, engineers or scientists to provide an opinion about overall site conditions, their likely impact with respect to the report purpose and recommended actions.

Variations in soil and groundwater conditions may occur between test or sample locations and actual conditions may differ from those inferred to exist. No environmental assessment program, no matter how comprehensive, can reveal all subsurface details and anomalies. Similarly, no professional, no matter how well qualified, can reveal what is hidden by earth, rock or changed through time.

The actual interface between different materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but

steps can be taken to reduce the impact of unexpected conditions.

For this reason, parties involved with land acquisition, management and/or redevelopment should retain the services of a suitably qualified and experienced environmental consultant through the development and use of the site to identify variances, conduct additional tests if required, and recommend solutions to unexpected conditions or other unrecognised features encountered on site. Coffey would be pleased to assist with any investigation or advice in such circumstances.

Recommendations in this report

This report assumes, in accordance with industry practice, that the site conditions recognised through discrete sampling are representative of actual conditions throughout the investigation area. Recommendations are based on the resulting interpretation.

Should further data be obtained that differs from the data on which the report recommendations are based (such as through excavation or other additional assessment), then the recommendations would need to be reviewed and may need to be revised.

Report for benefit of client

Unless otherwise agreed between us, the report has been prepared for your benefit and no other party. Other parties should not rely upon the report or the accuracy or completeness of any recommendation and should make their own enquiries and obtain independent advice in relation to such matters.

Coffey assumes no responsibility and will not be liable to any other person or organisation for, or in relation to, any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report.

To avoid misuse of the information presented in your report, we recommend that Coffey be consulted before the report is provided to another party who may not be familiar with the background and the purpose of the report. In particular, an environmental disclosure report for a property vendor may not be suitable for satisfying the needs of that property's purchaser. This report should not be applied for any purpose other than that stated in the report.

Interpretation by other professionals

Costly problems can occur when other professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations, a suitably qualified and experienced environmental consultant should be retained to explain the implications of the report to other professionals referring to the report and then review plans and specifications produced to see how other professionals have incorporated the report findings.

Given Coffey prepared the report and has familiarity with the site, Coffey is well placed to provide such assistance. If another party is engaged to interpret the recommendations of the report, there is a risk that the contents of the report may be misinterpreted and Coffey disowns any responsibility for such misinterpretation.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, laboratory data, drawings, etc. are customarily included in our reports and are developed by scientists or engineers based on their interpretation of field logs, field testing and laboratory evaluation of samples. This information should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

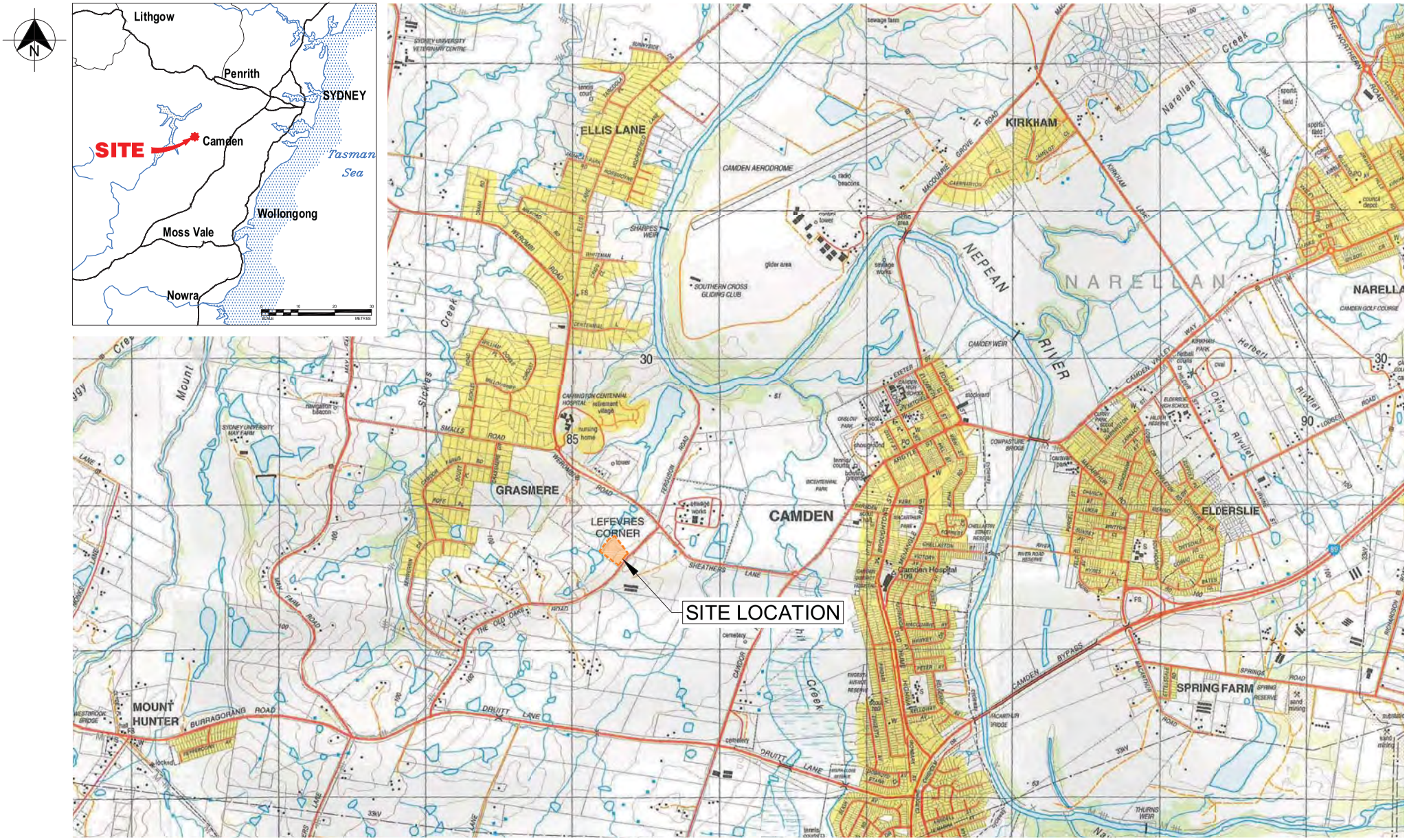
This report should be reproduced in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties.

Responsibility

Environmental reporting relies on interpretation of factual information using professional judgement and opinion and has a level of uncertainty attached to it, which is much less exact than other design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. As noted earlier, the recommendations and findings set out in this report should only be regarded as interpretive and should not be taken as accurate and complete information about all environmental media at all depths and locations across the site.

Figures

Phase 1 Contamination Assessment and Salinity Assessment
Part Lot 24 DP1086823, 10 Crase Place,
Grasmere, NSW



SOURCE: NSW DEPARTMENT OF INFORMATION, TECHOLOGY AND MANAGEMENT (2000)
CAMDEN 1:25,000 TOPOGRAPHIC MAP 9029-4N, 3rd EDITION

revision	description	drawn	approved	date

drawn	LZ
approved	SR
date	1.10.13
scale	1:25000
original size	**A3**

coffey

client: SITE PLUS

project: PHASE 1 CONTAMINATION ASSESSMENT & SALINITY ASSESSMENT PART LOT 24 DP1086823, 10 CRASE PLACE, GRASMERE, NSW

title: SITE LOCALITY PLAN

project no: ENAUWOLL04150AA-R01

figure no: 1

AERIAL IMAGE SOURCE: GOOGLE EARTH PRO 6.0.1

revision	description	drawn	approved	date

20 0 20 40 60 80 100
Scale (metres) 1:2000

drawn	LZ
approved	SR
date	1.10.13
scale	1:2000
original size	A3

coffey

client: SITE PLUS

project: PHASE 1 CONTAMINATION ASSESSMENT & SALINITY ASSESSMENT PART LOT 24 DP1086823, 10 CRASE PLACE, GRASMERE, NSW

title: SITE LAYOUT PLAN SHOWING SITE FEATURES

project no: ENAUWOLL04150AA-R01

figure no: 2

Appendix A
Registered Groundwater Bore Search Results and SALIS Report

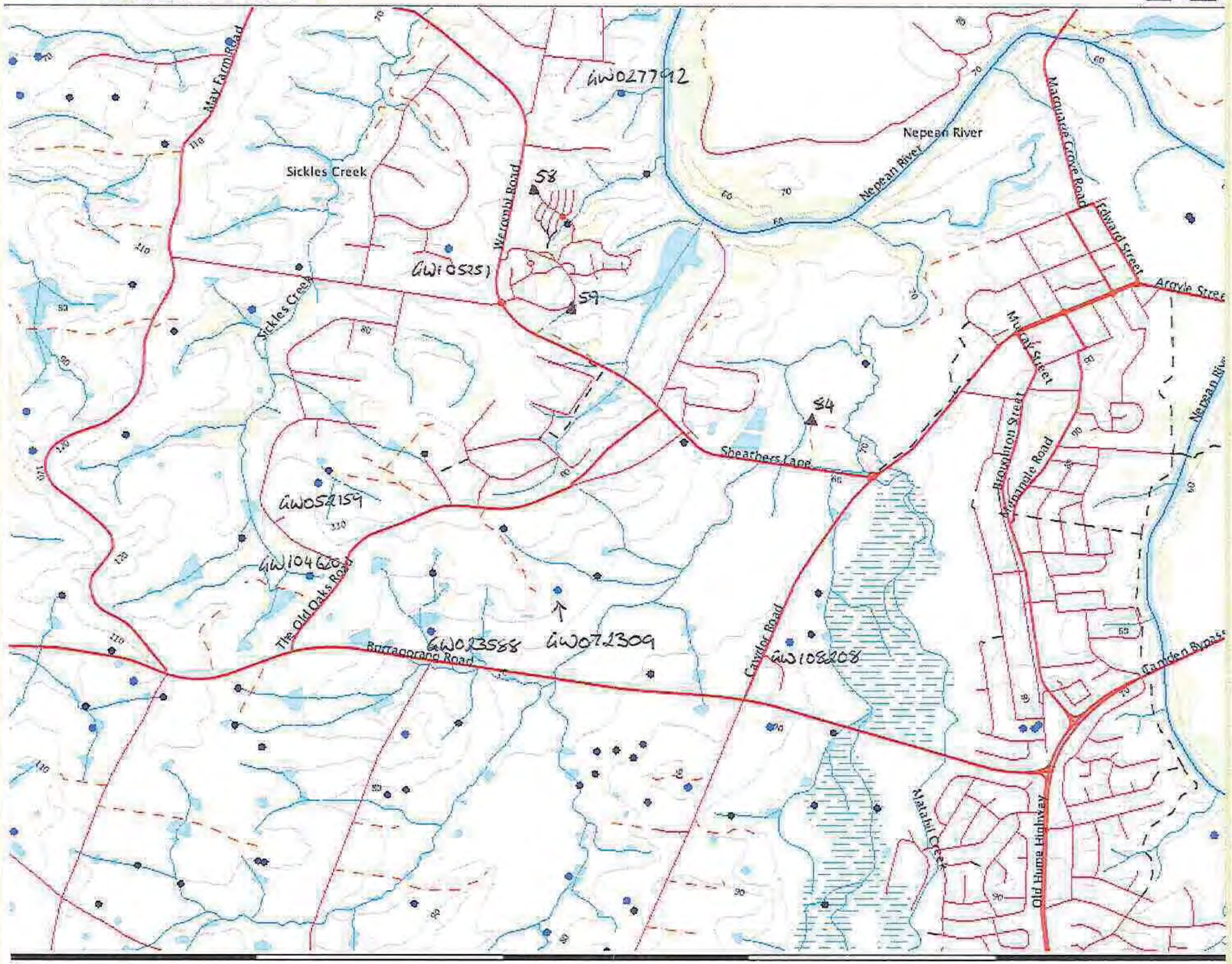
Phase 1 Contamination Assessment and Salinity Assessment
Part Lot 24 DP1086823, 10 Crase Place,
Grasmere, NSW

NR ATLAS Home | Map | Topics | Search | within map

Groundwater (modified)

Add to map | Sort map layers | Find a place | Legend | Map layer control

Map tools



Symbols & map layers

Salinity potential in Western Sydney - 2002:
- Known salinity
- High salinity potential
- Moderate salinity potential
- Very low salinity potential

Dryland salinity occurrences and indicators 1999

Towns

Groundwater Bores

Catchment Management Authority boundaries

Major rivers

Topographic base map:
- Primary/arterial road
- Motorway/freeway
- Railway
- Runway
- Contour
- Background

There are hidden layers - see 'Map layer control' tab

▲ 84 SOIL REPORT & PROFILE NUMBER.

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Groundwater Works Summary

For information on the meaning of fields please see Glossary
Document Generated on Thursday, October 17, 2013

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW023588

Works Details (top)

GROUNDWATER NUMBER	GW023588
LIC-NUM	10WA109654
AUTHORISED-PURPOSES	STOCK
INTENDED-PURPOSES	IRRIGATION
WORK-TYPE	Bore open thru rock
WORK-STATUS	(Unknown)
CONSTRUCTION-METHOD	Cable Tool
OWNER-TYPE	Private
COMMENCE-DATE	
COMPLETION-DATE	1965-01-01
FINAL-DEPTH (metres)	91.40
DRILLED-DEPTH (metres)	91.40
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	BOARDMAN
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	
SALINITY	
YIELD	

Site Details (top)

REGION	10 - SYDNEY SOUTH COAST
RIVER-BASIN	212 - HAWKESBURY RIVER
AREA-DISTRICT	
CMA-MAP	9029-4N
GRID-ZONE	56/1
SCALE	1:25,000
ELEVATION	
ELEVATION-SOURCE	(Unknown)
NORTHING	6227676.00
EASTING	284629.00
LATITUDE	34 4' 10"
LONGITUDE	150 39' 58"
GS-MAP	0075C1

AMG-ZONE	56
COORD-SOURCE	GD.,ACC.MAP
REMARK	

Form-A (top)

COUNTY	CAMDEN
PARISH	CAMDEN
PORTION-LOT-DP	12

Licensed (top)

COUNTY	CAMDEN
PARISH	CAMDEN
PORTION-LOT-DP	7 1078000

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter;
ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

HOLE-NO	PIPE-NO	COMPONENT-CODE	COMPONENT-TYPE	DEPTH-FROM (metres)	DEPTH-TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1	1	Casing	Threaded Steel	-0.60	71.60	127			(Unknown)

Water Bearing Zones (top)

FROM-DEPTH (metres)	TO-DEPTH (metres)	THICKNESS (metres)	ROCK-CAT-DESC	S-W-L	D-D-L	YIELD	TEST-HOLE-DEPTH (metres)	DURATION	SALINITY
5.40	5.40	0.00	(Unknown)			0.00			(Unknown)
27.40	33.40	6.00	Fractured	3.60		1.26			V.Salty
86.50	86.50	0.00	Consolidated (natural flow)	-0.60					invalid code

Drillers Log (top)

FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	5.48	5.48	Clay		
5.48	8.53	3.05	Clay Shale Water Supply		
8.53	70.10	61.57	Shale Water Supply		
70.10	91.44	21.34	Sandstone Water Supply		

Groundwater Works Summary

For information on the meaning of fields please see Glossary
Document Generated on Thursday, October 17, 2013

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW072309

Works Details (top)

GROUNDWATER NUMBER	GW072309
LIC-NUM	
AUTHORISED-PURPOSES	
INTENDED-PURPOSES	FARMING STOCK
WORK-TYPE	Bore
WORK-STATUS	(Unknown)
CONSTRUCTION-METHOD	Rotary Air
OWNER-TYPE	Private
COMMENCE-DATE	
COMPLETION-DATE	1994-07-15
FINAL-DEPTH (metres)	30.00
DRILLED-DEPTH (metres)	30.00
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	
GWMA	
GW-ZONE	
STANDING-WATER-LEVEL	
SALINITY	
YIELD	

Site Details (top)

REGION	10 - SYDNEY SOUTH COAST
RIVER-BASIN	212 - HAWKESBURY RIVER
AREA-DISTRICT	
CMA-MAP	9029-4N
GRID-ZONE	56/1
SCALE	1:25,000
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6227902.00
EASTING	285170.00
LATITUDE	34 4' 3"
LONGITUDE	150 40' 19"
GS-MAP	

AMG-ZONE	56
COORD-SOURCE	
REMARK	

Form-A (top)

COUNTY	CAMDEN
PARISH	CAMDEN
PORTION-LOT-DP	LPT19 DP975392

Licensed (top)

no details

Water Bearing Zones (top)

no details

Drillers Log (top)

FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	1.00	1.00	Soil & Clay		
1.00	10.00	9.00	Brown Shale		
10.00	30.00	20.00	Blue Shale		

Groundwater Works Summary

For information on the meaning of fields please see Glossary
Document Generated on Thursday, October 17, 2013

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW105251

Works Details (top)

GROUNDWATER NUMBER	GW105251
LIC-NUM	10WA111036
AUTHORISED-PURPOSES	DOMESTIC STOCK
INTENDED-PURPOSES	DOMESTIC STOCK
WORK-TYPE	Bore
WORK-STATUS	Supply Obtained
CONSTRUCTION-METHOD	Rotary
OWNER-TYPE	Private
COMMENCE-DATE	
COMPLETION-DATE	2003-10-03
FINAL-DEPTH (metres)	162.00
DRILLED-DEPTH (metres)	162.00
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	ROMEO
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	40.00
SALINITY	1260.00
YIELD	0.30

Site Details (top)

REGION	10 - SYDNEY SOUTH COAST
RIVER-BASIN	212 - HAWKESBURY RIVER
AREA-DISTRICT	
CMA-MAP	9029-4N
GRID-ZONE	56/1
SCALE	1:25,000
ELEVATION	
ELEVATION-SOURCE	(Unknown)
NORTHING	6229667.00
EASTING	284660.00
LATITUDE	34 3' 6"
LONGITUDE	150 40' 1"
GS-MAP	

AMG-ZONE	56
COORD-SOURCE	
REMARK	

Form-A (top)

COUNTY	CAMDEN
PARISH	CAMDEN
PORTION-LOT-DP	116 854483

Licensed (top)

COUNTY	CAMDEN
PARISH	CAMDEN
PORTION-LOT-DP	116 854483

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter;
ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

HOLE-NO	PIPE-NO	COMPONENT-CODE	COMPONENT-TYPE	DEPTH-FROM (metres)	DEPTH-TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	5.50	208			Rotary Air
1		Hole	Hole	5.50	162.00	158			Down Hole Hammer
1	1	Casing	Steel	-0.50	5.50	168.3	158.7		C: -.1-5.5m; Driven into Hole
1	1	Casing	PVC Class 9	-0.50	71.50	140			Screwed and Glued; Suspended in Clamps

Water Bearing Zones (top)

FROM-DEPTH (metres)	TO-DEPTH (metres)	THICKNESS (metres)	ROCK-CAT-DESC	S-W-L	D-D-L	YIELD	TEST-HOLE-DEPTH (metres)	DURATION	SALINITY
28.00	30.00	2.00				0.05	36.00	0.25	3200.00
86.00	89.00	3.00				0.20	90.00	0.25	960.00
109.00	110.50	1.50				0.30	114.00	0.25	940.00
122.00	124.00	2.00		40.00		0.30	162.00	0.25	1260.00

Drillers Log (top)

FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	3.00	3.00	CLAY STIFF		
3.00	5.00	2.00	CLAY SILTY WET		
5.00	65.00	60.00	SHALE HARD		

65.00	70.00	5.00	SANDSTONE GREY
70.00	72.00	2.00	SHALE
72.00	86.00	14.00	SANDSTONE GREY
86.00	89.00	3.00	SANDSTONE FINE QUARTZ
89.00	109.00	20.00	SANDSTONE GREY
109.00	110.50	1.50	SANDSTONE QUARTZ
110.50	114.50	4.00	SANDSTONE GREY
114.50	117.00	2.50	SHALE
117.00	122.00	5.00	SANDSTONE GREY
122.00	124.00	2.00	SANDSTONE QUARTZ
124.00	130.00	6.00	SANDSTONE GREY
130.00	131.00	1.00	SANDSTONE FRACTURED QUARTZ
131.00	139.00	8.00	SANDSTONE GREY
139.00	140.00	1.00	SANDSTONE QUARTZ
140.00	151.00	11.00	SANDSTONE GREY
151.00	162.00	11.00	SHALE

NSW SOIL AND LAND INFORMATION SYSTEM

Soil Technical Report

LOCATION: Grasmere nr Carrington Centennial Hospital

SURVEY: Wollongong II NHT (1004364)

PROFILE: 58

PROFILE MAP DETAILS:

1:100,000 Mapsheet:	WOLLONGONG (9029)	Scale of Mapping:	other
MGA Easting:	285018	MGA Northing:	6230010

SITE DETAILS:

Described by:	Andrew Macleod	Profile Date:	January 29, 2003
Nature of Exposure:	batter	Photo Taken:	
No of Layers:	2		

SOIL AND MAP CODES:

Geology Map Code:	Rwb	Soil Map Code:	bt
Aust. Soil Classification:	Kurosol, Brown, Natric, Haplic, Haplic, All required data available		
Great Soil Group:	Soloth (Solod)	Northcote PPF:	
Soil Taxonomy:		Atlas (Northcote) Code:	
Atlas (A&M) Code:			

TOPOGRAPHY:

Slope:	3%, ?		
Elevation:	90 m	Aspect:	west

LANDFORM:

Site Morphology:	upper slope	Site Process:	90 m
Slope Morphology:	waxing	Local Relief:	very low (9-30 m)
Landform Pattern:		Landform Element:	hillcrest
Microrelief			
Pos in LF Element:		Plan Curvature:	

LITHOLOGY:

Solum PM:	shale	Substrate:	shale m
Rock Outcrop:	nil	Outcrop Same As:	

Substrate Strength:	moderately strong
Weathering & Alteration:	highly weathered rock m
Discontinuities:	
Fragment Amount:	

VEGETATION:

Vegetation Community:	woodland grass u'storey
Growth Form(s):	tree,shrub,tussock grass
Crown Separation Ratio:	
Upper Stratum Height:	

Species:	Dendrobium aemulum (ironbark orchid)

SITE CONDITION:

Ground Cover %:	99	Site Disturbance:	extensive clearing
Current Condition(s):	firm	Expected Dry Condition:	hardsetting

LAND USE:

Site:	volun./native pasture	General Area:	urban,volun./native pasture,improved pasture

HYDROLOGY:

Presence of Free Water:	none	Free Water Depth:	
Run-on:	low	Run-off:	low
Permeability:	slowly permeable	Profile Drainage:	imperfectly drained
Free Water pH:		Free Water Salinity:	

EROSION: none

EROSION HAZARD: moderate

SALINITY: no salting evident

FIELD NOTES: Soil underlain by highly weathered and broken-up shale fragments (C horizon) - greyish coloured Bringelly shale.

PROFILE ADDENDUM:

SOIL DESCRIPTION:

LAYER 0	horizon
Depth:	00.00 - 00.00

COARSE FRAGMENTS:

Type:	not evident	Amount:		Distribution:	Orientation:	Weathering:
Shape:						
Size:						
Type:	not evident	Amount:		Distribution:	Orientation:	Weathering:
Shape:						
Size:						

LAYER 1 A1 horizon
Depth: 00.00 - 00.25

TEXTURE: medium clay loam

COLOUR:
Moist: strong brown (bright brown) (7.5YR 5/6)
Dry:

FIELD CHEMICAL TESTS:
pH: 5 (Raupach)

STRUCTURE:

Grade of Pedality:	moderate pedality	Fabric:	rough-faced peds
Dominant Peds:	10 - 20 mm,polyhedral		
Subdominant Peds:	5 - 10 mm,sub-angular blocky		
Artificial Aggregates:			

COARSE FRAGMENTS:

Type:	not evident	Amount:		Distribution:	Orientation:	Weathering:
Shape:						
Size:						
Type:	not evident	Amount:		Distribution:	Orientation:	Weathering:
Shape:						
Size:						

ROOTS:

<1 mm size:	few (1-10/10x10cm)	1-2 mm size:	few (1-10/10x10cm)	2-5 mm size:	>5 mm size:	

CRACKS AND MACROPORES:

Cracks						
<5 mm width:	evident	5-10 mm width:	evident	10-20 mm width:	20-50 mm width:	>50 mm width:
Macropores						
<1 mm size:		1-2 mm size:		2-5 mm size:	>5 mm size:	

CONSISTENCE:

Degree of Plasticity:		Stickiness:	moderately sticky
Texture Modifier:	increase < 2 Grades	Disruptive Test:	moderately strong force
Shearing Test:	crumbly	Toughness:	

SOIL WATER STATUS: dry

ERODIBILITY TESTS:

Crumb Test:	no change	Bolus Formation:	Field Dilatency:

SOIL ERODIBILTY: low

SAMPLE TAKEN: bulked

BOUNDARY:

Distinctiveness:	abrupt (5-20 mm)	Shape:	smooth

LAYER 2 B2 horizon
Depth: 00.25 - 00.55

TEXTURE: medium clay

COLOUR:
Moist: yellowish brown (dull yellowish brown) (10YR 5/4)
Dry:

FIELD CHEMICAL TESTS:
pH: 5.5 (Raupach)

STRUCTURE:

Grade of Pedality:	strong pedality	Fabric:	rough-faced peds

Dominant Peds: 5 - 10 mm,polyhedral
Subdominant Peds: 2 - 5 mm,sub-angular blocky
Artificial Aggregates:

COARSE FRAGMENTS:

Type:	not evident	Amount:		Distribution:	Orientation: Weathering:
Shape:					
Size:					
Type:	not evident	Amount:		Distribution:	Orientation: Weathering:
Shape:					
Size:					

CONSISTENCE:

Degree of Plasticity:		Stickiness:	very sticky
Texture Modifier:	increase < 2 Grades	Disruptive Test:	moderately strong force
Shearing Test:	crumbly	Toughness:	

SOIL WATER STATUS: dry

ERODIBILITY TESTS:

Crumb Test:	aggregates	Bolus	Field

disperse Formation: Dilatency:

SOIL ERODIBILTY: moderate

SAMPLE TAKEN: disturbed

LAYER NOTES: Most likely sodic. Some silt. Minor dispersion, but doesn't slake.

BOUNDARY:
Distinctiveness: clear (20-50 mm) Shape: smooth

LAYER 99 horizon
Depth: 00.68 -

LABORATORY TESTS:

Sample No:	99
Depth:	00.00 - 00.00 m
Test Results:	
N504.99 [Oven-dry moisture content]:	4.0
N518.99 [Volume expansion]:	7
N517.99_CL [PSA clay - SDS]:	34
N517.99_SI [PSA silt - SDS]:	19
N517.99_FS [PSA fine sand - SDS]:	14
N517.99_CS [PSA coarse sand - SDS]:	2
N517.99_GR [PSA gravel - SDS]:	31
N514.99 [Dispersion percentage]:	25
N513.98 [Emerson aggregate test SCS method]:	3(1)
N550.01 [USCS - lab]:	CL
N504.02_FC [Field Capacity, SWC pressure plate]:	30.3
N504.02_PWP [Permanent Wilt Point, SWC pressure plate]:	14.9
N515.99 [Wind erodible aggregate percentage]:	23
N505.99 [Water repellence field method]:	1
N3A1 [EC of 1:5 soil/water extract]:	0.06
N4A1 [pH of 1:5 soil/water suspension]:	5.3
N4B1 [pH of 1:5 soil/0.01M CaCl2 extract - direct, no stir]:	4.3
N15F1_CEC [CEC by 0.01M silver-thiourea (AgTU)+, no pret.]:	20.9
N15F1_CA [Exchangeable Ca - 0.01M (AgTU)+, no pretreatment]:	3.6
N15F1_MG [Exchangeable Mg - 0.01M (AgTU)+, no pretreatment]:	6.2
N15F1_NA [Exchangeable Na - 0.01M (AgTU)+, no pretreatment]:	0.7
N15F1_K [Exchangeable K - 0.01M (AgTU)+, no pretreatment]:	1.3
N15F1_AL [Exch. bases (Al+), 0.01M (AgTU)+, no pretreat.]:	4.3
N6A1 [Organic carbon - Walkley & Black]:	0.78
N9E1 [Fluoride-extractable P (Bray 1-P) - manual colour]:	2
N9I1 [Phosphate sorption index]:	599
Sample No:	100
Depth:	00.25 - 00.25 m
Test Results:	
N504.99 [Oven-dry moisture content]:	3.6
N518.99 [Volume expansion]:	5

N518.01 [Linear shrinkage]:	11.0
N517.99_CL [PSA clay - SDS]:	32
N517.99_SI [PSA silt - SDS]:	28
N517.99_FS [PSA fine sand - SDS]:	16
N517.99_CS [PSA coarse sand - SDS]:	2
N517.99_GR [PSA gravel - SDS]:	22
N514.99 [Dispersion percentage]:	63
N513.98 [Emerson aggregate test SCS method]:	2(2)
N550.01 [USCS - lab]:	CL
N504.02_FC [Field Capacity, SWC pressure plate]:	32.4
N504.02_PWP [Permanent Wilt Point, SWC pressure plate]:	15.1
N515.99 [Wind erodible aggregate percentage]:	3
N505.99 [Water repellence field method]:	2
N3A1 [EC of 1:5 soil/water extract]:	0.08
N4A1 [pH of 1:5 soil/water suspension]:	5.7
N4B1 [pH of 1:5 soil/0.01M CaCl2 extract - direct, no stir]:	4.2
N15F1_CEC [CEC by 0.01M silver-thiourea (AgTU)+, no pret.]:	20.4
N15F1_CA [Exchangeable Ca - 0.01M (AgTU)+, no pretreatment]:	2.4
N15F1_MG [Exchangeable Mg - 0.01M (AgTU)+, no pretreatment]:	7.6
N15F1_NA [Exchangeable Na - 0.01M (AgTU)+, no pretreatment]:	2.0
N15F1_K [Exchangeable K - 0.01M (AgTU)+, no pretreatment]:	1.7
N15F1_AL [Exch. bases (Al+), 0.01M (AgTU)+, no pretreat.]:	2.0
N6A1 [Organic carbon - Walkley & Black]:	0.60
N9E1 [Fluoride-extractable P (Bray 1-P) - manual colour]:	1
N9I1 [Phosphate sorption index]:	367

For information on laboratory test data and units of measure, please see the SPADE Help page

SALIS Soil Technical Report To contact us email:soils@dnr.nsw.gov.au Fri Oct 18 16:01:47 EST 2013

NSW SOIL AND LAND INFORMATION SYSTEM

Soil Technical Report

LOCATION: Werombi Rd - Lefevres Corner

SURVEY: Wollongong II NHT (1004364)

PROFILE: 59

PROFILE MAP DETAILS:

1:100,000 Mapsheet:	WOLLONGONG (9029)	Scale of Mapping:	other
MGA Easting:	285202	MGA Northing:	6229384

SITE DETAILS:

Described by:	Andrew Macleod	Profile Date:	January 29, 2003
Nature of Exposure:	batter	Photo Taken:	
No of Layers:	2		

SOIL AND MAP CODES:

Geology Map Code:	Rwb	Soil Map Code:	luz
Aust. Soil Classification:	Chromosol, Red, Mesotrophic, Haplic, Haplic, All required data available		
Great Soil Group:	Red Podzolic Soil	Northcote PPF:	
Soil Taxonomy:		Atlas (Northcote) Code:	
Atlas (A&M) Code:			

TOPOGRAPHY:

Slope:	13%, measured		
Elevation:	85 m	Aspect:	south east

LANDFORM:

Site Morphology:	upper slope	Site Process:	85 m
Slope Morphology:	waxing	Local Relief:	low (30-90 m)
Landform Pattern:		Landform Element:	hillslope
Microrelief			
Pos in LF Element:		Plan Curvature:	

LITHOLOGY:

Solum PM:	shale	Substrate:	shale m
Rock Outcrop:	nil	Outcrop Same As:	
Substrate Strength:	moderately strong		
Weathering & Alteration:	highly weathered rock m		
Discontinuities:			

Fragment Amount:

VEGETATION:

Vegetation Community:	woodland grass u'storey
Growth Form(s):	tree,shrub,tussock grass
Crown Separation Ratio:	
Upper Stratum Height:	
Species:	Eucalyptus crebra (narrow-leaved ironbark)
Species:	Eucalyptus moluccana (coastal grey box)

SITE CONDITION:

Ground Cover %:	99	Site Disturbance:	extensive clearing
Current Condition(s):	firm	Expected Dry Condition:	hardsetting

LAND USE:

Site:		General Area:	volun./native pasture,improved pasture

HYDROLOGY:

Presence of Free Water:	none	Free Water Depth:	
Run-on:	low	Run-off:	moderate
Permeability:	slowly permeable	Profile Drainage:	mod. well drained
Free Water pH:		Free Water Salinity:	

EROSION: none

EROSION HAZARD: moderate

SALINITY: no salting evident

FIELD NOTES: ? Might be salty? Shale/sandstone mix. Abundant round ironstone segregations.

PROFILE ADDENDUM:

SOIL DESCRIPTION:

LAYER 1	A1 horizon
Depth:	00.00 - 00.35

TEXTURE: medium silty clay loam

COLOUR:

Moist:	reddish brown (dull reddish brown) (5YR 4/4)
Dry:	

FIELD CHEMICAL TESTS:

FIELD CHEMICAL TESTS:

pH:	6 (Raupach)

STRUCTURE:

Grade of Pedality:	weak pedality	Fabric:	rough-faced peds
Dominant Peds:	2 - 5 mm,polyhedral		
Subdominant Peds:	5 - 10 mm		
Artificial Aggregates:			

ROOTS:

<1 mm size:	common (10-25/10x10cm)	1-2 mm size:	none	2-5 mm size:	>5 mm size:	

CRACKS AND MACROPORES:

Cracks

<5 mm width:	evident	5-10 mm width:	evident	10-20 mm width:	20-50 mm width:	>50 mm width:

Macropores

<1 mm size:	1-2 mm size:	2-5 mm size:	>5 mm size:	

CONSISTENCE:

Degree of Plasticity:		Stickiness:	moderately sticky
Texture Modifier:	increase < 2 Grades	Disruptive Test:	very firm force
Shearing Test:	crumbly	Toughness:	

SOIL WATER STATUS: dry

ERODIBILITY TESTS:

Crumb Test:	no change	Bolus Formation:	Field Dilatency:

SOIL ERODIBILTY: low

SAMPLE TAKEN: bulked

BOUNDARY:

Distinctiveness:	clear (20-50 mm)	Shape:	smooth

LAYER 2 B2 horizon

Depth: 00.35 - 00.70

TEXTURE: medium heavy clay

COLOUR:

Moist:	reddish brown (dull reddish brown) (2.5YR 4/4)
Dry:	

FIELD CHEMICAL TESTS:

pH:	5.5 (Raupach)

STRUCTURE:

Grade of Pedality:	strong pedality	Fabric:	rough-faced peds
Dominant Peds:	10 - 20 mm,sub-angular blocky		
Subdominant Peds:	20 - 50 mm		
Artificial Aggregates:			

COARSE FRAGMENTS:

Type:	ironstone	Amount:	common (10-20%)	Distribution: dispersed	Orientation: reoriented	Weathering: strongly weathered
Shape:	rounded,sub-rounded					
Size:	fine gravel (2-6 mm),gravel (6-20 mm)					

ROOTS:

<1 mm size:	none	1-2 mm size:	few (1-10/10x10cm)	2-5 mm size:	>5 mm size:	

CRACKS AND MACROPORES:

Cracks						
<5 mm width:	evident	5-10 mm width:	evident	10-20 mm width:	20-50 mm width:	>50 mm width:
Macropores						
<1 mm size:		1-2 mm size:		2-5 mm size:	>5 mm size:	

CONSISTENCE:

Degree of Plasticity:		Stickiness:	very sticky
Texture Modifier:	increase < 2 Grades	Disruptive Test:	moderately strong force
Shearing Test:	crumbly	Toughness:	

SOIL WATER STATUS: dry

ERODIBILITY TESTS:

Crumb Test:	aggregates slake	Bolus Formation:	Field Dilatency:

SOIL ERODIBILTY: moderate

SAMPLE TAKEN: disturbed

LAYER NOTES: Fairly abundant iron segregations. - very rounded iron nodules.

BOUNDARY:

Distinctiveness:	clear (20-50 mm)	Shape:	smooth

.....)

LAYER 99 horizon
Depth: 00.90 -

LABORATORY TESTS:

Sample No:	101
Depth:	00.00 - 00.00 m
Test Results:	
N504.99 [Oven-dry moisture content]:	3.2
N518.99 [Volume expansion]:	13
N517.99_CL [PSA clay - SDS]:	35
N517.99_SI [PSA silt - SDS]:	20
N517.99_FS [PSA fine sand - SDS]:	39
N517.99_CS [PSA coarse sand - SDS]:	5
N517.99_GR [PSA gravel - SDS]:	1
N514.99 [Dispersion percentage]:	12
N513.98 [Emerson aggregate test SCS method]:	5
N550.01 [USCS - lab]:	ML
N504.02_FC [Field Capacity, SWC pressure plate]:	29.4
N504.02_PWP [Permanent Wilt Point, SWC pressure plate]:	11.7
N515.99 [Wind erodible aggregate percentage]:	31
N505.99 [Water repellence field method]:	1
N3A1 [EC of 1:5 soil/water extract]:	0.05
N4A1 [pH of 1:5 soil/water suspension]:	6.5
N4B1 [pH of 1:5 soil/0.01M CaCl2 extract - direct, no stir]:	5.7
N15F1_CEC [CEC by 0.01M silver-thiourea (AgTU)+, no pret.]:	13.2
N15F1_CA [Exchangeable Ca - 0.01M (AgTU)+, no pretreatment]:	4.1
N15F1_MG [Exchangeable Mg - 0.01M (AgTU)+, no pretreatment]:	4.8
N15F1_NA [Exchangeable Na - 0.01M (AgTU)+, no pretreatment]:	0.3
N15F1_K [Exchangeable K - 0.01M (AgTU)+, no pretreatment]:	0.9
N15F1_AL [Exch. bases (Al+), 0.01M (AgTU)+, no pretreat.]:	0.5
N6A1 [Organic carbon - Walkley & Black]:	0.75
N9E1 [Fluoride-extractable P (Bray 1-P) - manual colour]:	1
N9I1 [Phosphate sorption index]:	455
Sample No:	102
Depth:	00.35 - 00.35 m
Test Results:	
N504.99 [Oven-dry moisture content]:	3.6
N518.99 [Volume expansion]:	15
N517.99_CL [PSA clay - SDS]:	40
N517.99_SI [PSA silt - SDS]:	24
N517.99_FS [PSA fine sand - SDS]:	27
N517.99_CS [PSA coarse sand - SDS]:	6
N517.99_GR [PSA gravel - SDS]:	3
N516.01_CL [Non-dispersed PSA clay]:	7
N516.01_SI [Non-dispersed PSA silt]:	46
N516.01_FS [Non-dispersed PSA fine sand]:	31
N516.01_CS [Non-dispersed PSA coarse sand]:	13
N516.01_GR [Non-dispersed PSA gravel]:	3
N514.99 [Dispersion percentage]:	10
N513.98 [Emerson aggregate test SCS method]:	5
N550.01 [USCS - lab]:	CL
N504.02_FC [Field Capacity, SWC pressure plate]:	29.3

N504.02_PWP [Permanent Wilt Point, SWC pressure plate]:	13.7
N515.99 [Wind erodible aggregate percentage]:	14
N505.99 [Water repellence field method]:	2
N3A1 [EC of 1:5 soil/water extract]:	0.04
N4A1 [pH of 1:5 soil/water suspension]:	6.1
N4B1 [pH of 1:5 soil/0.01M CaCl2 extract - direct, no stir]:	5.2
N15F1_CEC [CEC by 0.01M silver-thiourea (AgTU)+, no pret.]:	16.4
N15F1_CA [Exchangeable Ca - 0.01M (AgTU)+, no pretreatment]:	2.4
N15F1_MG [Exchangeable Mg - 0.01M (AgTU)+, no pretreatment]:	5.9
N15F1_NA [Exchangeable Na - 0.01M (AgTU)+, no pretreatment]:	0.5
N15F1_K [Exchangeable K - 0.01M (AgTU)+, no pretreatment]:	0.6
N15F1_AL [Exch. bases (Al+), 0.01M (AgTU)+, no pretreat.]:	0.2
N6A1 [Organic carbon - Walkley & Black]:	0.21
N9E1 [Fluoride-extractable P (Bray 1-P) - manual colour]:	2
N9I1 [Phosphate sorption index]:	592

For information on laboratory test data and units of measure, please see the SPADE Help page

SALIS Soil Technical Report To contact us email:soils@dnr.nsw.gov.au Fri Oct 18 15:53:42 EST 2013

LOCATION: Sheathers Lane, near Matahil Ck

SURVEY: Wollongong II NHT (1004364)

PROFILE: 84

PROFILE MAP DETAILS:

1:100,000 Mapsheet:	WOLLONGONG (9029)	Scale of Mapping:	other
MGA Easting:	286257	MGA Northing:	6228779

SITE DETAILS:

Described by:	Andrew Macleod	Profile Date:	February 11, 2003
Nature of Exposure:	auger	Photo Taken:	
No of Layers:	3		

SOIL AND MAP CODES:

Geology Map Code:	Qal	Soil Map Code:	scy
Aust. Soil Classification:	Sodosol, Grey, Mesonatric, Eutrophic, Eutrophic, Sufficient data available		
Great Soil Group:	Gleyed Podzolic Soil	Northcote PPF:	
Soil Taxonomy:		Atlas (Northcote) Code:	
Atlas (A&M) Code:			

TOPOGRAPHY:

Slope:	1%, measured		
Elevation:	65 m	Aspect:	

LANDFORM:

Site Morphology:	flat	Site Process:	65 m
Slope Morphology:		Local Relief:	extremely low (< 9m)
Landform Pattern:		Landform Element:	plain
Microrelief			
Pos in LF Element:		Plan Curvature:	

LITHOLOGY:

Solum PM:	alluvium	Substrate:	alluvium m
Rock Outcrop:	nil	Outcrop Same	

As:

Substrate Strength:
Weathering & Alteration: m
Discontinuities:
Fragment Amount:

VEGETATION:

Vegetation Community: unknown
Growth Form(s): tree,tussock grass,sod grass
Crown Separation Ratio:
Upper Stratum Height:

Species: Casuarina sp.

SITE CONDITION:

Ground Cover %: 99
Site Disturbance: extensive clearing
Current Condition(s): firm
Expected Dry Condition:

LAND USE:

Site: improved pasture
General Area: volun./native pasture,improved pasture

HYDROLOGY:

Presence of Free Water: none
Free Water Depth:
Run-on: low
Run-off: none
Permeability: moderately permeable
Profile Drainage: well drained
Free Water pH:
Free Water Salinity:

EROSION: none

EROSION HAZARD: slight

SALINITY: salting evident

FIELD NOTES: Almost completely cleared for pasture. Floodplain of Matahil Ck. Diagram, site, 20m from channel. Heavy grey/gleyed clay at water table depth. (-50cm)

PROFILE ADDENDUM:

SOIL DESCRIPTION:

LAYER 0 horizon
Depth: 00.00 - 00.00

COARSE FRAGMENTS:

Type:	not evident	Amount:	none	Distribution:	Orientation:	Weathering:
Shape:						
Size:						
Type:	not evident	Amount:	none	Distribution:	Orientation:	Weathering:
Shape:						
Size:						

LAYER 1 A1 horizon
Depth: 00.00 - 00.25

TEXTURE: fine medium clay loam sandy

COLOUR:
Moist: dark greyish brown (greyish yellow brown) (10YR 4/2)
Dry:

FIELD CHEMICAL TESTS:
pH: 6 (Raupach)

STRUCTURE:

Grade of Pedality:	massive	Fabric:	earthy
Dominant Peds:	2 - 5 mm,granular		
Subdominant Peds:	< 2 mm		
Artificial Aggregates:			

COARSE FRAGMENTS:

Type:	not evident	Amount:	none	Distribution:	Orientation:	Weathering:
Shape:						
Size:						
Type:	not evident	Amount:	none	Distribution:	Orientation:	Weathering:
Shape:						
Size:						

ROOTS:

<1 mm size:	common (10-25/10x10cm)	1-2 mm size:	none	2-5 mm size:	>5 mm size:

CONSISTENCE:

Degree of Plasticity:		Stickiness:	slightly sticky
Texture Modifier:	no change	Disruptive Test:	very weak force
Shearing Test:	crumbly	Toughness:	

SOIL WATER STATUS: moderately moist

ERODIBILITY TESTS:

Crumb Test:	no change	Bolus Formation:	Field Dilatency:

SOIL ERODIBILTY: low

SAMPLE TAKEN: bulked

BOUNDARY:

Distinctiveness:	abrupt (5-20 mm)	Shape:	irregular

LAYER 2 B1 horizon
Depth: 00.25 - 00.45

TEXTURE: light clay

COLOUR:

Moist:	very dark greyish brown (brownish black) (10YR 3/2)
Dry:	

FIELD CHEMICAL TESTS:

pH:	6 (Raupach)

STRUCTURE:

Grade of Pedality:	weak pedality	Fabric:	rough-faced peds
Dominant Peds:	2 - 5 mm,polyhedral		
Subdominant Peds:	< 2 mm,granular		
Artificial Aggregates:			

COARSE FRAGMENTS:

Type:	not evident	Amount:	none	Distribution:	Orientation:	Weathering:
Shape:						
Size:						
Type:	not evident	Amount:	none	Distribution:	Orientation:	Weathering:
Shape:						
Size:						

ROOTS:

<1 mm size:	few (1-10/10x10cm)	1-2 mm size:	none	2-5 mm size:	>5 mm size:

CONSISTENCE:

Degree of Plasticity:		Stickiness:	moderately sticky
Texture Modifier:	no change	Disruptive Test:	moderately weak force
Shearing Test:	crumbly	Toughness:	

SOIL WATER STATUS: moderately moist

ERODIBILITY TESTS:

Crumb Test:	no change	Bolus Formation:	Field Dilatency:

SOIL ERODIBILTY: low

SAMPLE TAKEN: disturbed

BOUNDARY:

Distinctiveness:	clear (20-50 mm)	Shape:	smooth

LAYER 3 B2 horizon
Depth: 00.45 - 00.90

TEXTURE: heavy clay

COLOUR:
Moist: dark grey (brownish grey) (10YR 4/1)
Dry:

FIELD CHEMICAL TESTS:
pH: 9 (Raupach)

STRUCTURE:

Grade of Pedality:	strong pedality	Fabric:	smooth-faced peds
Dominant Peds:	20 - 50 mm,sub-angular blocky		
Subdominant Peds:	10 - 20 mm		
Artificial Aggregates:			

COARSE FRAGMENTS:

Type:	not evident	Amount:	none	Distribution:	Orientation:	Weathering:
Shape:						
Size:						
Type:	not evident	Amount:	none	Distribution:	Orientation:	Weathering:
Shape:						
Size:						

ROOTS:

<1 mm size:	none	1-2 mm size:	none	2-5 mm size:	>5 mm size:

CONSISTENCE:

Degree of Plasticity:		Stickiness:	moderately sticky
Texture Modifier:	no change	Disruptive Test:	moderately strong force
Shearing Test:	plastic	Toughness:	

SOIL WATER STATUS: moderately moist

ERODIBILITY TESTS:

Crumb Test:	aggregates slake	Bolus Formation:	Field Dilatency:

SOIL ERODIBILTY: high

SAMPLE TAKEN: disturbed

LAYER NOTES: Very likely saline. Greyish, moist. Not mottled

BOUNDARY:
Distinctiveness: abrupt (5-20 mm) Shape: irregular

LAYER 99 horizon
Depth: -

LABORATORY TESTS:

Sample No:	151
Depth:	00.00 - 00.00 m
Test Results:	
N504.99 [Oven-dry moisture content]:	4.6
N518.99 [Volume expansion]:	18
N517.99_CL [PSA clay - SDS]:	26
N517.99_SI [PSA silt - SDS]:	35
N517.99_FS [PSA fine sand - SDS]:	34
N517.99_CS [PSA coarse sand - SDS]:	2
N517.99_GR [PSA gravel - SDS]:	3
N514.99 [Dispersion percentage]:	22
N513.98 [Emerson aggregate test SCS method]:	3(1)
N550.01 [USCS - lab]:	CL
N504.02_FC [Field Capacity, SWC pressure plate]:	38.6
N504.02_PWP [Permanent Wilt Point, SWC pressure plate]:	16.3
N515.99 [Wind erodible aggregate percentage]:	25
N505.99 [Water repellence field method]:	0
N3A1 [EC of 1:5 soil/water extract]:	0.11
N4A1 [pH of 1:5 soil/water suspension]:	6.7
N4B1 [pH of 1:5 soil/0.01M CaCl2 extract - direct, no stir]:	5.7
N15F1_CEC [CEC by 0.01M silver-thiourea (AgTU)+, no pret.]:	24.1
N15F1_CA [Exchangeable Ca - 0.01M (AgTU)+, no pretreatment]:	11.1
N15F1_MG [Exchangeable Mg - 0.01M (AgTU)+, no pretreatment]:	7.4
N15F1_NA [Exchangeable Na - 0.01M (AgTU)+, no pretreatment]:	0.5
N15F1_K [Exchangeable K - 0.01M (AgTU)+, no pretreatment]:	0.9
N15F1_AL [Exch. bases (Al+), 0.01M (AgTU)+, no pretreat.]:	0.0
N6A1 [Organic carbon - Walkley & Black]:	2.52
N9E1 [Fluoride-extractable P (Bray 1-P) - manual colour]:	2
N9I1 [Phosphate sorption index]:	265
Sample No:	152
Depth:	00.25 - 00.25 m
Test Results:	
N504.99 [Oven-dry moisture content]:	5.1
N518.99 [Volume expansion]:	8
N517.99_CL [PSA clay - SDS]:	29
N517.99_SI [PSA silt - SDS]:	35
N517.99_FS [PSA fine sand - SDS]:	19
N517.99_CS [PSA coarse sand - SDS]:	3
N517.99_GR [PSA gravel - SDS]:	14
N514.99 [Dispersion percentage]:	31

N513.98 [Emerson aggregate test SCS method]:	3(4)
N550.01 [USCS - lab]:	CL
N504.02_FC [Field Capacity, SWC pressure plate]:	37.8
N504.02_PWP [Permanent Wilt Point, SWC pressure plate]:	16.9
N515.99 [Wind erodible aggregate percentage]:	22
N505.99 [Water repellence field method]:	0
N3A1 [EC of 1:5 soil/water extract]:	0.33
N4A1 [pH of 1:5 soil/water suspension]:	7.4
N4B1 [pH of 1:5 soil/0.01M CaCl2 extract - direct, no stir]:	6.1
N15F1_CEC [CEC by 0.01M silver-thiourea (AgTU)+, no pret.]:	28.6
N15F1_CA [Exchangeable Ca - 0.01M (AgTU)+, no pretreatment]:	11.2
N15F1_MG [Exchangeable Mg - 0.01M (AgTU)+, no pretreatment]:	8.8
N15F1_NA [Exchangeable Na - 0.01M (AgTU)+, no pretreatment]:	2.7
N15F1_K [Exchangeable K - 0.01M (AgTU)+, no pretreatment]:	0.5
N15F1_AL [Exch. bases (Al+), 0.01M (AgTU)+, no pretreat.]:	0.0
N6A1 [Organic carbon - Walkley & Black]:	1.96
N9E1 [Fluoride-extractable P (Bray 1-P) - manual colour]:	2
N9I1 [Phosphate sorption index]:	367
Sample No:	153
Depth:	00.45 - 00.45 m
Test Results:	

N504.99 [Oven-dry moisture content]:	7.3
N518.99 [Volume expansion]:	fs
N518.01 [Linear shrinkage]:	19.0
N517.99_CL [PSA clay - SDS]:	48
N517.99_SI [PSA silt - SDS]:	26
N517.99_FS [PSA fine sand - SDS]:	3
N517.99_CS [PSA coarse sand - SDS]:	2
N517.99_GR [PSA gravel - SDS]:	21
N516.01_CL [Non-dispersed PSA clay]:	22
N516.01_SI [Non-dispersed PSA silt]:	41
N516.01_FS [Non-dispersed PSA fine sand]:	28
N516.01_CS [Non-dispersed PSA coarse sand]:	6
N516.01_GR [Non-dispersed PSA gravel]:	3
N514.99 [Dispersion percentage]:	89
N513.98 [Emerson aggregate test SCS method]:	2(1)
N550.01 [USCS - lab]:	CH
N504.02_FC [Field Capacity, SWC pressure plate]:	48.9
N504.02_PWP [Permanent Wilt Point, SWC pressure plate]:	22.2
N515.99 [Wind erodible aggregate percentage]:	0
N505.99 [Water repellence field method]:	1
N3A1 [EC of 1:5 soil/water extract]:	1.25
N4A1 [pH of 1:5 soil/water suspension]:	8.7
N4B1 [pH of 1:5 soil/0.01M CaCl2 extract - direct, no stir]:	7.5
N15F1_CEC [CEC by 0.01M silver-thiourea (AgTU)+, no pret.]:	42.3
N15F1_CA [Exchangeable Ca - 0.01M (AgTU)+, no pretreatment]:	7.0
N15F1_MG [Exchangeable Mg - 0.01M (AgTU)+, no pretreatment]:	13.5
N15F1_NA [Exchangeable Na - 0.01M (AgTU)+, no pretreatment]:	13.0
N15F1_K [Exchangeable K - 0.01M (AgTU)+, no pretreatment]:	0.6
N15F1_AL [Exch. bases (Al+), 0.01M (AgTU)+, no pretreat.]:	0.0
N6A1 [Organic carbon - Walkley & Black]:	0.83
N9E1 [Fluoride-extractable P (Bray 1-P) - manual colour]:	5
N9I1 [Phosphate sorption index]:	518

For information on laboratory test data and units of measure, please see the SPADE Help page

SALIS Soil Technical Report To contact us email:soils@dnr.nsw.gov.au Fri Oct 18 15:58:25 EST 2013

Appendix B
Climate Data

Phase 1 Contamination Assessment and Salinity Assessment
Part Lot 24 DP1086823, 10 Crase Place,
Grasmere, NSW

Figure B-1: Camden Airport Weather Station Relative to Site

Australian Government
Bureau of Meteorology

Climate statistics for Australian locations

Monthly climate statistics

All years of record

Site name: CAMDEN AIRPORT AWS **Site number:** 068192 **Commenced:** 1943
Latitude: 34.04° S **Longitude:** 150.69° E **Elevation:** 74 m **Operational status:** Open
Map

View: Main statistics All available Period: Use all years of data Text size: Normal Large

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	
Temperature															
Maximum temperature															
Mean maximum temperature (°C)	29.5	28.6	26.7	23.8	20.5	17.7	17.2	19.0	21.9	24.1	26.1	28.4	23.6	36	1971 2013
Highest temperature (°C)	46.4	43.2	41.0	38.5	27.5	24.9	25.4	30.2	36.0	40.5	42.6	43.1	46.4	36	1971 2013
Date	18 Jan 2013	21 Feb 1980	09 Mar 1983	04 Apr 1986	03 May 2007	01 Jun 1976	22 Jul 2009	30 Aug 1982	30 Sep 1980	21 Oct 1988	25 Nov 1982	17 Dec 2009	18 Jan 2013		
Lowest maximum temperature (°C)	17.9	17.0	17.0	16.6	12.0	10.8	9.6	11.2	13.4	13.2	14.0	16.0	9.6	36	1971 2013
Date	13 Jan 1972	07 Feb 1973	02 Mar 1987	29 Apr 2009	30 May 2000	12 Jun 1975	20 Jul 1983	22 Aug 2008	01 Sep 1987	16 Oct 1976	16 Nov 1988	10 Dec 2002	20 Jul 1983		
Decile 1 maximum temperature (°C)	23.5	22.5	22.0	19.8	17.2	15.0	14.5	15.8	17.2	18.5	20.0	22.2		38	1971 2013
Decile 9 maximum temperature(°C)	36.0	35.0	31.7	27.8	23.9	20.3	20.0	22.7	27.5	30.6	33.0	35.5		38	1971 2013
Mean number of days ≥ 30 °C	13.2	10.2	5.9	0.9	0.0	0.0	0.0	0.0	1.1	4.0	6.4	10.5	52.2	36	1971 2013
Mean number of days ≥ 35 °C	4.6	2.9	0.8	0.0	0.0	0.0	0.0	0.0	0.1	0.5	1.6	3.4	13.9	36	1971 2013
Mean number of days ≥ 40 °C	1.1	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.3	2.4	36	1971 2013
Minimum temperature															
Mean minimum temperature (°C)	16.8	16.8	14.8	11.0	7.0	4.5	3.0	3.8	6.7	9.9	12.9	15.1	10.2	36	1971 2013
Lowest temperature (°C)	7.9	7.2	5.9	-0.7	-2.2	-5.4	-6.0	-4.0	-1.8	1.3	3.8	5.7	-6.0	36	1971 2013
Date	02 Jan 1972	23 Feb 1993	31 Mar 2008	23 Apr 2006	29 May 1987	26 Jun 1986	12 Jul 2002	02 Aug 1986	01 Sep 2012	01 Oct 1982	19 Nov 1977	19 Dec 2005	12 Jul 2002		
Highest minimum temperature (°C)	23.5	24.0	22.0	19.4	17.5	15.0	14.5	15.0	16.3	18.6	21.7	24.0	24.0	36	1971 2013
Date	25 Jan 1982	03 Feb 2011	19 Mar 2000	10 Apr 1978	01 May 1973	08 Jun 1991	06 Jul 1988	17 Aug 1988	23 Sep 2003	29 Oct 1988	21 Nov 2009	23 Dec 2000	23 Dec 2000		
Decile 1 minimum temperature (°C)	13.0	13.0	10.6	6.2	2.0	-0.5	-1.3	-0.5	2.0	5.0	8.6	11.0		37	1971 2013
Decile 9 minimum temperature (°C)	20.0	20.0	18.3	15.3	12.3	9.9	8.0	9.0	11.5	14.2	17.0	18.7		37	1971 2013
Mean number of days ≤ 2 °C	0.0	0.0	0.0	0.2	3.4	10.1	14.2	11.6	3.4	0.2	0.0	0.0	43.1	36	1971 2013
Mean number of days ≤ 0 °C	0.0	0.0	0.0	0.0	0.9	4.5	7.7	4.4	0.5	0.0	0.0	0.0	18.0	36	1971 2013
Ground surface temperature															
Mean daily ground minimum temperature (°C)															
Lowest ground temperature (°C)															
Date															
Mean number of days ground min. temp. ≤ -1 °C															

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	
Rainfall															
Mean rainfall (mm)	77.9	101.6	87.7	66.9	57.6	61.6	37.9	41.4	39.5	65.3	77.0	54.9	767.2	39	1943 2013
Highest rainfall (mm)	263.6	421.8	343.6	338.2	309.3	304.4	143.1	276.4	148.2	242.8	167.2	162.7	1261.2	39	1943 2013
Date	1978	1990	1978	1988	1943	1991	1984	1986	1982	1987	2007	1991	1978		
Lowest rainfall (mm)	0.0	12.8	0.0	2.3	0.8	2.0	0.2	0.6	1.6	0.3	8.8	0.0	446.7	39	1943 2013
Date	1960	1944	1943	1980	2008	2001	1977	1982	1989	1988	1982	1974	1979		
Decile 1 rainfall (mm)	18.5	21.2	18.1	10.2	5.2	7.2	8.6	4.5	6.7	9.9	18.7	17.1	502.6	39	1943 2013
Decile 5 (median) rainfall (mm)	58.4	79.4	63.4	36.6	41.0	40.6	29.0	19.8	36.0	47.8	70.5	41.2	796.8	39	1943 2013
Decile 9 rainfall (mm)	147.8	255.7	173.4	143.1	128.1	160.2	73.2	103.5	72.3	155.6	149.1	96.2	1060.3	39	1943 2013
Highest daily rainfall (mm)	125.2	156.0	99.4	108.0	89.4	135.0	83.0	142.6	61.4	109.2	66.4	70.4	156.0	39	1943 2013
Date	29 Jan 2013	03 Feb 1990	20 Mar 1978	30 Apr 1988	01 May 1988	11 Jun 1991	06 Jul 1988	06 Aug 1986	21 Sep 1982	25 Oct 1987	03 Nov 2007	13 Dec 2008	03 Feb 1990		
Mean number of days of rain	10.2	10.9	10.3	9.2	8.7	8.7	8.1	7.6	7.9	10.0	10.6	9.2	111.4	39	1943 2013
Mean number of days of rain ≥ 1 mm	4.5	4.7	4.4	3.9	3.5	3.3	2.9	2.8	3.1	4.2	4.6	4.1	46.0	39	1943 2013
Mean number of days of rain ≥ 10 mm	1.4	1.7	1.6	1.1	1.1	1.1	0.6	0.5	0.7	1.1	1.4	1.1	13.4	39	1943 2013
Mean number of days of rain ≥ 25 mm	0.4	0.6	0.4	0.4	0.3	0.4	0.2	0.3	0.2	0.3	0.5	0.2	4.2	39	1943 2013

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	
Other daily elements															
Mean daily wind run (km)	185	168	144	137	128	139	157	177	195	177	187	187	165	10	2003 2013
Maximum wind gust speed (km/h)	91	102	109	68	74	80	87	93	109	83	102	76	109	10	2003 2013
Date	14 Jan 2005	14 Feb 2005	05 Mar 2007	03 Apr 2009	07 May 2006	19 Jun 2004	05 Jul 2007	01 Aug 2008	24 Sep 2006	06 Oct 2008	10 Nov 2003	17 Dec 2005	24 Sep 2006		
Mean daily sunshine (hours)															

Mean daily solar exposure (MJ/m^2)	22.4	19.1	16.8	13.9	10.5	8.7	9.8	13.3	17.1	20.3	21.5	23.2	16.4	24	1990 2013
Mean number of clear days	5.9	4.6	6.6	7.8	8.0	9.2	10.1	11.2	9.2	7.1	6.1	6.1	91.9	26	1943 2010
Mean number of cloudy days	10.8	10.2	9.6	8.8	8.9	7.2	6.4	5.0	6.5	9.1	9.5	8.6	100.6	26	1943 2010
Mean daily evaporation (mm)															

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	
9 am conditions															
Mean 9am temperature (°C)	21.6	20.9	19.6	16.9	13.0	9.6	8.6	10.7	14.6	17.7	18.7	20.9	16.1	37	1943 2010
Mean 9am w et-bulb temperature (°C)	18.5	18.4	17.1	14.6	11.5	8.3	7.1	8.6	11.4	13.8	15.4	17.2	13.5	33	1943 2010
Mean 9am dew -point temperature (°C)	16.1	16.7	15.3	12.5	9.5	6.4	5.1	5.6	7.8	10.0	12.5	14.2	11.0	36	1943 2010
Mean 9am relative humidity (%)	72	78	77	77	81	82	81	73	66	64	69	68	74	36	1943 2010
Mean 9am cloud cover (oktas)	5.0	4.8	4.5	4.1	4.1	3.7	3.4	3.1	3.7	4.3	4.5	4.5	4.1	26	1943 2010
Mean 9am w ind speed (km/h)	6.5	5.5	6.0	6.3	5.4	5.9	5.8	7.9	9.0	9.3	8.0	7.9	7.0	35	1943 2010

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	
3 pm conditions															
Mean 3pm temperature (°C)	27.7	26.9	25.4	22.5	19.3	16.5	16.0	17.7	20.3	22.4	24.3	26.8	22.2	37	1943 2010
Mean 3pm w et-bulb temperature (°C)	20.0	19.8	18.8	16.3	14.0	11.6	10.8	11.4	13.4	15.5	17.5	18.7	15.6	33	1943 2010
Mean 3pm dew -point temperature (°C)	14.7	15.1	13.8	11.0	8.5	6.2	4.7	4.0	6.2	8.8	11.6	12.5	9.8	36	1943 2010
Mean 3pm relative humidity (%)	49	52	52	52	52	53	50	43	44	47	50	46	49	36	1943 2010
Mean 3pm cloud cover (oktas)	4.7	5.1	4.9	4.6	4.5	4.4	4.2	3.7	4.2	4.7	4.9	4.7	4.6	26	1943 2010
Mean 3pm w ind speed (km/h)	17.2	15.5	15.0	13.8	12.5	13.9	14.6	16.8	18.1	17.7	17.7	18.5	15.9	33	1943 2010

red = highest value blue = lowest value

Product IDCJCM0037 Prepared at Thu 31 Oct 2013 01:00:41 AM EST

Monthly statistics are only included if there are more than 10 years of data. The number of years (provided in the 2nd last column of the table) may differ between elements if the observing program at the site changed. More detailed data for individual sites can be obtained by contacting the Bureau.

Related Links

- This page URL: http://www.bom.gov.au/climate/averages/tables/cw_068192_All.shtml
- Summary statistics and locational map for this site: http://www.bom.gov.au/climate/averages/tables/cw_068192.shtml
- About climate averages: http://www.bom.gov.au/climate/cdo/about/about-stats.shtml
- Data file (csv): http://www.bom.gov.au/clim_data/cdio/tables/text/IDCJCM0037_068192.csv
- Climate averages home page URL: http://www.bom.gov.au/climate/data/index.shtml
- Bureau of Meteorology website: http://www.bom.gov.au

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Appendix C
Aerial Photograph Review

Phase 1 Contamination Assessment and Salinity Assessment
Part Lot 24 DP1086823, 10 Crase Place,
Grasmere, NSW

C AERIAL PHOTOGRAPH REVIEW

Selected aerial photographs dating back to 1954 were reviewed by Coffey for preparation of this report. Table C-1 summarises the main relevant observations made during the review.

Table C-1: Aerial Photograph Review

DATE	OBSERVATIONS
16/11/1954 (black & white)	**On Site:** Vacant grazing land. No trees evident. **Off Site:** Vacant grazing land. Remnant bushland north of Werombi Road. A structure is evident in the northeastern corner of Lot 24, close to the intersection of Werombi Road and The Old Oaks Road. The structure appears to be accessible from The Old Oaks Road, where a faint access leads from this road to the structure. Two dams are located adjacent to the southern and western site boundaries where a watercourse appears to flow between the dams. The watercourse continues north of the second dam towards Werombi Road.
7/10/1965 (black & white)	**On Site:** Site features are generally similar to those observed 1954, except for some minor ground disturbance. A line of disturbed ground extending from the southern boundary towards watercourse adjacent the site's western boundary. **Off Site:** The structure previously observed in the northeastern corner of Lot 24 is no longer evident. A second dam has been constructed northwest of the site, between the existing one west of the site and Werombi Road. Apart from water level changes in existing dams and some minor development (residential dwellings), the remaining areas have remained relatively unchanged since 1954.
30/11/1975 (black & white)	**On Site:** Unchanged since previous aerial photograph. **Off Site:** A third dam has been constructed northwest of the site, between the dam constructed in 1965 and Werombi Road. This dam is approximately one third the size of the other dams. The sewerage treatment plant is evident on Sheathers Lane, northeast of the Site. A residential dwelling and two large warehouse type structures are evident southeast of the site. Remaining areas appear relatively unchanged.
8/10/1984 (Colour)	**On Site:** Some very small objects dispersed throughout the Site (and remaining parts of Lot 24). These objects could be livestock. Trees and shrubs are evident along parts of the southern and eastern site boundaries. Remaining areas appear unchanged. **Off Site:** Some of the dams have bright green colouration forming along dam edges suggesting algal bloom. Apart from changes in vegetation remaining areas appear unchanged.

DATE	OBSERVATIONS
4/1/1994 (Colour)	**On Site:** A very small object is evident in the southeastern portion of the site. Remaining areas appear unchanged. **Off Site:** The green colouration previously observed in dams is no longer apparent. Apart from minor changes, the general surrounding areas appear similar to the previous photograph.
21/7/2002 (Colour) Google Earth Image	**On Site:** The site continues to remain undeveloped. The very small objective observed in 1994 is no longer evident. The grass appears brown suggesting a period of low rainfall. **Off Site**: The general area is still predominantly vacant grazing land however the area continues to develop slowly with new residential dwellings appearing.
11/3/2007 (Colour) Google Earth Image	**On Site:** A cul-de-sac extending from the southern boundary into the site has been constructed (Crase Place). An access track extends north from the cul-de-sac through the site where it appears to terminate, offsite, at a circular area which appears to be a slight depression or higher moisture content. A second feature extending from the cul-de-sac appears to be a storm water drain that directs water west from the road towards the watercourse. Three small objects positioned along the length of this drain are also evident. This corresponds to a drainage easement marked on title diagrams. **Off Site**: Exposed ground is evident is areas north of the site. Near these areas are either slight depressions or high moisture content (as previously discussed). These areas are located adjacent to the dams. White efflorescence was observed in areas immediately surrounding dams located west of the site. This white feature may also be associated with hydromulching as vegetation growth substantially increases in later years. The third dam located northwest of the site and adjacent to Werombi Road is no longer evident. A network of roads servicing a new subdivision is evident in areas south and west of the site. The realignment of The Old Oaks Road appears under construction.
2/11/2012 (Colour) Google Earth Image	**On Site:** Except for the cul-de-sac, the site continues to remain undeveloped. The remaining features observed in the previous aerial photograph have faded. Sporadic growth of trees and/or shrubs is evident throughout and north of the site. **Off Site**: The exposed ground and access track extending north of the cul-de-sac are no longer evident. Extensive growth of tree and/or shrubs is evident in along the watercourse and areas surrounding the dams located west and north of the site. Residential developments continue in areas surrounding the site. The former alignment of The Old Oaks Road has been blocked with a fill mound at the intersection with Werombi Road. The realignment of The Old Oaks Road appears complete.

AERIAL PHOTOGRAPH 1954

AERIAL PHOTOGRAPH 1965

revision	description	drawn	approved	date

drawn	LZ
approved	SR
date	1.10.13
scale	1:2000
original size	**A3**

coffey

client: SITE PLUS

project: PHASE 1 CONTAMINATION ASSESSMENT & SALINITY ASSESSMENT PART LOT 24 DP1086823, 10 CRASE PLACE, GRASMERE, NSW

title: AERIAL PHOTOGRAPHS - 1954 AND 1965

project no: ENAUWOLL04150AA-R01

figure no: C-1

AERIAL PHOTOGRAPHY 1974

AERIAL PHOTOGRAPHY 1984

revision	description	drawn	approved	date

drawn	LZ
approved	SR
date	1.10.13
scale	1:1250
original size	A3

coffey

client: SITE PLUS

project: PHASE 1 CONTAMINATION ASSESSMENT & SALINITY ASSESSMENT LOT 24 DP1086823, CRASE PLACE, GRASMERE, NSW

title: AERIAL PHOTOGRAPHS - 1974 AND 1984

project no: ENAUWOLL04150AA-R01

figure no: C-2

AERIAL PHOTOGRAPH 1994

AERIAL PHOTOGRAPH 2002

AERIAL IMAGE SOURCE: GOOGLE EARTH PRO 6.0.1
AERIAL IMAGE ©: SINCLAIR KNIGHT MERZ 2013

revision	description	drawn	approved	date

drawn	LZ
approved	SR
date	1.10.13
scale	1:2222
original size	**A3**

coffey

client: SITE PLUS

project: PHASE 1 CONTAMINATION ASSESSMENT & SALINITY ASSESSMENT PART LOT 24 DP1086823, 10 CRASE PLACE, GRASMERE, NSW

title: AERIAL PHOTOGRAPHS - 1994 AND 2002

project no: ENAUWOLL04150AA-R01

figure no: C-3

AERIAL PHOTOGRAPH 2007

AERIAL IMAGE SOURCE: GOOGLE EARTH PRO 6.0.1

AERIAL IMAGE ©: SINCLAIR KNIGHT MERZ 2013

AERIAL PHOTOGRAPH 2012

AERIAL IMAGE SOURCE: GOOGLE EARTH PRO 6.0.1

AERIAL IMAGE ©: SINCLAIR KNIGHT MERZ 2013

revision	description	drawn	approved	date

drawn	LZ
approved	SR
date	1.10.13
scale	1:5000
original size	**A3**

coffey

client: SITE PLUS

project: PHASE 1 CONTAMINATION ASSESSMENT & SALINITY ASSESSMENT PART LOT 24 DP1086823, 10 CRASE PLACE, GRASMERE, NSW

title: AERIAL PHOTOGRAPH - 2007 AND 2012

project no: ENAUWOLL04150AA-R01

figure no: C-4

Appendix D
Section 149 Planning Certificate and Development Applications

Phase 1 Contamination Assessment and Salinity Assessment
Part Lot 24 DP1086823, 10 Crase Place,
Grasmere, NSW

Camden Council
37 John Street, Camden NSW 2570 DX 25807
PO Box 183, Camden 2570 ABN: 31 117 341 764
Telephone: 02 4654 7777 Fax: 02 4654 7829
Email: mail@camden.nsw.gov.au

PLANNING CERTIFICATE UNDER SECTION 149 ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979

Applicant: Coffey Environments Australia Pty Ltd
PO Box 1651
WOLLONGONG NSW 2520

Certificate number:	20132647
Receipt number:	997629
Property number:	1151652
Certificate date:	14/10/2013
Certificate fee:	$133.00
Applicant's reference:	ENAUWOLL04150AA

DESCRIPTION OF PROPERTY

Title: LOT: 24 DP: 1086823
Property: 10 Crase Place GRASMERE 2570

BACKGROUND INFORMATION

This certificate provides information on how a property (such as land, a house, commercial building, etc) may be used and the limits on its development. The certificates contains information Council is aware of through records and environmental plans with data supplied by the State Government. The details contained in this certificate are limited to that required by Section 149 of the Environmental Planning and Assessment Act.

1. NAMES OF RELEVANT PLANNING INSTRUMENTS AND DCPs

(1) The name of each environmental planning instrument that applies to the carrying out of development on the land.

Camden Local Environmental Plan 2010.

State Environmental Planning Policy No 6 - Number Of Storeys In Buildings.

State Environmental Planning Policy No 30 - Intensive Agriculture

State Environmental Planning Policy No 4 - Development Without Consent and Miscellaneous Exempt and Complying Development (clause 6 parts 3 and 4)

State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004.

State Environmental Planning Policy No 19 - Bushland In Urban Areas.

State Environmental Planning Policy No 21 - Caravan Parks.

State Environmental Planning Policy No 22 - Shops And Commercial Premises.

State Environmental Planning Policy No 33 - Hazardous And Offensive Development.

State Environmental Planning Policy No 55 - Remediation Of Land.

State Environmental Planning Policy No 65 - Design Quality of Residential Flat Development.

State Environmental Planning Policy No 64 - Advertising and Signage.

State Environmental Planning Policy (Building Sustainability Index: Basix) 2004.

State Environmental Planning Policy (Temporary Structures) 2007.

State Environmental Planning Policy (Infrastructure) 2007.

State Environmental Planning Policy No 50 - Canal Estate Development.

State Environmental Planning Policy (Major Development) 2005.

State Environmental Planning Policy No 62 - Sustainable Aquaculture.

State Environmental Planning Policy No 70 - Affordable Housing (Revised Schemes).

State Environmental Planning Policy - (Affordable Rental Housing) 2009.

State Environmental Planning Policy - (Exempt and Complying Development Codes) 2008.

State Environmental Planning Policy - (Mining, Petroleum Production and Extractive Industries) 2007.

State Environmental Planning Policy - (State and Regional Development) 2011.

State Environmental Planning Policy - (Urban Renewal) 2010.

Sydney Regional Environmental Plan No 9 - Extractive Industry (No 2 - 1995).

Sydney Regional Environmental Plan No 20 - Hawkesbury-Nepean River (No 2 - 1997).

(2) The name of each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act (unless the Director-General has notified the Council that the making of the proposed instrument has been deferred indefinitely or has not been approved.

The subject land is not affected by an exhibited Draft Local Environmental Plan.

Draft State Environmental Planning Policy - (Competition) 2010.

(3) The name of each development control plan that applies to the carrying out of development on the land.

Camden Development Control Plan (DCP) 2011 was adopted by Council on 8 February 2011, and takes effect on 16 February 2011. This DCP (as amended) applies to all land within the Camden Local Government Area.

2. ZONING AND LAND USE UNDER RELEVANT LEPs

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (However described):

(a) the zone;

THIS ZONES THE LAND:- R5 LARGE LOT RESIDENTIAL

Objectives of zone:

(a) To provide residential housing in a rural setting while preserving, and minimising impacts on, environmentally sensitive locations and scenic quality.
(b) To ensure that large residential allotments do not hinder the proper and orderly development of urban areas in the future.
(c) To ensure that development in the area does not unreasonably increase the demand for public services or public facilities.
(d) To minimise conflict between land uses within the zone and land uses within adjoining zones.

(b) the purposes for which the instrument provides that development may be carried out within the zone without the need for development consent;

Extensive agriculture; Home occupations

(c) the purposes for which the instrument provides that development may not be carried out within the zone except with development consent;

Bed and breakfast accommodation; Dual occupancies (attached); Dwelling houses; Home businesses; Home-based child care; Home industries; Roads; Any other development not specified in item b or d.

(d) the purposes for which the instrument provides that development is prohibited within the zone;

Advertising structures; Agriculture; Air transport facilities; Amusement centres; Animal boarding or training establishments; Boat building and repair facilities; Boat sheds; Camping grounds; Car parks; Caravan parks; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Electricity generating works; Entertainment facilities; Exhibition homes; Extractive industries; Forestry; Freight transport facilities; Function centres; Heavy industrial storage establishments; Home occupations (sex services); Industries; Information and education facilities; Mortuaries; Neighbourhood shops; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Registered clubs; Research station; Residential accommodation; Restricted premises; Rural industries; Service stations; Sewerage systems; Sex services premises; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Wharf or boating facilities; Wholesale supplies

(a) the zone;

THIS ZONES THE LAND:- RU1 PRIMARY PRODUCTION

Objectives of zone:

(a) To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
(b) To encourage diversity in primary industry enterprises and systems appropriate for the area.
(c) To minimise the fragmentation and alienation of resource lands.
(d) To minimise conflict between land uses within the zone and landuses within adjoining zones.
(e) To permit non-agricultural uses which support the primary production purposes of the zone.
(f) To maintain the rural landscape character of the land.

(b) the purposes for which the instrument provides that development may be carried out within the zone without the need for development consent;

Extensive agriculture; Forestry; Home occupations.

(c) the purposes for which the instrument provides that development may not be carried out within the zone except with development consent;

Bed and breakfast accommodation; Cellar door premises; Dual occupancies (attached); Dwelling houses; Environmental protection works; Extractive industries; Farm buildings; Farm stay accommodation; Garden centres; Home-based child care; Home businesses; Home industries; Intensive livestock agriculture; Intensive plant agriculture; Open cut mining; Roads; Roadside stalls; Rural industries; Rural supplies; Rural workers' dwellings; Secondary dwellings; Any other development not specified in item b or d.

(d) the purposes for which the instrument provides that development is prohibited within the zone;

Amusement centres; Car parks; Commercial premises; Correctional centres; Eco-tourist facilities; Entertainment facilities; Exhibition homes; Freight transport facilities; Function centres; Health services facilities; Heavy industrial storage establishments; Home occupations (sex services); Industrial retail outlets; Industries; Information and education facilities; Port facilities; Public Administration buildings; Recreation facilities (indoor); Recreation facilities (major); Residential accommodation; Restricted premises; Service stations; Sex services premises; Storage premises; Tourist and visitor accommodation; transport depots; Vehicle body repair workshops; Vehicle repair stations; Workhouse or distribution centres; Wharf or boating facilities; Wholesale supplies

(e) whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed;

No.

(f) whether the land includes or comprises critical habitat;

No.

(g) whether the land is in a conservation area (however described), whether an item of environmental heritage (however described) is situated on the land;

The subject land is not identified as an item of environmental heritage in the Local Environmental Plan.

The subject land is not in a Conservation Area.

3. COMPLYING DEVELOPMENT

(1) Whether or not the land is land on which complying development may be carried out under each of the codes for complying development in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

If complying development may not be carried out on that land because of one or more of the requirements under clause 1.19 of that Policy, why it may not be carried out.

(a) General Housing Code

Yes, subject to the satisfaction of the relevant criteria in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, Complying Development may be carried out under the General Housing Code.

(b) Rural Housing Code

Yes, subject to the satisfaction of the relevant criteria in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, Complying Development may be carried out under the Rural Housing Code.

(c) Housing Alterations Code

Yes, subject to the satisfaction of the relevant criteria in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, Complying Development may be carried out under the Housing Alterations Code.

(d) General Development Code

Yes, subject to the satisfaction of the relevant criteria in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, Complying Development may be carried out under the General Development Code.

(e) General Commercial and Industrial Code

Yes, subject to the satisfaction of the relevant criteria in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, Complying Development may be carried out under the General Commercial and Industrial Code.

(f) Subdivisions Code

Yes, subject to the satisfaction of the relevant criteria in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, Complying Development may be carried out under the Subdivisions Code.

(g) Demolition Code

Yes, subject to the satisfaction of the relevant criteria in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, Complying Development may be carried out under the Demolition Code.

4. COASTAL PROTECTION

Whether or not the land is affected by the operation of section 38 or 39 of the *Coastal Protection Act 1979*, but only to the extent that the council has been so notified by the Department of Public Works.

No.

5. MINE SUBSIDENCE

Whether or not the land is proclaimed to be a mine subsidence district within the meaning of section 15 of the Mine Subsidence Compensation Act 1961.

The subject land is not affected by sec.15 of the Mine Subsidence Compensation Act, 1961, proclaiming land to be in the South Campbelltown Mine Subsidence District.

6. ROAD WIDENING AND ROAD REALIGNMENT

Whether or not the land is affected by any road widening or road realignment under:

(a) Division 2 of Part 3 of the *Roads Act 1993*, or
(b) any environmental planning instrument, or
(c) any resolution of the council.

The subject land is not affected by road widening or road realignment under:

(1) Division 2 of Part 3 of the Roads Act 1993.
(2) Any Environmental Planning Instrument.
(3) Any resolution of Council.

However, should your property be near a main road you should check with the Roads and Traffic Authority for possible affectation.

7. COUNCIL AND OTHER PUBLIC AUTHORITY POLICIES ON HAZARD RISK RESTRICTIONS

Whether or not the land is affected by a policy:

(a) adopted by the council, or

(b) adopted by any other public authority and notified to the council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the council,

that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

No. (Except Bushfire)

7a. FLOOD RELATED DEVELOPMENT CONTROLS INFORMATION

(a) Whether or not development on that land or part of the land for the purposes of dwelling houses, dual occupancies, multi-dwelling housing or residential flat buildings (not including development for the purposes of group homes or senior housing) is subject to flood related development controls.

The subject land is affected by flood related development controls that restrict development of the subject land due to the likelihood of flooding.

(b) Whether or not development on that land or part of the land for any other purpose is subject to flood related development controls.

The subject land is affected by flood related development controls that restrict development of the subject land due to the likelihood of flooding.

8. LAND RESERVED FOR ACQUISITION

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 27 of the Act.

The land is not subject to acquisition by Council or any public authority under any Local Environmental Plan, deemed environmental planning instrument or draft Local Environmental Plan applying to the land, as referred to in Section 27 of the Environmental Planning and Assessment Act, 1979.

9. CONTRIBUTIONS PLANS

The name of each contributions plan applying to the land

Section 94 Contributions Plan No 16 - Ellis Lane And Grasmere Adopted By Council: 27 January 1998. Section 94 Contributions Plan No 16 - Amended Adopted by Council: 27 October 2003 - In Force: 12 November 2003

Section 94 Camden Contributions Plan - Adopted by Council: 28 March 2012. In Force: 26 April 2012.

9A. BIODIVERSITY CERTIFIED LAND

If the land is biodiversity certified land (within the meaning of Part 7AA of the *Threatened Species Conservation Act 1995*), a statement to that effect.

The name of each contributions plan applying to the land

No.

10. BIOBANKING AGREEMENTS

If the land is land to which a biobanking agreement under Part 7A of the Threatened Species Conservation Act 1995 relates, a statement to that effect (but only if the council has been notified of the existence of the agreement by the Director-General of the Department of Environment, Climate Change and Water).

No.

11. BUSH FIRE PRONE LAND

If any of the land is bush fire prone land (as defined in the Act) a statement that all or, as the case may be, some of the land is bush fire prone land.

Council has been supplied by the NSW Rural Fire Service with a Bush Fire Prone Land Map for the purposes of a bush fire risk management plan applying to the land within the Camden Local Government Area. Based on that map, it appears the land referred to in this certificate is bush fire prone land as defined in s.4 of the Environmental Planning and Assessment Act, 1979. For further details contact Council's Development Branch.

12. PROPERTY VEGETATION PLANS

If the land is land to which a property vegetation plan under the *Native Vegetation Act 2003* applies, a statement to that effect (but only if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act).

No.

13. ORDERS UNDER TREES (DISPUTES BETWEEN NEIGHBOURS) ACT 2006

Whether an order has been made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land (but only if the council has been notified of the order).

No.

14. DIRECTIONS UNDER PART 3A

If there is a direction by the Minister in force under section 75P (2) (c2) of the Act that a provision of an environmental planning instrument prohibiting or restricting the carrying out of project or a stage of a project on the land under Part 4 of the Act does not have effect, a statement to that effect identifying the provision that does not have effect.

No.

15. SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR SENIORS HOUSING

If the land is land to which *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004* applies:

(a) a statement of whether there is a current site compatibility certificate (seniors housing), or which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

(i) that period for which the certificate is current, and
(ii) that a copy may be obtained from the head office of the Department of Planning.

And,

(b) a statement setting out any terms of a kind referred to in clause 18(2) of that Policy that have been imposed as a condition of consent to a development application granted after 11 October 2007, in respect of the land.

No.

16. SITE COMPATIBILITY CERTIFICATES FOR INFRASTRUCTURE

A statement of whether there is a valid site compatibility certificate (infrastructure), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

(a) the period for which the certificate is valid, and

(b) that a copy may be obtained from the head office of the Department of Planning.

No.

17. SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR AFFORDABLE RENTAL HOUSING

(1) A statement of whether there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

(a) the period for which the certificate is current, and
(b) that a copy may be obtained from the head office of the Department of Planning.

(2) A statement setting out any terms of a kind referred to in clause 17(1) or 37(1) of *State Environmental Planning Policy (Affordable Rental Housing) 2009* that have been imposed as a condition of consent to a development application in respect of the land.

No.

18. PAPER SUBDIVISION INFORMATION

(1) The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.

(2) The date of any subdivision order that applies to the land.

(3) Words and expressions used in this clause have the same meaning as they have in Part 16C of this Regulation.

Note. The following matters are prescribed by section 59 (2) of the *Contaminated Land Management Act 1997* as additional matters to be specified in a planning certificate:

(a) that the land to which the certificate relates is significantly contaminated land within the meaning of that Act - if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,

(b) that the land to which the certificate relates is subject to a management order within the meaning of that Act - if it is subject to such an order at the date when the certificate is issued,

(c) that the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of that Act—if it is the subject of such an approved proposal at the date when the certificate is issued,

(d) that the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of that Act - if it is subject to such an order at the date when the certificate is issued,

(e) that the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act—if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

Note. Section 26 of the *Nation Building and Jobs Plan (State Infrastructure Delivery) Act 2009*provides that a planning certificate must include advice about any exemption under section 23 or authorisation under section 24 of that Act if the council is provided with a copy of the exemption or authorisation by the Co-ordinator General under that Act.

No.

CONTAMINATED LAND – The following matters are prescribed by section 59 (2) of the *Contaminated Land Management Act 1997* as additional matters to be specified in a planning certificate

(a) that the land to which the certificate relates is significantly contaminated land within the meaning of that Act – if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued.

No.

(b) that the land to which the certificate relates is subject to a management order within the meaning of that Act – if it is subject to such an order at the date when the certificate is issued,

No.

(c) that the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of that Act – if it is the subject of such an approved proposal at the date when the certificate is issued,

No.

(d) that the land to which the certificate relates is subject to an on-going maintenance order within the meaning of that Act – if it is subject to such an order at the date when the certificate is issued,

No.

(e) that the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act – if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

No.

INFORMATION PROVIDED UNDER SECTION 149(5) OF THE ACT:

OTHER INFORMATION

1. SECOND SYDNEY AIRPORT BADGERYS CREEK

It should be noted that the Commonwealth Department of Transport and Regional Development has released a document entitled Draft Environmental Impact Statement (Draft EIS) - Second Sydney Airport Proposal (Badgerys Creek) - (December 1997)which details the potential impacts of the three (3) proposed airport options including noise, land use and planning, air quality, water quality, traffic, social and economic effects. For the latest update on the Second Sydney Airport Proposal (Badgerys Creek), please contact the Commonwealth Department of Transport and Regional Development - GPO Box 594 Canberra ACT 2601, (02) 6274 7111.

2. TREE PRESERVATION ORDER

The subject land is affected by provisions of Clause 5.9 of Appendix 9 of State Environmental Planning Policy (Sydney Region Growth Centres) 2006, in regard to the protection of trees. A person shall not ringbark, cut down, lop, top, remove, injure or wilfully damage or destroy any living tree on this property, except with the consent of Council. Where clearing provisions apply, clearing of vegetation (including native vegetation) may not be carried out except with the consent of Council.

3. ADDITIONAL FLOODING INFORMATION

The subject land is affected by flood related development controls that restrict development of the subject land due to the likelihood of flooding.

4. MISCELLANEOUS INFORMATION

All buildings are to observe a 20 metre building setback to the primary road frontage and a 5 metre setback from the secondary road frontages and side/rear boundaries.

The subject land is affected by a policy relating to igloo-type greenhouses within rural and rural/residential areas. Details are available from Council's Environment Planning and Building Department.

The subject land is affected by Sydney Water Sewerage Treatment Plant (STP) Buffer Zone Policy. Further details are available from Council's Environment Planning and Building Department or Sydney Water Corporation (02 9828 8444).

Coal seam gas extraction takes place within the Camden Local Government Area. Enquiries may be made to AGL Gas Production (Camden) Pty Limited, or the relevant the licence holder, as to the location of gas wells.

This information is provided in good faith and the Council shall not incur any liability in respect of any such advice. Council relies on state agencies for advice and accordingly can only provide that information in accordance with the advice. Verification of the currency of agency advice should occur. Further information, please contact Council's Land Information Section.

Ron Moore
General Manager
per:

THE COUNCIL OF THE MUNICIPALITY OF CAMDEN

(Incorporated 1889 -- Reconstituted 1949)

Council Offices
37 John Street,
Camden, N.S.W.
DX 5126
Campbelltown
Telephone: (046) 55 [illegible]
(046) 55 [illegible]
Facsimile: (046) 55 [illegible]

(OUR REF.) MEIER:SH:DA8125/019/00

(YOUR REF.)

28th November, 1991

PLC Sydney
Locked Mail Bag No. 2
Croydon Post Office
CROYDON NSW 2132

Dear Sir/Madam,

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979
NOTICE OF DETERMINATION OF DEVELOPMENT APPLICATION NO: 1333/91

APPLICANT: PLC SYDNEY

Pursuant to Section 92 of the Act, notice is hereby given of the determination of Development Application No. 1333/91 relating to the land and proposed development described as follows:

LAND:	LOT PART 1, DP 536077
LOCATION:	WEROMBI ROAD, GRASMERE
ZONE:	PART NON-URBAN 'A' (40ha) AND PART NON-URBAN 'B' (40ha) - INTERIM DEVELOPMENT ORDER No. 3
PROPOSED DEVELOPMENT:	USE OF EXISTING PREMISES FOR STUDENT ACCOMMODATION/EDUCATION AND ASSOCIATED SEMINARS/FUNCTIONS

as shown on the plans endorsed with Council's stamp and attached to Development Consent No. 3110

The development application has been determined by the granting of consent subject to the following conditions:

1. Development shall take place in accordance with submitted plans dated October, 1989 prepared by W. Kohler Enterprises Pty Ltd and submitted in respect of Development Application dated 14th October, 1991 except where varied by the following conditions.

2. All required building work as detailed in Council's correspondence to the Presbyterian Ladies College, Sydney and dated 9th October, 1991 shall be completed to Council's satisfaction prior to the use or occupation of the building. The Schedule attached to this consent lists these specific items.

3. The proposed conference centre shall be upgraded to improve the level of fire safety by the provision of a fire hose reel, emergency lighting and additional fire escape doors to the requirements of Ordinance 70, Local Government Act, prior to the use or occupation of the building.

4. Additional separate male and female toilet closet accommodation shall be provided in acordance with the requirements of the Municipal Health Surveyor.

5. Storage and disposal of trade waste shall be controlled to the satisfaction of Council at all times.

   NOTE:- In this regard it is recommended that the applicant liaise with Council's Health and Building Department to arrange for the delivery of mobile garbage bins and to discuss collection procedures.

6. No incinerators are to be installed at the premises without prior Council approval. Any proposed incinerator will be required to comply with the specific requirements of Council, the State Pollution Control Commission and the Clean Air Act, 1971.

The above conditions have been imposed in the public interest; to reduce any potential environmental impact and to ensure that the proposed development complies with the provisions of the Environmental Planning and Assessment Act, 1979 and the Regulations, any environmental planning instruments applying to the subject land, and Council's Codes and Policies.

ENDORSEMENT OF DATE OF CONSENT: 29th November, 1991

NOTES:

1. Consent shall become effective and operate from the "Endorsement of date of consent" on this Notice, and shall lapse unless the proposed development is commenced within two years of that date. If an environmental planning instrument having the effect of prohibiting the development is made, consent shall lapse within one year from the date that instrument comes into force.

2. Applications for an extension of time must be made to Council prior to the lapsing of consent. Such extensions are limited by the Act to 12 months. Council reserves the right to approve or refuse such applications.

3. Section 97(1) of the Act confers on an applicant who is dissatisfied with the determination of a consent authority, a right of appeal to the Land and Environment Court exercisable within 12 months from the date of this notice.

4. This Consent does not represent Building Approval nor does it imply that the plans attached to this Consent comply with the specific requirements of Ordinance 70, Local Government Act. A separate Building Application under Part XI of the Local Government Act, 1919 as amended, accompanied by plans and specifications which comply with requirements of Ordinance 70, shall be submitted to, and approved by, Council's Health and Building Department for any building prior to the commencement of any work on site.

5. The proposed building, as detailed on the plans attached to this application, requires amendment to comply with the requirements of the Ordinance 70, Local Government Act 1919, as amended. In this regard it is suggested that the applicant liaise with Council's Health and Building Department prior to the preparation of plans for submission of the building application.

6. As this approval relates to the use of the building, or portion of the building, for the preparation, manufacture packaging, storage and/or sale of food, such building, or portion of the building, shall be constructed in accordance witht he requirements of the Pure Food Act, 1908 and Council's Standards for Food Premises. In this regard Council's Health and Building Department is to be consulted for details relating to the fitout and the licensing required under the Local Government Act, 1919, as amended. Detailed plans and specifications of the food area fitout shall be submitted to Council and approval obtained prior to the commencement of any work.

7. An application under the provisions of ordinance 55 Local Government Act, 1919, as amended, shall be submitted to, and approved by Council's Health and Building Department, prior to the erection and/or display of any advertising signs. The design, style, colour and type of any advertising signs shall have regard to the style and character of the development on the site and Council's Policy on Advertising Signs and Structures.

8. Portable Fire Extinguishers are required to be installed throughout the building. In this regard the developer is requested to contact Council's Health and Building Department for particulars of the type and location of the required fire extinguishers.

I.R.Power

I. R. POWER
CHIEF TOWN PLANNER
Per:

(TPCON15/17-19)

SCHEDULE OF WORKS REFERRED TO IN CONDITION 2

OF DEVELOPMENT CONSENT PERMIT No. 3110

1. Pursuant to the provisions of part 62 of Ordinance 70 an application in the prescribed format shall be lodged with Council for the issue of a boarding house licence. Such application shall be made to Council and approval obtained prior to occupancy.

2. Such premises shall be managed and used in strict accordance with Part 63 of Ordinance 70.

3. The subject premises shall be upgraded to meet the minimum requirements of Ordinance 70.

4. A early warning fire detection system presently installed within the building is to be thoroughly serviced and made operational. Such system shall be designed and installed to comply with A.S. 1670 - 1986.

5. A fire hose reel system shall be installed throughout the building incorporating 30m long hoses. Such system shall be installed so that no point in the whole building is beyond the reach of the nozzle end of a hose. The required hose reel system shall be installed to meet the requirements of Part 27 of Ordinance 70 made under the Local Government Act, 1919.

6. The kitchen facilities and rooms in general shall be upgraded to comply with Council's Food Premises Code and the Food Act of 1989 and Regulations made thereunder. In this regard it will be necessary to liaise with Senior Health Surveyor Mrs. Jayne Christie.

7. All exit doorways shall be identified with illuminated exit signs. Furthermore, all hallways, the two (2) stairways leading to the exits and common areas shall be illuminated with emergency lighting luminaires. Illuminated exit signs and emergency lighting luminaires in each case shall be designed and installed to comply with A.S. 2293.

8. All bedrooms, storage cupboards and other rooms facing the egress passageways in the subject premises shall be fitted with tight fitting self-closing solid core doors.

9. All curtains, drapes and floor coverings shall be protected or be of a material that complies with Clause 16.19 1(b) of Ordinance 70.

(TPCON15/20)

NTHO:2030.100

Dimpalis PTY LTD
Level 2, 1 Transvaal Avenue
DOUBLE BAY 2028

NOTICE OF DETERMINATION OF DEVELOPMENT APPLICATION No. 1147/2006

Issued under Section 81 (1) (a) of the Environmental Planning and Assessment Act 1979

(For privacy reasons, the applicant's details only appear in the notice to the applicant)

LAND TO BE DEVELOPED:	**10 Crase Place GRASMERE LOT: 24 DP: 1086823**
PROPOSED DEVELOPMENT:	**Brick Stables Building**
BUILDING CODE OF AUSTRALIA: (If the development involves a building)	**Building Classification 10A**

DETERMINATION: Consent granted subject to conditions described below.

DATE FROM WHICH THE CONSENT OPERATES: 16/02/2007

DATE THE CONSENT EXPIRES: 11/01/2009
(unless works commenced)

DATE OF THIS DECISION: 12/01/2007

INFORMATION ATTACHED TO THIS DECISION:

- **Advice listed in Attachment A.**
- **CC Advice listed in Attachment B.**

Details of Conditions:

1.0 - General Requirements

(1) **Approved Plans** – The development must be carried out strictly in accordance with the plans prepared by Keith Lane, dated 10/2006 and numbered 1 to 3.

The development must also comply with the conditions of approval imposed by Council hereunder.

Amendments – Modifications to the approved plans and specifications requires the prior approval of the Consent Authority (Camden Council). The procedure for applying to amend the approved plans is to submit an "Amended Development Application" form pursuant to section 96 of the *Environmental Planning & Assessment Act 1979*.

(2) **Landscape** – Landscaping shall be installed prior to use/occupation of the building. Landscaping shall be protected from access by horses.

(3) **Timber Framing** – The timber frame must be constructed in accordance with the requirements of the most current edition of AS1684 - 'Residential Timber-frame Construction'. The applicant is advised that the wall and roof framework including bracing must be designed and anchored to withstand a wind velocity for the particular area.

(4) **Durable Timber Selection** - Timber exposed to weather which supports structural or live loads such as cantilevered balconies, posts and the like must be of natural durability, Class 1 or 2, or preservative treated to a hazard level of 3 or better in accordance with AS1684.

(5) **Sewered Areas** - All sullage and effluent generated by the use of the building must be connected to the sewer of the Sydney Water Corporation. The plans approved by Council must be lodged with the Corporation for concurrence prior to the commencement of work.

(6) **Building Code of Australia** - All works must be carried out in accordance with the requirements of the Building Code of Australia.

2.0 - Construction Certificate Requirements

The following conditions of consent shall be complied with prior to the issue of a Construction Certificate.

(1) **88B Instrument** – Prior to the issue of the construction certificate the following 88B restrictions to user shall be amended as follows;

i. In regard to lot 24/1086823 the restriction to user as mentioned twelfthly in the plan shall be varied to read as follows;
"The Owner of any of burdened shall not permit the construction of a dwelling or parts of a dwelling outside the building envelope as indicated on the plan of the lot. Any above ground structure, not including a dwelling, which is located external to the building envelope as indicated on the plan of the lot, shall not be erected unless the structure has had the prior consent of The Council of Camden".

ii. In regard to lot 24/1086823 the restriction to user as mentioned eighthly in the plan shall be varied as follows;
The restriction to user shall be extinguished and an amending easement plan and restriction on the use of the land under section 88E of The Conveyancing Act shall be created over the portion of the land where the restriction "L" is currently imposed and in accordance with the following;
The amending easement plan created under section 88E shall replace the area of the current easement "L" as marked on the plan.
The amending easement plan shall detail on the plan "RESTRICTION ON THE USE OF LAND 'STP' BUFFER ZONE'"
The amending easement plan shall be accompanied by a restriction to user created under section 88E worded as follows;
Terms of Restriction on the Use of Land (the new number for restriction) referred to in the above mentioned Plan.
Not to erect or suffer to permit to be erected any dwelling, dwelling house, residential flat building, rural worker's dwelling or commercial premises, within the meaning of the Environmental Planning Assessment Model Provision 1980, on any part or parts of any lot hereby burdened identified on the Plan as "STP Buffer Zone". "STP Buffer Zone" means Sewage Treatment Plan Buffer Zone.
Name of Authority empowered to Release, Vary or Modify the Easement firstly and Restrictions secondly and thirdly referred to in the above mentioned Plan. The Council of Camden

The amending instruments and easements shall be prepared by a registered surveyor and be submitted to Council, with the requests to vary the instruments, for endorsement prior to lodgement with (NSW Dept. of) Land and Property Information. Evidence of lodgement with the Land and Property Information shall be submitted to Council.
A release fee of $ 285 (or the fee current on the day of submission to Council) must be deposited to Camden Council's Account No A.2681.402.9, together with the Amending Easement Plan, variations to

the 88B instrument and requests. Ten (10) copies of plans shall be provided that are suitable for certification by the General Manager and lodgement at Land and Property Information

(2) **Salinity** - The site is located in an area confirmed as having soil salinity levels that will have a cumulative damaging effect on the building over time.

The following construction inclusions shall be incorporated in the building design to reduce/prevent any detrimental affect to the building from accumulative salt deposits:

a) provide a **damp proof barrier** with high impact resistance to under slab in accordance with the **NSW provisions of part 3.2.2.6 of the Building Code of Australia**,
b) concrete strength to bored piers, floor slabs and strip footings shall be a minimum of 32mpa and vibrated, and adequately cured
c) drainage shall be provided to the building perimeter including **subsoil** drainage to prevent water pondage or soil water logging in the building vicinity, and adequately cured,
d) brick work and mortar below DPC should be exposure rated,
e) DPC material must be carried through to the face of any applied finishes. Retaining walls should be built of salinity resistant materials.

Porous pavement product such as cement and clay pavers may show permanent efflorescence and salt corrosion. The use of these products should be discussed with the manufacturer as suitable for use in a saline environment prior to installation.

3.0 - Prior To Works Commencing

The following conditions of consent shall be complied with prior to any works commencing on the construction site.

(1) **Notice of Commencement of Work** – Notice in the form prescribed by the *Environmental Planning and Assessment Regulation 2000* shall be lodged with the Consent Authority (ie Camden Council) **at least 2 days prior** to commencing building works. The notice shall provide details relating to any Construction Certificate issued by a certifying authority and the appointed Principal Certifying Authority.

(2) **Construction Certificate Before Work Commences** - This consent does not allow site works, building or demolition works to commence, nor does it imply that the plans attached to this consent comply with the specific requirements of the Building Code of Australia. Such works

must only take place after a Principal Certifying Authority (PCA) has been appointed and a Construction Certificate has been issued.

4.0 - During Construction

The following conditions of consent shall be complied with during the construction phase.

(1) **Hours Of Operation** - All construction and demolition work must be restricted to between:

(a) 7am and 6pm Mondays to Fridays (inclusive);

(b) 7am to 4pm Saturdays, if construction noise is inaudible to adjoining residential properties, otherwise 8am to 4pm;

(c) work on Sundays and Public Holidays is prohibited.

(2) **Site Management** – To safeguard the local amenity, reduce noise nuisance and to prevent environmental pollution during the construction period, the following practices are to be implemented:

- The delivery of material shall only be carried out between the hours of 7 am - 6pm Monday to Friday and between 8am - 4pm on Saturdays.
- Stockpiles of topsoil, sand, aggregate, spoil or other material shall be kept clear of any drainage path, easement, natural watercourse, kerb or road surface and shall have measures in place to prevent the movement of such material off the site.
- Builder's operations such as brick cutting, washing tools, concreting and bricklaying shall be confined to the building allotment. All pollutants from these activities shall be contained on site and disposed of in an appropriate manner.
- Builder's waste must not be burnt or buried on site, nor should wind-blown rubbish be allowed to leave the site. All waste must be disposed of at an approved Waste Disposal Depot.
- A waste control container shall be located on the development site.

(3) **Roofwater Destination** - The roof of the subject building(s) must be provided with guttering and down pipes and all stormwater conveyed to:

(a) rubble pits located and constructed as detailed below;

Note: Such pits must be 10 metres in length x 600mm x 600mm in size sited parallel with the ground contours and at least 3m from any building property boundary.

(b) such other method(s) as approved by Council.

(4) **Connect Downpipes** - Stormwater from roof areas must be connected to a Council approved stormwater disposal system immediately after the roofing material has been fixed to the framing members. The Principal Certifying Authority must not permit construction works beyond the frame inspection stage until this work has been carried out.

(5) **Building Inspections** - The Principal Certifying Authority (PCA) which may be Council or an Accredited Certifier, must determine when inspections and compliance certificates are required. Where the Consent Authority (ie Camden Council) is nominated as the PCA, the following stages must be inspected and passed prior to proceeding to the subsequent stage of construction.

(a) **Pier Holes** – Excavated pier holes prior to pouring of concrete.

(b) **Slab On Ground** – When steel reinforcement and associated formwork has been provided prior to the slab being poured with concrete.

(c) **Wall & Roof Framing** - When the wall and roof frame have been completed (with plumbing and electrical wiring installed), brickwork complete and the roof covering fixed prior to internal lining.

(d) **Wet Area Flashing** - When wall and floor junctions have been flashed with an approved product prior to installation of floor/wall coverings. Wet areas include bathrooms, laundries, sanitary compartments, ensuites and the like.

(e) **Stormwater Line-work** - When stormwater drainage lines have been laid and connection to a street kerb, drainage easement, or rubble pit prior to backfilling.

(f) **Occupation Certificate (final inspection)** - Upon completion of the development and before occupation or commencement of use.

5.0 - Prior To Issue Of Occupation Certificate

The following conditions shall be complied with prior to the issuing of an Occupation Certificate. The issue of an "interim" Occupation Certificate may occur if the Principal Certifying Authority (PCA) is satisfied that outstanding matters will be completed within a reasonable time frame. Additional fees for the issue of interim Occupation Certificates may be applied by the PCA.

(1) **Compliance with Conditions** - The Principal Certifying Authority must submit a copy of the Occupation Certificate to the Consent Authority

(ie Camden Council) within seven (7) days from the date of determination and include all relevant documents and certificates that are asked for as conditions of development approval.

The use or occupation of the approved development must not commence until such time as all conditions of this development consent have been complied with. **The use or occupation of the development prior to compliance with all conditions of development consent may make the applicant/developer liable to legal proceedings.**

6.0 - Operational Conditions

(1) All manure and refuse must be removed from the stables and yards **DAILY**.

(2) Feed and drinking water must be placed in properly constructed containers which are not capable of being easily tipped over.

(3) Bedding, shavings and straw must be cleaned (and provided with fresh clean bedding) **DAILY**. At least once a week the stable floor must be lime dusted.

(4) The premises must be kept free from nuisance of any kind and maintained in a clean and sanitary condition at all times.

(5) Feed and water troughs must be installed in a manner and location to avoid problems with flies, rodents, vermin, mosquito and drainage.

(6) Horse food must be stored in approved metal containers, provided with close fitting lids.

(7) **Use Limitations** – The stables and land shall not be used for the adjistment of horses or animals, or for the commercial raising or training of horses/animals.

Reasons for Conditions:

(1) To ensure that the proposed development complies with the requirements of *Environmental Planning and Assessment Act 1979 and Regulations* made thereto.

(2) To prevent site works causing a nuisance to the surrounding properties and the area generally.

(3) To ensure that the building complies with the requirements of the Building Code of Australia (BCA) and applicable Australian Standards.

(4) To ensure that the development meets the aims, objectives and requirements of Council's Local Environmental Plan, Development Control Plans and Policies which relate to the subject land.

Advice:

nil

RIGHTS OF APPEAL **If you are the applicant:**

You can appeal against this decision in the Land and Environment Court within 12 months of the date of this notice. You cannot appeal, however, if a Commission of Inquiry is or is to be held and the development is designated development or state significant development.

DETERMINATION REVIEW

If you are an applicant and you are dissatisfied with the determination, you may within 12 months from the date of determination, request Council, in writing, to review the determination.

SIGNED on behalf of
Camden Council

Mr N Thomson
DEVELOPMENT OFFICER
(Development Branch)

ATTACHMENT A

The following matters are included as advice as relative to this application.

1. Section 82A of the EP&A Act 1979 provides that the applicant may request a review of this determination within twelve months of the date of the determination, following the payment of the prescribed fee.

2. Section 125 of the EP&A Act, 1979 provides that any person who contravenes or causes or permits to be contravened the conditions of this consent shall be guilty of an offence.

3. Section 125 of the EP&A Act, 1979 provides that any person who contravenes or causes or permits to be contravened the requirements of Council's Tree Preservation Policy shall be guilty of an offence.

4. Section 126 of the EP&A Act, 1979 provides that a person guilty of an offence against this Act shall, for every such offence, be liable to the penalty expressly imposed and if no penalty is so imposed to a penalty not exceeding 1000 penalty units and to a further daily penalty not exceeding 100 penalty units.

5. The contributions required under Section 94 of the EP &A Act, 1979 are set out in the stated Contribution Plans which can be viewed at Council's Customer Service during normal business hours.

6. This consent does not allow site, building or demolition works to commence. Such works shall only take place after a Construction Certificate has been applied for and been issued.

7. **SYDNEY WATER** requires the submission of stamped approved plans to their office prior to commencement of work.

8. **INTEGRAL ENERGY** requires electrical installations to be in accordance with their standards. All enquiries relating to electrical installations should be directed to that Authority.

9. **TELSTRA** requests that prior to any excavation commencing in connection with the approved work, contact should be made with Telstra "Cable Locations", Telephone 1100. Calls to this number are free.

10. A home warranty certificate must have been issued for the project **prior to issue of the Construction Certificate.**

ATTACHMENT B - CC Advice

1. In the case of residential building work for which the *Home Building Act 1989* requires there to be a contract of insurance in force in accordance with Part 6 of that Act, that such a contract of insurance is in force.

2. **Residential Building Work** – Building work that involves residential building work (within the meaning of the *Home Building Act 1989*) must not be carried out unless the principal certifying authority for the development to which the work relates.

   (i) in the case of work to be done by a licensee under that Act:

   - has been informed in writing of the licensee's name and contractor licence number, and
   - is satisfied that the licensee has complied with the requirements of Part 6 of that Act, or

(ii) in the case of work to be done by any other person:

- has been informed in writing of the person's name and owner-builder permit number, or
- has been given a declaration, signed by the owner of the land, that states that the reasonable market cost of the labour and materials involved in the work is less than the amount prescribed for the purposes of the definition of ***owner-builder work*** in section 29 of that Act.

and is given appropriate information and declarations under paragraphs (a) and (b) whenever arrangements for the doing of the work are changed in such a manner as to render out of date any information or declaration previously given under either of those paragraphs.

A certificate purporting to be issued by an approved insurer under Part 6 of the *Home Building Act 1989* that states that a person is the holder of an insurance policy issued for the purposes of that Part is, for the purposes of this clause, sufficient evidence that the person has complied with the requirements of that Part.

Appendix E
Land Ownership Title Search Results

Phase 1 Contamination Assessment and Salinity Assessment
Part Lot 24 DP1086823, 10 Crase Place,
Grasmere, NSW

ADVANCE LEGAL SEARCHERS PTY LTD

(ACN 147 943 842)
ABN 82 147 943 842

P.O. Box 149
Yagoona NSW 2199

Telephone: +612 9644 1679
Mobile: 0412 169 809
Facsimile: +612 8076 3026
Email: alsearch@optusnet.com.au

10th October, 2013

COFFEY ENVIRONMENTS PTY LTD
118 Auburn Street,
WOLLONGONG NSW 2500

Attention: Colee Quayle

RE: **10 Crase Place, Grasmere**
Project No: ENAUWOLL041500AA
Purchase Order EWOLL-279

Current Search

Folio Identifier 24/1086823 (title attached)
DP 1086823 (plan attached)
Dated 9th October, 2013
Registered Proprietor:
COWBRIDGE HOLDINGS PTY LIMITED

Title Tree
Lot 24 DP 1086823

Folio Identifier 24/1086823

Folio Identifier 102/841639

Folio Identifier 1/536077

Certificate of Title Volume 11098 Folio 150

Certificate of Title Volume 7526 Folio 122

PA 39865

Conveyance Book 2333 No. 438

Conveyance Book 2313 No. 809

Conveyance Book 2008 No. 247

Conveyance Book 1976 No. 267

Conveyance Book 1758 No. 710

Conveyance Book 1658 No. 894

Conveyance Book 1617 No. 700

Conveyance Book 1579 No. 61

Conveyance Book 1229 No. 357

*****

Summary of proprietor(s)
Lot 24 DP 1086823

Year	Proprietor
	(Lot 24 DP 1086823)
2012 – todate	Cowbridge Holdings Pty Limited
2005 – 2012	Dimpalis Pty Limited
	(Lot 102 DP 841639)
2003 – 2005	Dimpalis Pty Limited
1994 – 2003	The University of Sydney
	(Lot 1 DP 536077)
1989 – 1994	The University of Sydney
1988 – 1989	The Minister for Family and Community Services for the Family and Community Services Department
1988 – 1988	Minister for Public Works
	(Lot 1 DP 536077 – Area 61 Acres 2 Roods 12 Perches – CTVol 11098 Fol 150)
1973 – 1988	Minister for Public Works
1969 – 1973	Commonwealth Scientific and Industrial Research Organisation (CSIRO)
	(Lot C Misc. Plan of Subdivision (O.S.) No. 9967, part of Portion 12, Parish of Camden – Areas 61 Acres 3 Roods 30 Perches – CTVol 7526 Fol 122)
1958 – 1969	Commonwealth Scientific and Industrial Research Organisation (CSIRO)
	(Lot C Misc. Plan of Subdivision (O.S.) No. 9967, part of Portion 12, Parish of Camden – Conv Bk 2333 No. 438)
1955 – 1958	Commonwealth Scientific and Industrial Research Organisation (CSIRO)
1955 – 1955	The Commonwealth of Australia
	(Lots 21 to 24, of the resubdivision of Farms 44, 15 & 14, Cawdor Estate, Parish of Camden – Area 61 Acres 2 Roods 32 Perches, with other lands – Conv Bk 2008 No. 247)
1946 – 1955	Gladys Ivy Luscombe, wife of retired hotelkeeper
1946 – 1946	Gordon Charles Luscombe, clerk
	(Lots 21 to 24, of Onslow's subdivision,of the resubdivision of Farms 44, 15 & 14, Cawdor Estate, Parish of Camden – Area 61 Acres 2 Roods 32 Perches, with other lands – Conv Bk 1976 No. 267)
1945 – 1946	Gordon Charles Luscombe, clerk
1945 – 1945	Thomas Blow, farmer

Cont.

Cont.

	(Lots 21 to 24, of Onslow's subdivision,of the resubdivision of Farms 44, 15 & 14, Cawdor Estate, Parish of Camden – Area 61 Acres 2 Roods 32 Perches, with other lands – Conv Bk 1758 No. 710)
1936 – 1945	Thomas Blow, farmer
1936 – 1936	William George Watson, farmer
	(Lots 21 to 24, of Onslow's subdivision,of the resubdivision of Farms 44, 15 & 14, Cawdor Estate, Parish of Camden – Area 61 Acres 2 Roods 32 Perches, with other lands – Conv Bk 1658 No. 894)
1933 – 1936	William George Watson, farmer
1933 – 1933	John O'Brien, farmer
	(Lots 21 to 24, of the resubdivision of Farms 44, 15 & 14, Cawdor Estate, Parish of Camden – Area 61 Acres 2 Roods 32 Perches, with other lands – Conv Bk 1617 No. 700)
1929 – 1933	John O'Brien, farmer
1929 – 1929	Frederick Rofe, grazier
	(Lots 21 to 24, of the resubdivision of Farms 44, 15 & 14, Cawdor Estate, Parish of Camden – Area 61 Acres 2 Roods 32 Perches, with other lands – Conv Bk 1579 No. 61)
1929 – 1929	Frederick Rofe, grazier
	(Lots 21 to 24, of the resubdivision of Farms 44, 15 & 14, Cawdor Estate, Parish of Camden – Area 61 Acres 2 Roods 32 Perches, with other lands – Conv Bk 1229 No. 357)
1921 – 1929	Frederick Rofe, grazier
1901 – 1921	Elizabeth Willis, wife of grazier

****

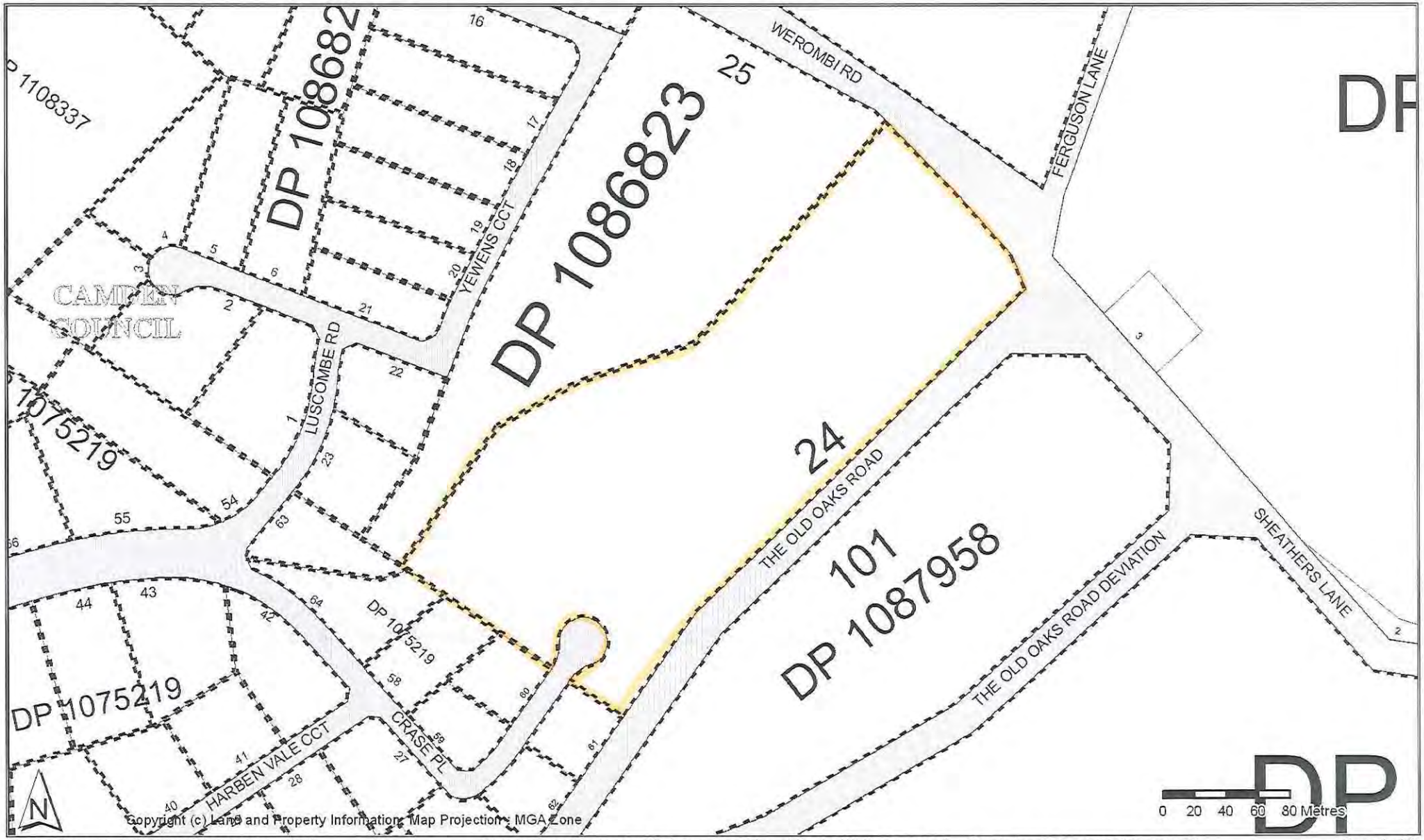
Land & Property Information

Cadastral Records Enquiry Report

Ref : ALS

Requested Parcel : Lot 24 DP 1086823 **Identified Parcel** : Lot 24 DP 1086823

Locality : GRASMERE **LGA** : CAMDEN **Parish** : CAMDEN **County** : CAMDEN



Report Generated 10:43:55 AM, 9 October, 2013

This information is provided as a searching aid only. While every endeavour is made to ensure the current cadastral pattern is accurately reflected, the Registrar General cannot guarantee the information provided. For all ACTIVITY PRIOR to SEPT 2002 you must refer to the RGs Charting and Reference Maps.

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 24/1086823

SEARCH DATE	TIME	EDITION NO	DATE
9/10/2013	11:44 AM	4	23/2/2012

LAND

LOT 24 IN DEPOSITED PLAN 1086823
AT GRASMERE
LOCAL GOVERNMENT AREA CAMDEN
PARISH OF CAMDEN COUNTY OF CAMDEN
TITLE DIAGRAM DP1086823

FIRST SCHEDULE

COWBRIDGE HOLDINGS PTY LTD (T AG832523)

SECOND SCHEDULE (19 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 DP841639 RESTRICTION(S) ON THE USE OF LAND
3 DP1075537 EASEMENT FOR WATER SUPPLY PURPOSES 3 METRES WIDE AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN SO BURDENED IN THE TITLE DIAGRAM
4 DP1086823 EASEMENT FOR DRAINAGE OF WATER VARIABLE WIDTH DESIGNATED (C) AFFECTING THE PART(S) OF THE LAND ABOVE DESCRIBED SHOWN SO BURDENED IN THE TITLE DIAGRAM
5 DP1086823 RESTRICTION(S) ON THE USE OF LAND VARIABLE WIDTH DESIGNATED (L) AS REFERRED TO AND NUMBERED (8) IN THE SECTION 88B INSTRUMENT
6 DP1086823 RESTRICTION(S) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (12) IN THE SECTION 88B INSTRUMENT
7 DP1086823 RESTRICTION(S) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (13) IN THE SECTION 88B INSTRUMENT
8 DP1086823 RESTRICTION(S) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (14) IN THE SECTION 88B INSTRUMENT
9 DP1086823 RESTRICTION(S) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (15) IN THE SECTION 88B INSTRUMENT
10 DP1086823 RESTRICTION(S) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (16) IN THE SECTION 88B INSTRUMENT
11 DP1086823 RESTRICTION(S) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (17) IN THE SECTION 88B INSTRUMENT
12 DP1086823 RESTRICTION(S) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (18) IN THE SECTION 88B INSTRUMENT
13 DP1086823 RESTRICTION(S) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (19) IN THE SECTION 88B INSTRUMENT
14 DP1086823 RESTRICTION(S) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (20) IN THE SECTION 88B INSTRUMENT

END OF PAGE 1 - CONTINUED OVER

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 24/1086823 PAGE 2

SECOND SCHEDULE (19 NOTIFICATIONS) (CONTINUED)

15 DP1086823 RESTRICTION(S) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (21) IN THE SECTION 88B INSTRUMENT
16 DP1086823 RESTRICTION(S) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (22) IN THE SECTION 88B INSTRUMENT
17 DP1086823 RESTRICTION(S) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (23) IN THE SECTION 88B INSTRUMENT
18 DP1086823 RESTRICTION(S) ON THE USE OF LAND DESIGNATED (X) AS REFERRED TO AND NUMBERED (24) IN THE SECTION 88B INSTRUMENT
19 DP1086823 RESTRICTION(S) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (25) IN THE SECTION 88B INSTRUMENT

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
9/10/2013 11:45AM

FOLIO: 24/1086823

First Title(s): OLD SYSTEM
Prior Title(s): 102/841639

Recorded	Number	Type of Instrument	C.T. Issue
27/10/2005	DP1086823	DEPOSITED PLAN	FOLIO CREATED EDITION 1
16/3/2006	AB990994	DISCHARGE OF MORTGAGE	
16/3/2006	AB990997	MORTGAGE	EDITION 2
22/12/2006	AC830510	WITHDRAWAL OF CAVEAT	
11/12/2007	AD628070	DISCHARGE OF MORTGAGE	
11/12/2007	AD628072	MORTGAGE	EDITION 3
23/2/2012	AG832522	DISCHARGE OF MORTGAGE	
23/2/2012	AG832523	* TRANSFER *	EDITION 4

*** END OF SEARCH ***

Form: 01T
Release: 4.2
www.lpma.nsw.gov.au

TRANSFER

New South Wales
Real Property Act 1900

AG832523X

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Reg by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY Office of State Revenue use only

Office of State Revenue
NSW Treasury
Client No: 1411509
Duty: $10.00 Trans No: 6583098 2652
Asst details:
23/12/13

(A) **TORRENS TITLE** 24/1086823

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
W	Clive Hughes, 50 Wyona Ave, Freshwater, NSW 2096 Reference: Yewens.	T JT TF TJ TK TW

(C) **TRANSFEROR** DIMPALIS PTY LIMITED A.C.N. 074 097 340

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 637,000.00 and as regards

(E) **ESTATE** the abovementioned land transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** COWBRIDGE HOLDINGS PTY LTD A.C.N. 078 187 550

(I) **TENANCY:**

DATE

(J) I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of witness:

Name of witness:
Address of witness:

Certified correct for the purposes of the Real Property Act 1900 by the person(s) named below who signed this this instrument pursuant to the power of attorney specified.

Signature of attorney:

Attorney's name: SEE ANNEXURE A
Signing on behalf of:
Power of attorney-Book:
-No.:

Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the corporation named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Corporation: COWBRIDGE HOLDINGS PTY LTD A.C.N. 078 187 550
Authority: section 127 of the Corporations Act 2001

Signature of authorised person: Sole Director + Secretary C. Hughes
Name of authorised person: CLIVE HUGHES
Office held:

Signature of authorised person:
Name of authorised person:
Office held:

(K) The transferee certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. Full name: Signature:

1101

Annexure A to transfer between:

DIMPALIS PTY LIMITED A.C.N. 074 097 340 (as transferor) and **COWBRIDGE HOLDINGS PTY LTD A.C.N. 078 187 550** (as transferee)

I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of witness:

Name of witness: Elaine Hall

Address of witness: L21/1 Castlereagh St. Sydney 2000.

Certified correct for the purposes of the Real Property Act 1900 by the person(s) name below who signed this instrument pursuant to the power of attorney specified.

Signature of attorney:
Attorney's name: Peter Douglas McLachlan
Signing on behalf of: Dimpalis Pty Limited
Power of attorney-Book: 4592 No.506

Signature of attorney:
Attorney's name: Toby Dylan Carter
Signing on behalf of: Dimpalis Pty Limited
Power of attorney-Book:4592 No, 506

G:\DOCUMENT\BAMB-PRO\90519\P008.DOC

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
9/10/2013 11:46AM

FOLIO: 102/841639

First Title(s): OLD SYSTEM
Prior Title(s): 1/536077

Recorded	Number	Type of Instrument	C.T. Issue
9/8/1994	DP841639	DEPOSITED PLAN	FOLIO CREATED EDITION 1
14/5/2003	9603404	TRANSFER ~	
14/5/2003	9603405	MORTGAGE	EDITION 2
10/6/2004	AA711828	DISCHARGE OF MORTGAGE	
10/6/2004	AA711829	MORTGAGE	EDITION 3
30/8/2004	AA874904	CAVEAT	
24/1/2005	DP1075537	DEPOSITED PLAN	EDITION 4
26/10/2005	AB866435	DEPARTMENTAL DEALING	
27/10/2005	AB869813	DEPARTMENTAL DEALING	
27/10/2005	DP1086823	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
9/10/2013 11:46AM

FOLIO: 1/536077

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 11098 FOL 150

Recorded	Number	Type of Instrument	C.T. Issue
28/3/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
26/7/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
4/10/1988	X886454	TRANSFER	EDITION 1
19/10/1988	X931654	DEPARTMENTAL DEALING	EDITION 2
31/7/1989	Y516622	TRANSFER	EDITION 3
9/8/1994	DP841639	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

RP 13 STAMP DUTY (i) [redacted]

Y516622

TRANSFER

REAL PROPERTY ACT, 1900

T | CB | 1 of 1 | K
$ 44

	Torrens Title Reference	If Part Only, Delete Whole and Give Details	Location
DESCRIPTION OF LAND Note (a)	IDENTIFIER 1/536077	WHOLE	CAMDEN

TRANSFEROR Note (b)

HER MOST GRACIOUS MAJESTY QUEEN ELIZABETH THE SECOND ON BEHALF OF THE MINISTER FOR FAMILY AND COMMUNITY SERVICES FOR THE FAMILY AND COMMUNITY SERVICES DEPARTMENT

ESTATE Note (c)

(the abovenamed TRANSFEROR) hereby acknowledges receipt of the consideration of $ 880,000.00 and transfers an estate in fee simple in the land above described to the TRANSFEREE

TRANSFEREE Note (d)

THE UNIVERSITY OF SYDNEY

OFFICE USE ONLY: S

TENANCY Note (e)

XXXXXXXXXXXXXXXXXXXX

PRIOR ENCUMBRANCES Note (f)

subject to the following PRIOR ENCUMBRANCES 1. .... 2. .... 3. ....

DATE 18 - 7 - 1989

We hereby certify this dealing to be correct for the purposes of the Real Property Act, 1900.

EXECUTION Note (g)

Signed in my presence by the transferor who is personally known to me

[signature]
Signature of Witness

DAVID BROWN
Name of Witness (BLOCK LETTERS)

CLERK 66 GLANMIRE RD
BAULKHAM HILLS 2153
Address and occupation of Witness

AS DELEGATE FOR THE MINISTER FOR FAMILY & COMMUNITY SERVICES.

[signature]
Signature of Transferor

Note (g)

Signed in my presence by the transferee who is personally known to me

....
Signature of Witness

....
Name of Witness (BLOCK LETTERS)

....
Address and occupation of Witness

9289

The University of Sydney ... on the 14th day of July One Thousand Nine Hundred and eighty-nine in pursuance of authority given by the Vice-Chancellor in letter dated the 6th day of July One Thousand Nine Hundred and eighty-nine

[signature]
VICE-CHANCELLOR

[signature]
Signature of Transferee
ACTING REGISTRAR

289

TO BE COMPLETED BY LODGING PARTY Notes (h) and (i)

$44
S

LODGED BY

MINTER ELLISON
SOLICITOR
68 PITT STREET, SYDNEY
FACSIMILE No: (02) 225-2711
Delivery Box: 599D

Delivery Box Number

LOCATION OF DOCUMENTS		
CT	OTHER	
/		Herewith. /
		In L.T.O. with
		Produced by

OFFICE USE ONLY

Checked	Passed	REGISTERED -19
CB19		31 JUL 1989
Signed	Extra Fee	

Secondary Directions	
Delivery Directions	CT 599D.

NEW SOUTH WALES

[redacted]FICATE OF TITLE

[redacted]OPERTY ACT, 1900, as amended.

Appln. No. 39865
Prior Title Vol. 7526 Fol. 122

Vol. 11098 Fol. 150

CANCELLED [Iss]ued 21-7-1969

(Page 1) Vol. 11098 Fol. 150

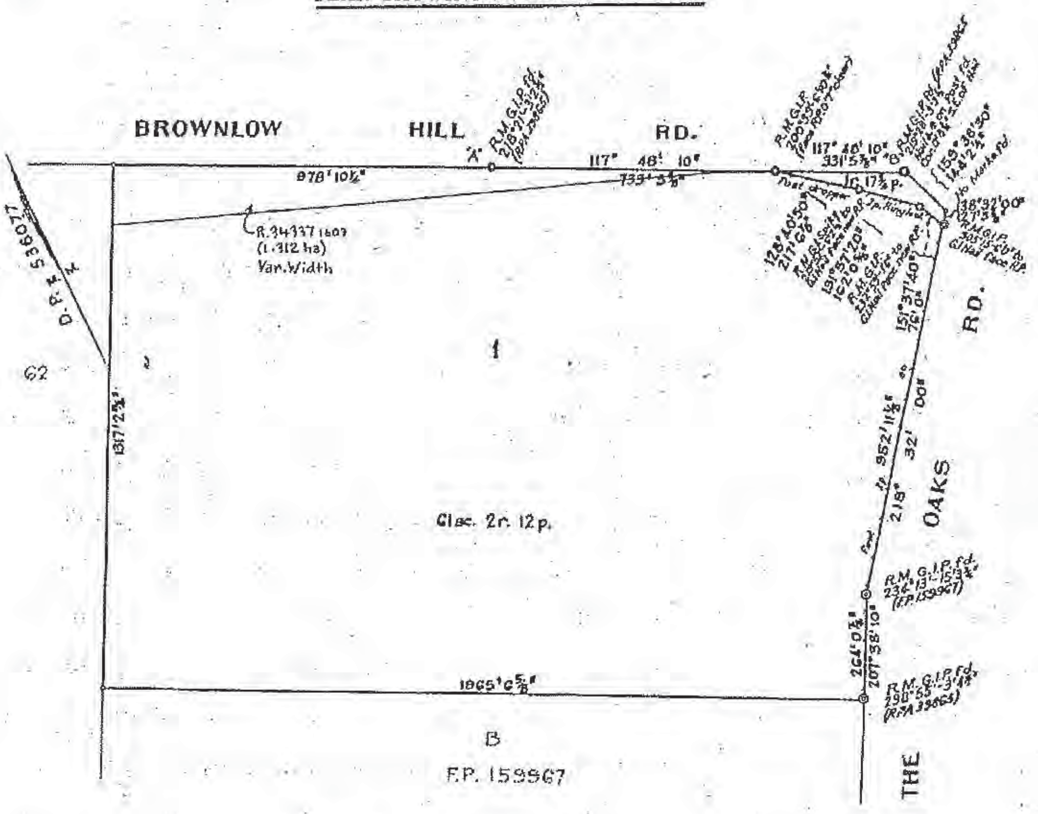
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Sch[edule].

SEE AUTO FOLIO

Witness *L. Rollison*

J. Watson
Registrar General.

PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO

S

Estate in Fee Simple in Lot 1 in Deposited Plan 536077 at Camden in the Municipality of Camden Parish of Camden and County of Camden being part of Portion 12 granted to John Macarthur on 5-10-1825.

FIRST SCHEDULE

~~COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION.~~

SECOND SCHEDULE

GRY

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

J. Watson
Registrar General.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

Vol. 11098 Fol 150

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
Minister for Public Works.	Transfer	N695824	30.1.1973.	1.5.1974.	[signature]

CANCELLED

SEE AUTO FOLIO

N 695824 Road Action Gaz 10-5-74 Folio 8 34337

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION
~~Tra~~Resumption	N869960		The land shown byFirm Lines (1.312ha) Var Width in the plan hereon is Public Road. Declaration is limited to a depth of 20 metres from the surface	1-7-1974	[signature]	

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

PLAN FORM 2 (APPROVED FORM 3)

Plan drawing only to appear in this space

SIGNATURES, AND SEALS ONLY

SUNCORP-METWAY Ltd A.C.N. 010 831 722 BY ITS ATTORNEY

MARIO MATOSO CALEFFI

WHO CERTIFIES THAT THEY ARE A LEVEL B ATTORNEY PURSUANT TO POWER OF ATTORNEY BOOK 3919 NO. 372 OF WHICH THEY HAVE RECEIVED NO NOTICE OF REVOCATION
SIGNED IN MY PRESENCE BY THE SAID ATTORNEY WHO IS PERSONALLY KNOWN TO ME

WITNESS

Common Seal DIMPALIS PTY LTD ACN 074 097 340

C. Hughes Director

Secretary

Common Seal MUWUPA PTY. LIMITED A.C.N. 002 350 238

G.D. Fasiis Director

R.E. Fasiis Director/Sec.

Mortgagee under Mortgage No. 0836712
Signed at Sydney this 19th day of October 2005 for National Australia Bank Limited ABN 12 004 044 937
by Fiona Ferguson its duly appointed Attorney under Power of Attorney No. 548 Book 3834

Manager

Witness GERALDINE L. MIGUEL

Department of Lands Approval

I .... (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given.

Signature: ....

Date: ....

File Number: ....

Office: ....

Subdivision Certificate

I certify that the provisions of s 109J of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to the proposed SUBDIVISION set out herein.

* (Insert 'subdivision' or 'new road')

* Authorised Person/General Manager/Accredited Certifier

Consent Authority: CAMDEN COUNCIL

Date of Endorsement: 21 SEPTEMBER 2005

Accreditation No: ....

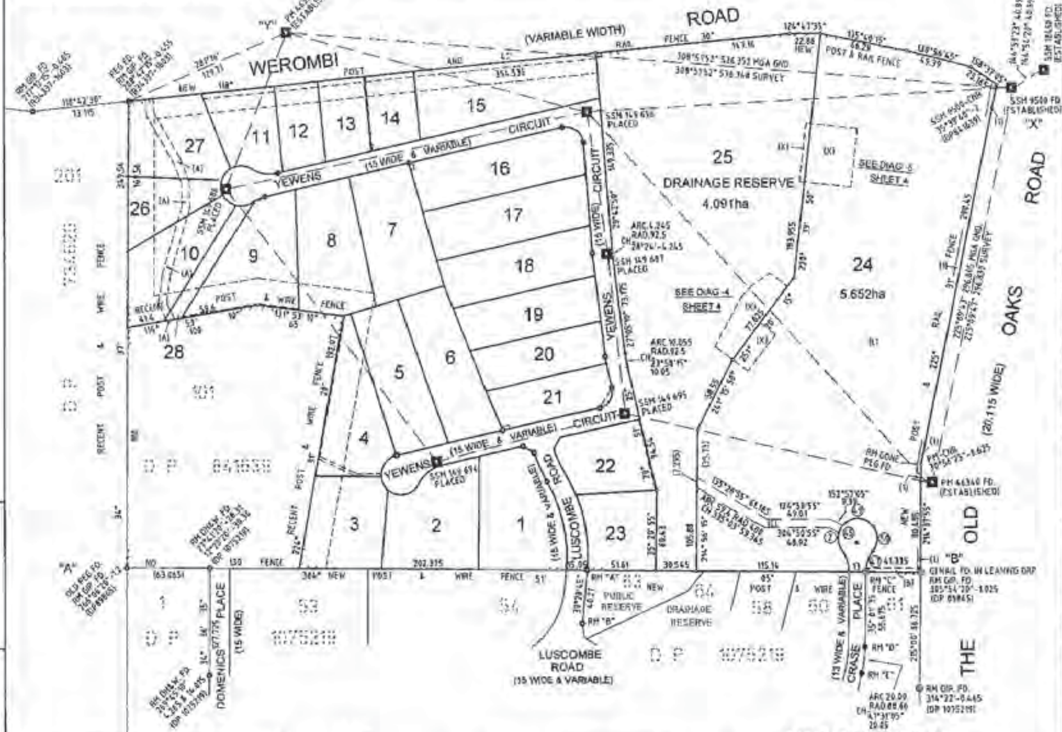
Subdivision Certificate No: 39/2005

Council File No: 09.8125: 15/2

*Delete whichever is inapplicable

SCHEDULE OF SSM CONNECTIONS			
FROM	TO	BEARING	DISTANCE
SSM 9500	SSM 149 696	311°03'50"	308.649
PM 46323	SSM 149 696	159°09'45"	254.330
PM 46323	SSM 149 686	238°33'55"	125.615
SSM 149 686	SSM 149 696	117°28'35"	277.948
SSM 149 696	SSM 149 687	265°57'05"	166.026
SSM 149 687	SSM 149 695	208°18'55"	120.084
SSM 149 695	SSM 149 694	239°36'56"	146.891
SSM 149 694	SSM 149 656	314°32'10"	159.385
SSM 149 696	PM 46340	171°40'45"	372.472
SSM 149 695	PM 46340	136°22'40"	228.842

SURVEYING REGULATION 2001: CLAUSE 32(2) M.G.A. COORDINATES				
MARK	EASTING	NORTHING	CLASS	ORDER
PM 46323	285 153.403	6 229 188.641	B	2
PM 46340	285 360.590	6 228 642.727	A	1
SSM 9500	285 571.098	6 228 852.036	B	2
SSM 18458	285 594.613	6 228 8.578	B	2
SOURCE: M.G.A. COORDINATES ADOPTED FROM S.C.I.M.S DATED 23-MARCH-2005				
COMBINED SCALE FACTOR 1.000154 ZONE 56				



*-CRASE PLACE (13 WIDE & VARIABLE)
(X)-RESTRICTION ON THE USE OF LAND
(A)-RIGHT OF CARRIAGEWAY AND EASEMENT FOR SERVICES 6 WIDE (DP 841639)
(B)-EASEMENT FOR WATER SUPPLY PURPOSES 3 WIDE (DP 1035537)
(C)-EASEMENT FOR DRAINAGE OF WATER VARIABLE WIDTH
(L)-RESTRICTION ON THE USE OF LAND VARIABLE WIDTH

SCHEDULE OF REFERENCE MARKS			
No.	TYPE (ORIGIN)	BEARING	DISTANCE
A	DH&W (DP1075219)	91°25'40"	4.365
	DH&W (DP1075219)	112°46'45"	12.015
B	DH&W (DP1075219)	120°41'50"	3.49 & 13.695
C	DH&W (DP1075219)	75°07'30"	5.455
	DH&W (DP1075219)	109°27'40"	18.445
D	DH&W (DP1075219)	125°01'35"	3.33 & 9.19
E	DH&W (DP1075219)	138°00'35"	3.35 & 9.525

"A" - "B"
RM GP FD
304°51'05"-599.085 SURVEY
304°50'35"-599.085 DP 1035219

SCHEDULE OF SHORT LINES		
No.	BEARING	DISTANCE
2	332°57'05"	3.93

SCHEDULE OF CURVED LINES				
	CHORD			
LINE	BEARING	DISTANCE	ARC	RADIUS
45	62°21'30"	5.99	5.99	15
47	33°44'35"	16.92	17.27	26.5
49	125°47'15"	23.615	27.185	15
50	215°01'50"	18.19	19.565	15

SURVEYOR'S REFERENCE: 103535-DP(Issue3) CHECKLIST

WARNING CREASING OR FOLDING WILL LEAD TO REJECTION

DP1086823

Registered AW 26.10.2005

Title System: TORRENS

Purpose: SUBDIVISION

Ref. Map: U6422 - 2, U6430 - 8

Last Plan: DP 841639

PLAN OF: SUBDIVISION OF LOT 102 DP 841639

Lengths are in metres. Reduction Ratio 1:2000

LGA: CAMDEN

Locality: GRASMERE

Parish: CAMDEN

County: CAMDEN

This is sheet 1 of my plan in 4 sheets. (Delete if inapplicable)

Surveying Regulation, 2001

I, JONATHAN D. SAXON of CLEMENT & REO PTY LTD PO BOX 144, FAIRFIELD NSW, 1860, a surveyor registered under the Surveying Act 2002, hereby certify that the survey represented in this plan is accurate, has been made in accordance with the Surveying Regulation, 2001 and was completed on 1-June-2005. The survey relates to LOTS 1 - 28 Inclusive

(here specify the land actually surveyed, or specify any land shown in the plan that is not the subject of the survey)

Signature .... Dated 19/9/05

Registered Land Surveyor under the Surveying Act 2002

Datum Line: "X" - "Y"

Type: Urban/Rural

Plans used in preparation of survey / compilation

D.P. 1075219	D.P. 536077
D.P. 841639	D.P. 734628
D.P. 506845	D.P. 1063780
D.P. 159967	D.P. 89865
R 34337-1603	D.P. 803468

PANEL FOR USE ONLY for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

IT IS INTENDED TO DEDICATE TO THE PUBLIC AS ROAD:
1-LUSCOMBE ROAD 15 WIDE & VARIABLE
2-YEWENS CIRCUIT 15 WIDE & VARIABLE
3-CRASE PLACE 13 WIDE & VARIABLE

IT IS INTENDED TO CREATE LOT 25 AS DRAINAGE RESERVE

PURSUANT TO SEC. 88B OF THE CONVEYANCING ACT 1919, AS AMENDED, IT IS INTENDED TO RELEASE:
1-RIGHT OF CARRIAGEWAY ~~& EASEMENT FOR SERVICES~~ 10 WIDE (DP841639)
3-EASEMENT FOR WATER SUPPLY OVER EXISTING LINE OF PIPES (DP 841639)
4-EASEMENT TO DRAIN WATER 2 WIDE (DP 841639)
~~RESTRICTION ON THE USE OF LAND (DP 841639)~~
5-RIGHT OF CARRIAGEWAY 13 WIDE AND VARIABLE (DP 1035539)
2-EASEMENT FOR SERVICES 10 WIDE
FOR CONTINUATION SEE SHEET 2 (DP841639)

*OFFICE USE ONLY

Req:R139920 /Doc:DP 1086823 P /Rev:28-Oct-2005 /Sts:SC.OK /Prt:28-Aug-2013 13:22 /Pgs:ALL /Seq:1 of 4
Ref:enviro /Src:T

PLAN FORM 3 (APPROVED FORM 5) To be used in conjunction with Plan Form 2

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

SCHEDULE OF REFERENCE MARKS

No.	Type (Origin)	Bearing	Distance
A	DH&W (DP1075219)	91°35'40"	4.765
	DH&W (DP1075219)	112°43'45"	12.015
1	DH&W	273°45'15"	3.385
	DH&W	274°43'35"	11.485
2	DH&W	294°51'	5.39
	DH&W	295°05'	18.755
3	DH&W	291°21'30"	8.625
	DH&W	291°28'20"	20.5
4	DH&W'S	21°29'40"	3.415 & 11.535
5	DH&W'S	21°29'40"	3.45 & 28.45
6	DH&W'S	21°29'40"	3.39 & 11.58
7	DH&W	218°51'25"	3.34
	DH&W	291°40'10"	18.505
8	DH&W'S	297°05'10"	3.375 & 15.545
9	DH&W	299°52'10"	14.575
	DH&W	308°12'	3.425

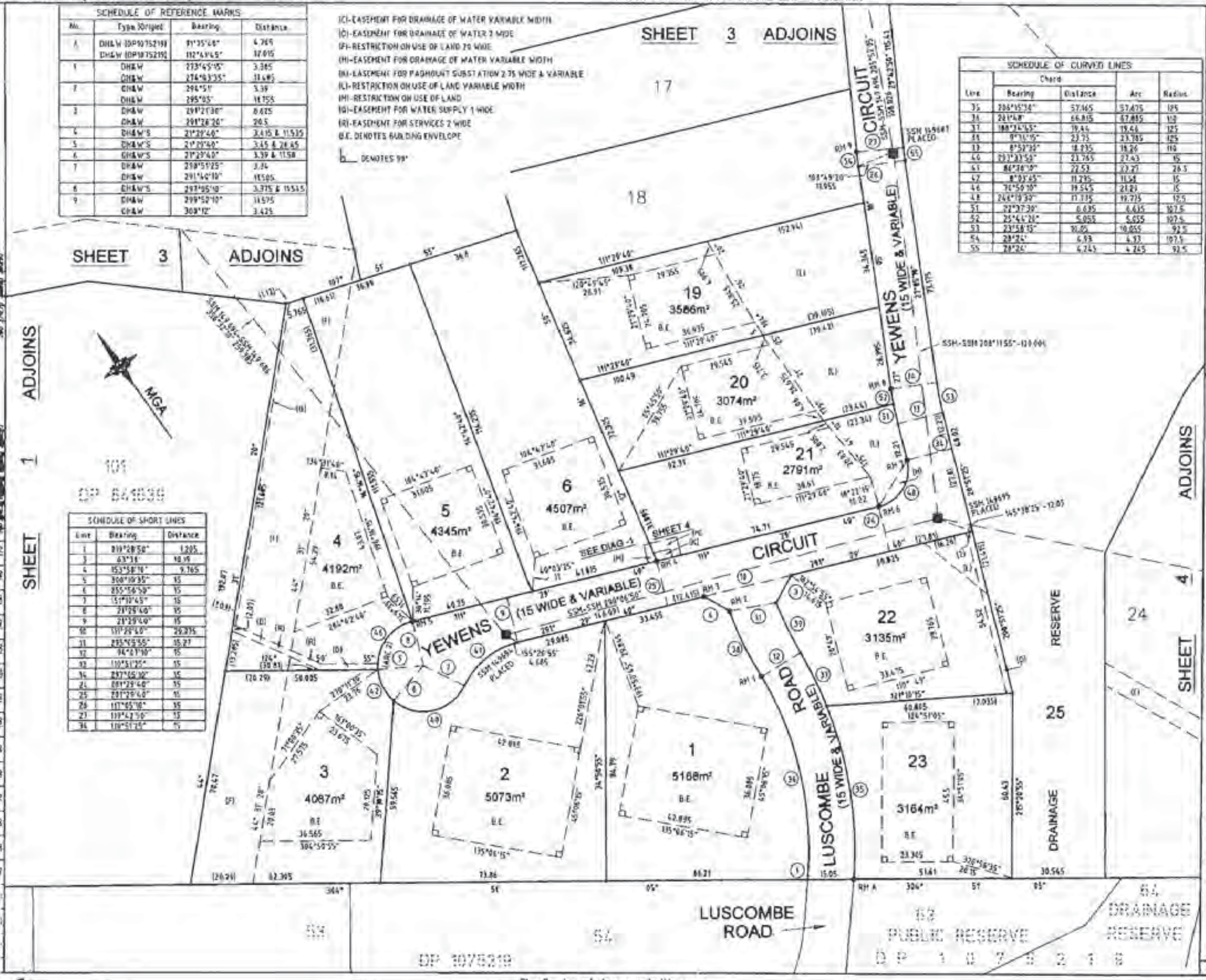
(C)-EASEMENT FOR DRAINAGE OF WATER VARIABLE WIDTH
(D)-EASEMENT FOR DRAINAGE OF WATER 2 WIDE
(F)-RESTRICTION ON USE OF LAND 20 WIDE
(H)-EASEMENT FOR DRAINAGE OF WATER VARIABLE WIDTH
(K)-EASEMENT FOR PADMOUNT SUBSTATION 2.75 WIDE & VARIABLE
(L)-RESTRICTION ON USE OF LAND VARIABLE WIDTH
(M)-RESTRICTION ON USE OF LAND
(Q)-EASEMENT FOR WATER SUPPLY 1 WIDE
(R)-EASEMENT FOR SERVICES 2 WIDE
B.E. DENOTES BUILDING ENVELOPE
DENOTES 90°

SCHEDULE OF CURVED LINES

Line	Chord Bearing	Chord Distance	Arc	Radius
35	206°15'30"	57.165	57.675	125
36	201°48'	66.815	67.855	110
37	188°24'45"	19.44	19.46	125
38	9°14'15"	23.75	23.785	125
39	8°52'35"	18.235	18.26	110
40	293°37'53"	23.765	27.43	15
41	86°38'10"	22.53	23.27	26.5
42	8°03'45"	11.295	11.58	15
46	74°50'10"	19.545	21.21	15
48	246°19'33"	17.775	19.775	12.5
51	22°37'30"	6.635	6.635	107.5
52	25°44'20"	5.055	5.055	107.5
53	23°58'15"	10.05	10.055	92.5
54	28°24'	4.93	4.93	107.5
55	28°24'	4.245	4.245	92.5

SCHEDULE OF SHORT LINES

Line	Bearing	Distance
1	219°28'50"	1.205
3	63°38'	10.19
4	153°58'10"	9.765
5	300°10'35"	15
6	255°56'50"	15
7	151°10'45"	15
8	21°29'40"	15
9	21°29'40"	15
10	111°29'40"	29.235
11	235°45'55"	15.27
12	94°01'10"	15
13	110°51'25"	15
14	297°05'10"	15
24	201°29'40"	15
25	201°29'40"	15
26	117°05'10"	15
27	119°42'50"	15
34	110°51'25"	15



Plan Drawing only to appear in this space

DP1086823

*OFFICE USE ONLY

Registered: [redacted] AW 26.10.2005

This is sheet 2 of my plan in 4 sheets dated 1/6/05

Registered Land Surveyor under the Surveying Act 2002

This is sheet 2 of the plan of 4 sheets covered by my Certificate No. 39 of 2005

Authorised Person/~~General Manager/Accredited Certifier~~

LGA: CAMDEN

~~Suburb~~/Locality: GRASMERE

Parish: CAMDEN

County: CAMDEN

For use where space is insufficient in any panel on Plan Form 2.

PURSUANT TO SEC 88B OF THE CONVEYANCING ACT 1919, AS AMENDED, IT IS INTENDED TO CREATE:

1-EASEMENT FOR DRAINAGE OF WATER VARIABLE WIDTH "C"
2-EASEMENT FOR DRAINAGE OF WATER 2 WIDE
3-EASEMENT FOR DRAINAGE OF WATER 4 WIDE
4-RESTRICTION ON THE USE OF LAND 20 WIDE
5-RESTRICTION ON THE USE OF LAND 15 WIDE
6-EASEMENT FOR SERVICES AND EASEMENT FOR ACCESS 10 WIDE AND VARIABLE WIDTH
7-EASEMENT FOR PADMOUNT SUBSTATION 2.75 WIDE AND VARIABLE "K"
8-RESTRICTION ON THE USE OF LAND VARIABLE WIDTH "L"
9-RESTRICTION ON THE USE OF LAND "M"
10-EASEMENT FOR UNDERGROUND CABLES 1 WIDE
11-EASEMENT FOR DRAINAGE OF WATER VARIABLE WIDTH "H"
12-RESTRICTION ON THE USE OF LAND
13-RESTRICTION ON THE USE OF LAND
14-RESTRICTION ON THE USE OF LAND
15-RESTRICTION ON THE USE OF LAND
16-RESTRICTION ON THE USE OF LAND
17-RESTRICTION ON THE USE OF LAND
18-RESTRICTION ON THE USE OF LAND
19-RESTRICTION ON THE USE OF LAND
20-RESTRICTION ON THE USE OF LAND
21-RESTRICTION ON THE USE OF LAND
22-RESTRICTION ON THE USE OF LAND
23-RESTRICTION ON THE USE OF LAND
24-RESTRICTION ON THE USE OF LAND "X"
25-RESTRICTION ON THE USE OF LAND
26-EASEMENT FOR SERVICES 1 WIDE
27-EASEMENT FOR SERVICES 2 WIDE
28-EASEMENT FOR WATER SUPPLY 1 WIDE
FOR CONTINUATION SEE SHEET 3

Reduction Ratio 1:800

SURVEYOR'S REFERENCE: 103535-DP(Issue3)

PLAN FORM 3 (APPROVED FORM 5) To be used in conjunction with Plan Form 2

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

SCHEDULE OF REFERENCE MARKS			
No.	Type (Origin)	Bearing	Distance
9	DH&W	299°52'10"	11.575
	DH&W	109°12'	3.475
10	DH&W	299°42'30"	3.34 & 11.58
11	DH&W	201°17'05"	3.345
	DH&W	201°27'05"	11.515
12	DH&W	201°10'05"	3.44
	DH&W	201°26'10"	11.54
13	DH&W	201°28'	14.99
	DH&W	201°27'20"	3.75
14	DH&W	21°26'50"	11.59
	DH&W	21°20'	3.385

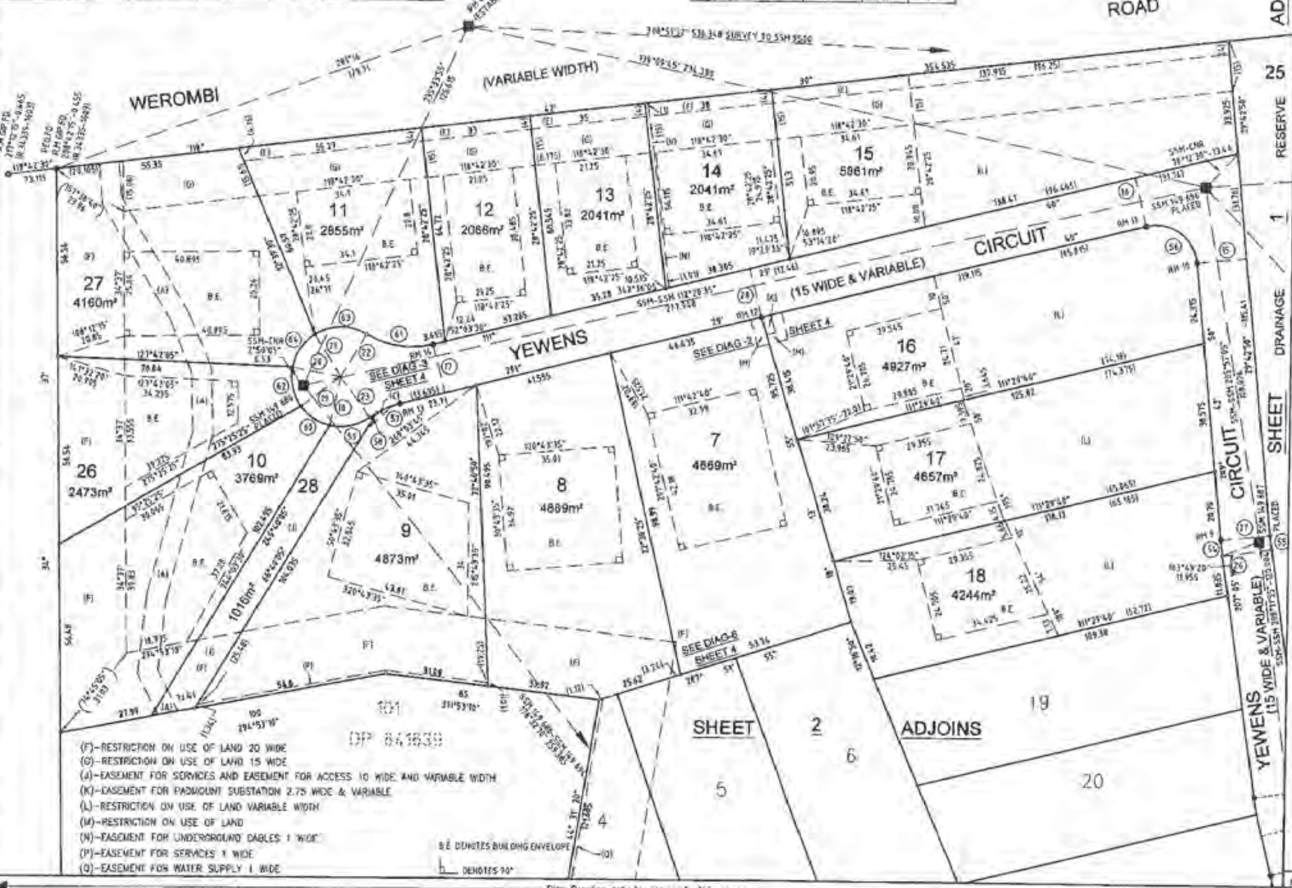
SCHEDULE OF SHORT LINES		
Line	Bearing	Distance
15	119°42'50"	15
16	21°29'40"	15
17	201°29'40"	15
18	221°55'30"	15
19	268°47'25"	15
20	130°12'	15
21	183°35'23"	15
22	246°11'25"	15
23	179°34'30"	15
26	117°05'05"	15
27	299°42'50"	15
28	21°29'40"	15

(A)-RIGHT OF CARRIAGEWAY AND EASEMENT FOR SERVICES 6 WIDE (DP 841639)

(C)-EASEMENT FOR DRAINAGE OF WATER VARIABLE WIDTH

(E)-EASEMENT FOR DRAINAGE OF WATER 4 WIDE

SCHEDULE OF CURVED LINES				
	Chord			
Line	Bearing	Distance	Arc	Radius
54	208°24'	4.93	4.93	127.5
55	28°24'	4.245	4.245	92.5
56	154°38'15"	18.9	21.43	12.5
57	103°53'40"	7.72	7.8	28.5
58	92°46'10"	2.335	2.335	28.5
59	293°44'55"	12.285	12.655	15
60	338°21'25"	10.475	10.7	15
61	333°50'35"	24.15	23.675	28.5
62	27°29'40"	12.46	12.41	15
63	124°55'35"	15.57	16.37	15
64	69°55'40"	12.07	12.425	15



(F)-RESTRICTION ON USE OF LAND 20 WIDE

(G)-RESTRICTION ON USE OF LAND 15 WIDE

(J)-EASEMENT FOR SERVICES AND EASEMENT FOR ACCESS 10 WIDE AND VARIABLE WIDTH

(K)-EASEMENT FOR PADMOUNT SUBSTATION 2.75 WIDE & VARIABLE

(L)-RESTRICTION ON USE OF LAND VARIABLE WIDTH

(M)-RESTRICTION ON USE OF LAND

(N)-EASEMENT FOR UNDERGROUND CABLES 1 WIDE

(P)-EASEMENT FOR SERVICES 1 WIDE

(Q)-EASEMENT FOR WATER SUPPLY 1 WIDE

DP1086823

Registered: [redacted] AW 28.10.2005

This is sheet 3 of my plan in 4 sheets dated 1/8/05

Registered Land Surveyor under the Surveying Act 2002

This is sheet 3 of the plan of 4 sheets covered by my Certificate No. 39 of 2005

Authorised Person/~~General Manager/Accredited Certifier~~

LGA:	CAMDEN
~~Subdivision~~/Locality:	GRASMERE
Parish:	CAMDEN
County:	CAMDEN

For use where space is insufficient in any panel on Plan Form 2.

OFFICE USE ONLY

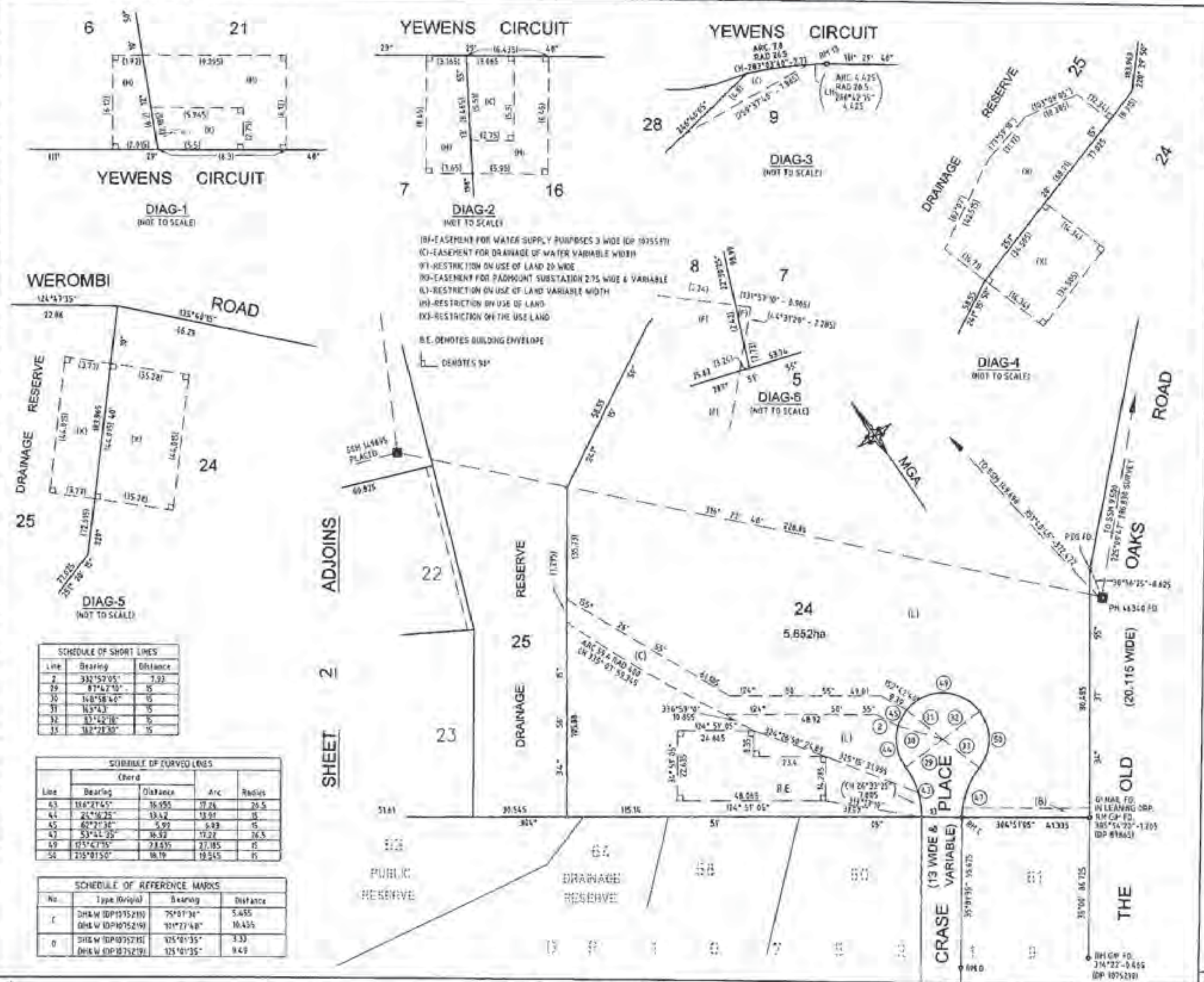
Plan Drawing only to appear in this space

Reduction Ratio 1:800

SURVEYOR'S REFERENCE: 103535-DP(issue3)

PLAN FORM 3 (APPROVED FORM 5) To be used in conjunction with Plan Form 2

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION



SCHEDULE OF SHORT LINES		
Line	Bearing	Distance
2	332°57'05"	7.93
29	87°42'10"	15
30	140°58'40"	15
31	143°43'	15
32	37°42'10"	15
33	162°21'30"	15

SCHEDULE OF CURVED LINES				
Line	Chord		Arc	Radius
	Bearing	Distance		
43	186°21'45"	16.955	17.26	26.5
44	24°16'25"	13.42	13.91	15
45	62°21'30"	5.93	5.93	15
47	53°44'35"	16.92	17.22	26.5
49	173°47'15"	23.635	27.185	15
54	215°01'50"	18.19	19.545	15

SCHEDULE OF REFERENCE MARKS			
No.	Type (Origin)	Bearing	Distance
C	DH&W (DP1075219) DH&W (DP1075219)	75°07'30" 101°27'40"	5.455 10.455
D	DH&W (DP1075219) DH&W (DP1075219)	125°01'35" 125°01'35"	3.33 9.49

Plan Drawing only to appear in this space

DP1086823

Registered: [redacted] AW 26.10.2005

This is sheet 4 of my plan in 4 sheets dated

Registered Land Surveyor under the Surveying Act 2002

This is sheet 4 of the plan in 4 sheets covered by my Certificate No. 34 of 2005

Authorised Person/General Manager/Accredited Certifier

LGA: CAMDEN

Suburb/Locality: GRASMERE

Parish: CAMDEN

County: CAMDEN

For use where space is insufficient in any panel on Plan Form 2.

*OFFICE USE ONLY

Reduction Ratio 1:500

SURVEYOR'S REFERENCE: 103535-sz(Issue3)

Appendix F
NSW EPA Online Contaminated Land Register and Online Licence Register Search Results

Phase 1 Contamination Assessment and Salinity Assessment
Part Lot 24 DP1086823, 10 Crase Place,
Grasmere, NSW

Healthy Environment, Healthy Community, Healthy Business

You are here: Home > Contaminated land > Record of notices

Search results

Your search for:LGA: Camden Council

Search Again
Refine Search

did not find any records in our database.

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the planning process.

Search TIP

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

... more search tips

More information about particular sites may be available from:

- The POEO public register
- The appropriate planning authority: for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act.

See What's in the record and What's not in the record.

If you want to know whether a specific site has been the subject of notices issued by the EPA under the CLM Act, we suggest that you search by Local Government Area only and carefully review the sites that are listed.
This public record provides information about sites regulated by the EPA under the Contaminated Land Management Act 1997, including sites currently and previously regulated under the Environmentally Hazardous Chemicals Act 1985. Your inquiry using the above search criteria has not matched any record of current or former regulation. You should consider searching again using different criteria. The fact that a site does not appear on the record does not necessarily mean that it is not affected by contamination. The site may have been notified to the EPA but not yet assessed, or contamination may be present but the site is not yet being regulated by the EPA. Further information about particular sites may be available from the appropriate planning authority, for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act. In addition the EPA may be regulating contamination at the site through a licence under the Protection of the Environment Operations Act 1997. You may wish to search the POEO public register.POEO public register

31 October 2013

NSW Environment Protectior

List of NSW Contaminated Sites Notified to EPA as of 2 October 2013

Background

In response to 2008 amendments to the *Contaminated Land Management Act 1997* (CLM Act) clarifying the Section 60 duty to report contaminated sites, the Environment Protection Authority (EPA) has received 1,059 notifications (as of 2 October 2013) from owners or occupiers of sites where they believe the site is contaminated.

A strategy to systematically assess, prioritise and respond to these notifications has been developed by the EPA. This strategy acknowledges the EPA's obligations to make information available to the public under *Government Information (Public Access) Act 2009*.

When a site is notified to the EPA, it may be accompanied by detailed site reports where the owner has been proactive in addressing the contamination and its source. However, often there is minimal information on the nature or extent of the contamination.

For some notifications, the information indicates the contamination is securely immobilised within the site, such as under a building or carpark, and is not currently causing any offsite consequences to the community or environment. Such sites would still need to be cleaned up, but this could be done in conjunction with any subsequent building or redevelopment of the land. These sites may not require intervention under the CLM Act, but could be dealt with through the planning and development consent process.

Where indications are that the nominated site is causing actual harm to the environment or an unacceptable offsite impact (i.e. it is a "significantly contaminated site"), the EPA would apply the regulatory provisions of the CLM Act to have the responsible polluter and/or landowner investigate and remediate the site.

As such, the sites notified to the EPA and presented in the following table are at various stages of the assessment and/or remediation process. Understanding the nature of the underlying contamination, its implications and implementing a remediation program where required, can take a considerable period of time. The tables provide an indication, in relation to each nominated site, as to the management status of that particular site. Further detailed information may be available from the EPA or the responsible landowner.

The following questions and answers may assist those interested in this issue:

Frequently asked questions

What is the difference between the "List of NSW Contaminated Sites Notified to the EPA" and the "Contaminated Land: Record of Notices"?

A site will be on the Contaminated Land: Record of Notices only if the EPA has issued a regulatory notice in relation to the site under the *Contaminated Land Management Act 1997*.

The sites appearing on this "List of NSW contaminated sites notified to the EPA" indicate that the notifiers consider that the sites are contaminated and warrant reporting to the EPA. However, the contamination may or may not be significant enough to warrant regulation by the EPA. The EPA needs to review and, if necessary, obtain more information before it can make a determination as to whether the site warrants regulation.

Why my site appears on the list?

Your site appears on the list because of one or more of the following reasons:

- The site owner and/or the person partly or fully responsible for causing the contamination notified to the EPA about the contamination under Section 60 of the *Contaminated Land Management Act 1997*. In other words, the site owner or the "polluter" believes the site is contaminated.
- The EPA has been notified via other means and is satisfied that the site is or was contaminated.

Does the list contain all contaminated sites in NSW?

No. The list only contains contaminated sites that the EPA is aware of, with regard to its regulatory role under the CLM Act. An absence of a site from the list does not necessarily imply the site is not contaminated.

The EPA relies upon responsible parties to notify contaminated sites.

How are these notified contaminated sites managed by the EPA?

There are different ways that the EPA manages these notified contaminated sites. First, an initial assessment is carried out by the EPA. At the completion of the initial assessment, the EPA may take one or more than one of the following management approaches:

- The contamination warrants the EPA's direct regulatory intervention either under the *Contaminated Land Management Act 1997* or the *Protection of the Environment Operations Act 1997* (POEO Act), or both. Information about current or past regulatory action on this site can be found on EPA website.
- The contamination with respect to the current use or approved use of the site, as defined under the *Contaminated Land Management Act 1997,* is not significant enough that it warrants EPA regulation.
- The contamination does not require EPA regulation and can be managed by a planning approval process.
- The contamination is related to an operational Underground Petroleum Storage System, such as a service station or fuel depot. The contamination may be managed under the POEO Act and the Protection of the Environment Operation (Underground Petroleum Storage Systems) Regulation 2008.
- The contamination is being managed under a specifically tailored program operated by another agency (for example the Department of Industry and Investment's *Derelict Mines Program*).

I am the owner of a site that appears on the list. What should I do?

First of all, you should ensure the current use of the site is compatible with the site contamination. Secondly, if the site is the subject of EPA regulation, make sure you comply with the regulatory requirements, and you have considered your obligations to notify other parties who may be affected.

If you have any concerns, contact us and we may be able to offer you general advice, or direct you to accredited professionals who can assist with specific issues.

I am a prospective buyer of a site that appears on the list. What should I do?

You should seek advice from the vendor to put the contamination issue into perspective. You may need to seek independent expert advice.

The information provided in the list, particularly the EPA Site Management Class, is meant to be indicative only, and a starting point for your own assessment. Site contamination as a legacy of past site uses is not uncommon, particularly in an urbanised environment. If the contamination on a site is properly remediated or managed, it may not materially impact upon the intended future use of the site. However, each site needs to be considered in context.

List of NSW Contaminated Sites Notified to the EPA

Disclaimer

The EPA has taken all reasonable care to ensure that the information in the list of contaminated sites notified to the EPA (the list) is complete and correct. The EPA does not, however, warrant or represent that the list is free from errors or omissions or that it is exhaustive.

The EPA may, without notice, change any or all of the information in the list at any time.

You should obtain independent advice before you make any decision based on the information in the list.

The list is made available on the understanding that the EPA, its servants and agents, to the extent permitted by law, accept no responsibility for any damage, cost, loss or expense incurred by you as a result of:

1. any information in the list; or
2. any error, omission or misrepresentation in the list; or
3. any malfunction or failure to function of the list;
4. without limiting (2) or (3) above, any delay, failure or error in recording, displaying or updating information.

THE EPA Site Management Class	Explanation
A	The contamination of this site is being assessed by the EPA. Sites which have yet to be determined as significant enough to warrant regulation may result in no further regulation under the *Contaminated Land Management Act 1997*.
B	The EPA is awaiting further information to progress its initial assessment of this site.
C	The contamination of this site is or was regulated under the *Contaminated Land Management Act 1997*. Information about current or past regulatory action on this site can be found on the EPA website (www.epa.nsw.gov.au) - Environmental Issues - Contaminated Land - Record of EPA notices.
D	The contamination of this site is or was regulated under the *Protection of the Environment Operations Act 1997*. Information about current or past regulatory action on this site can be found on the EPA website (www.epa.nsw.gov.au) - Environmental Issues - Environment Protection Licences - POEO public register.
E	This is a premises with an operational Underground Petroleum Storage System, such as a service station or fuel depot. The contamination of this site is managed under the *Protection of the Environment Operations Act 1997* and the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008.
F	The contamination of this site is managed by a planning approval process. The consent authority is either the local council or a government agency, such as the Department of Planning.
G	Based on the information made available to the EPA to date, the contamination of this site is considered by the EPA to be not significant enough to warrant regulatory intervention under the *Contaminated Land Management Act 1997*
H	Initial assessment completed. The contamination of this site is to be regulated by the EPA

Suburb/City	Site Description	Site Address	caused the	Received	Assessment	Management
Glen Innes (see Figure 1)	Telstra Depot, Lambeth Street Glen Innes	126 Lambeth Street	Unclassified	Yes	Completed	G
Glenbrook	Caltex Service Station	78 Great Western Hwy	Service Station	Yes	In progress	B
Glendale	Former Service Station	334-342 Lake Road	Unclassified	yes	Completed	G
Glendale	Shell Service Station	593 Main Road	Service Station	Yes	In progress	A
Glendale	Woolworths Service Station	Stockland Drive	Service Station	Yes	In progress	A
Glendenning	Mobil Service Station	1 Dublin Street	Service Station	Yes	In progress	A
Glenorie	Glenorie Caltex Service Station	912 Old Northern Road	Service Station	Yes	In Progress	A
Gloucester	Caltex Service Station	141 Church Street	Service Station	Yes	In progress	B
Goonellabah	Invercauld Road Cattle Dip	161 Invercauld Road	Cattle Dip	No	In Progress	A C
Gosford	Mobil Depot	Corner Merinee Road and Bowen Crescent	Other Petroleum	Yes	In progress	B
Gosford West	Caltex Service Station	283 Manns Rd	Service Station	Yes	In progress	B
Gosford West	Caltex Service Station	30a Pacific Hwy	Service Station	yes	In Progress	B
Goulburn	Caltex Service Station	13 Sloane St	Service Station	Yes	In progress	B
Goulburn	Caltex Service Station	315 Auburn St	Service Station	Yes	In progress	B
Goulburn	Caltex Service Station	68 Goldsmith St	Service Station	Yes	In progress	B
Goulburn	Caltex Service Station	72-74 Clinton St	Service Station	Yes	In progress	B
Goulburn	Former Goulburn Gasworks	1 Blackshaw Road	Gasworks	yes	Completed	C
Goulburn	Former Mobil Service Station	422-426 Auburn Street	Service Station	Yes	Completed	E
Goulburn	Former Shell Autoport Service Station	Corner Bruce Street and Lagoon Street	Service Station	Yes	In Progress	A
Goulburn	Goulburn Tannery	13 Gibson Street	Other Industry	No	In Progress	A
Goulburn	Mobil Depot	23 Braidwood Road	Other Petroleum	No	In Progress	B
Goulburn	Mobil Service Station	129 Lagoon Street	Service Station	Yes	Completed	C
Goulburn	Shell Service Station	Corner Clinton and Cowper Streets	Service Station	Yes	In Progress	B
Grafton	BP Service Station	58 Fitzroy Street	Service Station	Yes	In progress	A
Grafton	Caltex Service Station	179 Prince St	Service Station	Yes	In progress	B
Grafton	Caltex Service Station	72 Swallow Road	Service Station	Yes	In progress	B
Grafton	Caltex Service Station	Corner Villiers St and Fitzroy St	Service Station	yes	Completed	G
Grafton	Former BP Service Station	202 Queen Street	Service Station	Yes	In progress	A
Grafton	Former service station site	161 Turf Street	Other Petroleum	Yes	In progress	B

Suburb/City	Site Description	Site Address	caused the	Received	Assessment	Management
Grafton	Former Shell Depot	12 Milton Street	Other Petroleum	Yes	In Progress	A
Grafton	Grafton Depot (Reliance Petroleum)	13 Orara Street	Other Petroleum	Yes	In progress	A
Grafton	Grafton Works Depot	26-28 Bruce St	Other Petroleum	Yes	In progress	A
Grafton	Mobil Depot	2-16 Bruce Street	Other Petroleum	Yes	Completed	E
Grafton	Shell Coles Express Service Station	91 Bent Street	Service Station	Yes	Completed	E
Grafton	Woolworths Petrol	75 - 77 Fitzroy Street Cnr of Duke Street	Service Station	yes	In Progress	A
Grafton South	Caltex Service Station	Pacific Hwy Cnr Gwyder Hwy	Service Station	Yes	In progress	B
Granville	7-Eleven Service Station	154-160 Parramatta Road	Service Station	Yes	Completed	G
Granville	Australand	15-17 Berry St	Other Industry	Yes	Completed	F
Granville	Caltex Service Station	144 Parramatta Rd	Service Station	Yes	In progress	B
Granville	Evans Deacon Ind	2B Factory St	Other Industry	No	Completed	C
Granville	Old Granville Depot	23 Elizabeth Street	Unclassified	yes	Completed	G
Greenacre	Caltex Service Station	77 Roberts Rd	Service Station	Yes	In progress	B
Greenacre	Former Plating Works	12 Claremont Street	Unclassified	No	Completed	G
Greenacre	Mobil Service Station	301-313 Hume Highway	Service Station	Yes	In progress	A
Grenfell	Former SRA Fuel Depot	Grafton Street	Other Petroleum	Yes	Completed	G
Grenfell	Grenfell Gasworks	Corner Gooloogong Road & Bourks Street	Gasworks	No	Completed	G
Greta		112-114 High Street	Other Industry	Yes	Completed	G
Greta	Former landfill	Hollingshed Road	Landfill	No	Completed	G
Greta	Shell Coles Express Service Station	122 New England Highway	Service Station	Yes	Completed	E
Greystanes	Mobil Service Station	73 Ettalong Road	Service Station	Yes	In progress	B
Griffith	BP Service Station	81 Banna Avenue	Service Station	Yes	In progress	A
Griffith	Caltex Service Station	2-4 Mackay Ave	Service Station	Yes	In progress	B
Griffith	Caltex Service Station	32-34 Mackay Ave	Service Station	Yes	In progress	B
Griffith	Landmark Fertiliser Storage	2 - 8 Jensen Road	Chemical Industry	Yes	In progress	A
Griffith	Mobil Depot	30 Banna Avenue	Other Petroleum	Yes	In progress	A
Griffith	Mobil Depot	Griffith Airport	Other Petroleum	Yes	In progress	B
Griffith	Murrumbidgee Irrigation Depot	55-77 Banna Avenue	Other Industry	yes	Completed	E G

Notices Issued Under the Protection of the Environment Operations Act

Number	Name	Location	Type	Status	Issued date
1026098	A.C.N. 090 135 836 PTY LTD	MARALLAN PARK	s.91 Clean Up Notice	Issued	27-Mar-03
1026346	A.C.N. 090 135 836 PTY LTD	MARALLAN PARK	s.91 Clean Up Notice	Issued	4-Apr-03
1026512	A.C.N. 090 135 836 PTY LTD	MARALLAN PARK	s.91 Clean Up Notice	Issued	17-Apr-03
1027416	A.C.N. 090 135 836 PTY LTD	MARALLAN PARK	s.91 Clean Up Notice	Issued	19-May-03
1032269	A.C.N. 090 135 836 PTY LTD	MARALLAN PARK	s.91 Clean Up Notice	Issued	17-Nov-03
1037168	A.C.N. 090 135 836 PTY LTD	MARALLAN PARK	s.80 Surrender of a Licence	Issued	25-May-04
1024313	AGL UPSTREAM INVESTMENTS PTY LIMITED	RAY BEDDOE TREATMENT PLANT	s.58 Licence Variation	Issued	16-Jan-03
1063922	AGL UPSTREAM INVESTMENTS PTY LIMITED	RAY BEDDOE TREATMENT PLANT	s.58 Licence Variation	Issued	12-Sep-06
1078463	AGL UPSTREAM INVESTMENTS PTY LIMITED	RAY BEDDOE TREATMENT PLANT	s.58 Licence Variation	Issued	5-Dec-07
1088678	AGL UPSTREAM INVESTMENTS PTY LIMITED	RAY BEDDOE TREATMENT PLANT	s.58 Licence Variation	Issued	9-Sep-08
1103759	AGL UPSTREAM INVESTMENTS PTY LIMITED	RAY BEDDOE TREATMENT PLANT	s.80 Surrender of a Licence	Issued	3-Jul-09
1016336	BORAL BRICKS PTY LTD	BORAL BRICKS PTY LTD	s.58 Licence Variation	Issued	27-Jun-02
1040220	BORAL BRICKS PTY LTD	BORAL BRICKS PTY LTD	s.58 Licence Variation	Issued	22-Sep-04
1043879	BORAL BRICKS PTY LTD	BORAL BRICKS PTY LTD	s.58 Licence Variation	Issued	20-Jan-05
1051526	BORAL BRICKS PTY LTD	BORAL BRICKS PTY LTD	s.58 Licence Variation	Issued	5-Sep-05
1062983	BORAL BRICKS PTY LTD	BORAL BRICKS PTY LTD	s.58 Licence Variation	Issued	28-Aug-06
1076143	BORAL BRICKS PTY LTD	BORAL BRICKS PTY LTD	s.58 Licence Variation	Issued	19-Sep-07
1079902	BORAL BRICKS PTY LTD	BORAL BRICKS PTY LTD	s.58 Licence Variation	Issued	15-Nov-07
1503297	BORAL BRICKS PTY LTD	BORAL BRICKS PTY LTD	s.58 Licence Variation	Issued	23-Jan-12
1510257	BORAL BRICKS PTY LTD	BORAL BRICKS PTY LTD	s.58 Licence Variation	Issued	6-Feb-13
1050108	BORAL RESOURCES (NSW) PTY LTD	BORAL CONCRETE	s.58 Licence Variation	Issued	15-Aug-05
1021629	CAMDEN COUNCIL	WATERWAYS OF CAMDEN LOCAL GOVERNMENT AREA	s.58 Licence Variation	Issued	4-Nov-02
1504274	CAMDEN COUNCIL	WATERWAYS OF CAMDEN LOCAL GOVERNMENT AREA	s.58 Licence Variation	Issued	20-Feb-12
140086	CONCRITE PTY LTD	CONCRITE PTY LTD	s.58 Licence Variation	Approved	6-Feb-01
1002885	CONCRITE PTY LTD	CONCRITE PTY LTD	s.58 Licence Variation	Issued	8-Feb-01
1128724	DART WEST DEVELOPMENTS PTY LIMITED	TURNER ROAD PRECINCT LANDS OWNED BY SEKISUI HOUSE AUSTRALIA HOLDINGS PTY LTD	s.80 Surrender of a Licence	Issued	1-Jun-11
1516849	Domenic Signoretti	95 Colonel Pye Drive	s.91 Clean Up Notice	Issued	4-Oct-13
1036726	EDL LFG (NSW) PTY LTD	JACKS GULLY WASTE MANAGEMENT CENTRE	s.58 Licence Variation	Issued	24-Jun-04
1061532	EDL LFG (NSW) PTY LTD	JACKS GULLY WASTE MANAGEMENT CENTRE	s.58 Licence Variation	Issued	13-Jul-06
1012065	GQ PRODUCTS PTY LIMITED	WHITE LODGE / SPRINGS ROAD	s.58 Licence Variation	Issued	25-Jul-02
1103167	GQ PRODUCTS PTY LIMITED	WHITE LODGE / SPRINGS ROAD	s.58 Licence Variation	Issued	30-Jun-09
1007405	HANDY CRETE (NSW) PTY LTD		s.58 Licence Variation	Issued	10-Aug-01
1033853	HANDY CRETE (NSW) PTY LTD		s.80 Surrender of a Licence	Issued	20-Jan-04
1035465	HI-QUALITY WASTE MANAGEMENT PTY LTD	HALLINANS PTY LTD	s.58 Licence Variation	Issued	19-Mar-04
1095376	HI-QUALITY WASTE MANAGEMENT PTY LTD	HALLINANS PTY LTD	s.58 Licence Variation	Issued	17-Feb-09
1099072	HI-QUALITY WASTE MANAGEMENT PTY LTD	HALLINANS PTY LTD	s.58 Licence Variation	Issued	31-Mar-09
1111306	HI-QUALITY WASTE MANAGEMENT PTY LTD	HALLINANS PTY LTD	s.91 Clean Up Notice	Issued	10-Feb-10
1111684	HI-QUALITY WASTE MANAGEMENT PTY LTD	HALLINANS PTY LTD	s.91 Clean Up Notice	Issued	9-Mar-10
1112249	HI-QUALITY WASTE MANAGEMENT PTY LTD	HALLINANS PTY LTD	s.110 Variation of Clean Up Notice	Issued	10-Mar-10
1112260	HI-QUALITY WASTE MANAGEMENT PTY LTD	HALLINANS PTY LTD	s.58 Licence Variation	Issued	21-Jun-10
1118231	HI-QUALITY WASTE MANAGEMENT PTY LTD	HALLINANS PTY LTD	s.58 Licence Variation	Issued	20-Aug-10
1121730	HI-QUALITY WASTE MANAGEMENT PTY LTD	HALLINANS PTY LTD	s.58 Licence Variation	Issued	11-Feb-11
1503776	HI-QUALITY WASTE MANAGEMENT PTY LTD	HALLINANS PTY LTD	s.96 Prevention Notice	Issued	9-Mar-12
1507951	HI-QUALITY WASTE MANAGEMENT PTY LTD	HALLINANS PTY LTD	s.110 Variation of Prevention Notice	Issued	17-Aug-12
11/09/2012 9:50	HI-QUALITY WASTE MANAGEMENT PTY LTD	HALLINANS PTY LTD	Penalty Notice	Withdrawn	11-Sep-12
13/09/2012 11:45	HI-QUALITY WASTE MANAGEMENT PTY LTD	HALLINANS PTY LTD	Penalty Notice	Withdrawn	13-Sep-12
18/12/2012 10:45	HI-QUALITY WASTE MANAGEMENT PTY LTD	HALLINANS PTY LTD	Penalty Notice	Issued	18-Dec-12
1504950	HI-QUALITY WASTE MANAGEMENT PTY LTD	HALLINANS PTY LTD	s.79 Suspension of a Licence	Issued	10-Jan-13
1504687	J. P. HAINES PLUMBING PTY. LIMITED	Marylands	s.91 Clean Up Notice	Issued	27-Apr-12
1022049	KARYATES ENTERPRISE PTY LIMITED	KARYATES ENTERPRISE PTY LIMITED	s.58 Licence Variation	Issued	12-Nov-02
1089258	KARYATES ENTERPRISE PTY LIMITED	KARYATES ENTERPRISE PTY LIMITED	s.58 Licence Variation	Issued	24-Jun-08
1107081	KARYATES ENTERPRISE PTY LIMITED	KARYATES ENTERPRISE PTY LIMITED	s.58 Licence Variation	Issued	19-Oct-09
1504624	KARYATES ENTERPRISE PTY LIMITED	KARYATES ENTERPRISE PTY LIMITED	s.58 Licence Variation	Issued	29-Mar-12
1056334	KOALA PETROLEUM PTY LTD	KOALA DEPOT	s.58 Licence Variation	Issued	13-Apr-06
1072540	KOALA PETROLEUM PTY LTD	KOALA DEPOT	s.58 Licence Variation	Issued	29-Jun-07
1097581	KOALA PETROLEUM PTY LTD	KOALA DEPOT	s.58 Licence Variation	Issued	11-Feb-09
1110277	KOALA PETROLEUM PTY LTD	KOALA DEPOT	s.58 Licence Variation	Issued	26-Feb-10
1502883	KOALA PETROLEUM PTY LTD	KOALA DEPOT	s.58 Licence Variation	Issued	8-Dec-11
1126333	LANDCOM	Oran Park Town	s.58 Licence Variation	Issued	15-Apr-11
1129983	LANDCOM	ORAN PARK TOWN	s.80 Surrender of a Licence	Issued	30-Jun-11
1511201	LANDCOM	Oran Park Town	s.58 Licence Variation	Issued	19-Mar-13
1009896	M COLLINS & SONS HOLDINGS PTY LTD	M COLLINS & SONS (CONTRACTORS) PTY LTD	s.58 Licence Variation	Issued	4-Mar-02
1016200	M COLLINS & SONS HOLDINGS PTY LTD	SPRING FARM	s.58 Licence Variation	Issued	10-Mar-03

1047682	M COLLINS & SONS HOLDINGS PTY LTD	SPRING FARM	s.58 Licence Variation	Issued	12-Jul-05
1058707	M COLLINS & SONS HOLDINGS PTY LTD	SPRING FARM	s.58 Licence Variation	Issued	18-Apr-06
1067861	M COLLINS & SONS HOLDINGS PTY LTD	SPRING FARM	s.58 Licence Variation	Issued	20-Dec-06
1081325	M COLLINS & SONS HOLDINGS PTY LTD	SPRING FARM	s.58 Licence Variation	Issued	7-Jan-08
1096062	M COLLINS & SONS HOLDINGS PTY LTD	SPRING FARM	s.58 Licence Variation	Issued	19-Jan-09
1103855	M COLLINS & SONS HOLDINGS PTY LTD	SPRING FARM	s.58 Licence Variation	Issued	28-Jul-09
1107936	M COLLINS & SONS HOLDINGS PTY LTD	SPRING FARM	s.58 Licence Variation	Issued	20-Oct-09
1124885	M COLLINS & SONS HOLDINGS PTY LTD	SPRING FARM	s.58 Licence Variation	Issued	5-Apr-11
1504257	M COLLINS & SONS HOLDINGS PTY LTD	SPRING FARM	s.58 Licence Variation	Issued	20-Feb-12
1504711	M COLLINS & SONS HOLDINGS PTY LTD	M COLLINS & SONS (CONTRACTORS) PTY LTD	s.58 Licence Variation	Issued	6-Mar-12
1506975	M COLLINS & SONS HOLDINGS PTY LTD	SPRING FARM	s.58 Licence Variation	Issued	8-Aug-12
1511248	M COLLINS & SONS HOLDINGS PTY LTD	SPRING FARM	s.58 Licence Variation	Issued	13-Aug-13
1516264	M COLLINS & SONS HOLDINGS PTY LTD	SPRING FARM	s.58 Licence Variation	Issued	20-Aug-13
1517225	M COLLINS & SONS HOLDINGS PTY LTD	SPRING FARM	s.58 Licence Variation	Issued	19-Sep-13
1012036	NEPEAN QUARRIES PTY LTD	LANDCOM LAND	s.80 Surrender of a Licence	Issued	9-Jan-02
1057799	NEPEAN QUARRIES PTY LTD	NEPEAN QUARRIES PTY LTD	s.80 Surrender of a Licence	Issued	23-Mar-06
1509966	ROADS AND MARITIME SERVICES	Camden Valley Way Upgrade btw Cowpasture Rd & Cobbitty Rd	s.58 Licence Variation	Issued	6-Nov-12
1516820	ROADS AND MARITIME SERVICES	Camden Valley Way Upgrade btw Cowpasture Rd & Cobbitty Rd	s.58 Licence Variation	Issued	3-Sep-13
1015090	SADA SERVICES PTY LIMITED	GLENLEE COAL PREPARATION PLANT	s.58 Licence Variation	Issued	4-Jun-02
1084502	SADA SERVICES PTY LIMITED	GLENLEE COAL PREPARATION PLANT	s.58 Licence Variation	Issued	29-May-08
1109653	SADA SERVICES PTY LIMITED	GLENLEE COAL PREPARATION PLANT	s.58 Licence Variation	Issued	14-Jan-10
1123898	SADA SERVICES PTY LIMITED	GLENLEE COAL PREPARATION PLANT	s.58 Licence Variation	Issued	21-Jan-11
1126456	SADA SERVICES PTY LIMITED	GLENLEE COAL PREPARATION PLANT	s.58 Licence Variation	Issued	14-Jul-11
1018593	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	5-Nov-02
1023674	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	22-Jan-03
1025179	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	21-Feb-03
1026533	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	23-Jan-04
1036729	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	3-May-04
1041739	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	25-Oct-04
1048096	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	4-Oct-05
1064045	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	17-Aug-06
1069652	SITA AUSTRALIA PTY LTD	ECOLIBRIUM MIXED WASTE AND ORGANICS FACILITY	s.58 Licence Variation	Issued	15-Mar-07
1067138	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	3-May-07
1073962	SITA AUSTRALIA PTY LTD	ECOLIBRIUM MIXED WASTE AND ORGANICS FACILITY	s.58 Licence Variation	Issued	30-May-07
1084000	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	26-Mar-08
1087575	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	21-May-08
1090744	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	23-Sep-08
1093072	SITA AUSTRALIA PTY LTD	ECOLIBRIUM MIXED WASTE AND ORGANICS FACILITY	s.58 Licence Variation	Issued	14-Nov-08
1095402	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	19-Dec-08
1104466	SITA AUSTRALIA PTY LTD	ECOLIBRIUM MIXED WASTE AND ORGANICS FACILITY	s.58 Licence Variation	Issued	29-Jul-09
1109060	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	23-Dec-09
1113551	SITA AUSTRALIA PTY LTD	ECOLIBRIUM MIXED WASTE AND ORGANICS FACILITY	s.58 Licence Variation	Issued	19-May-10
1113591	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	6-Jul-10
1117834	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	27-Jul-10
1118588	SITA AUSTRALIA PTY LTD	ECOLIBRIUM MIXED WASTE AND ORGANICS FACILITY	s.58 Licence Variation	Issued	19-Aug-10
1118942	SITA AUSTRALIA PTY LTD	ECOLIBRIUM MIXED WASTE AND ORGANICS FACILITY	s.58 Licence Variation	Issued	7-Sep-10
1119452	SITA AUSTRALIA PTY LTD	ECOLIBRIUM MIXED WASTE AND ORGANICS FACILITY	s.58 Licence Variation	Issued	15-Sep-10
1119455	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	15-Sep-10
1120828	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	10-Nov-10
1122579	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	9-Dec-10
1126570	SITA AUSTRALIA PTY LTD	ECOLIBRIUM MIXED WASTE AND ORGANICS FACILITY	s.58 Licence Variation	Issued	4-Apr-11

1126923	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	13-Jul-11
1501771	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	14-Oct-11
1507792	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	11-Sep-12
1512832	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	20-Mar-13
1516115	SITA AUSTRALIA PTY LTD	JACKS GULLY WASTE & RECYCLING CENTRE	s.58 Licence Variation	Issued	13-Sep-13
1005319	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	22-Oct-01
1017905	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	26-Jun-02
1018903	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	23-Dec-02
1028505	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	8-Jul-03
1032625	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	21-Nov-03
1032954	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	19-Mar-04
1047756	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	30-Jun-05
1061417	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	29-Jun-06
1074765	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	27-Jun-07
1076148	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	18-Jul-07
1077077	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	16-Aug-07
1092479	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	3-Nov-08
1096852	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	2-Mar-09
1116057	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	2-Jul-10
1129017	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	27-Jun-11
1504357	SYDNEY WATER CORPORATION	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	s.58 Licence Variation	Issued	28-Jun-12
1020469	T.J. & R.F. FORDHAM PTY LTD	TRN SOIL	s.80 Surrender of a Licence	Issued	16-Sep-02
1028105	VOLK HOLDINGS PTY LTD		s.91 Clean Up Notice	Issued	23-Jun-03
1033769	VOLK HOLDINGS PTY LTD		s.91 Clean Up Notice	Issued	9-Jan-04
1096898	VOLK HOLDINGS PTY LTD		s.58 Licence Variation	Issued	19-Jan-09
1101429	VOLK HOLDINGS PTY LTD		s.58 Licence Variation	Issued	1-Jul-09
1103296	VOLK HOLDINGS PTY LTD		s.91 Clean Up Notice	Issued	25-Aug-09
1107272	VOLK HOLDINGS PTY LTD		s.110 Variation of Clean Up Notice	Issued	22-Oct-09
1128831	VOLK HOLDINGS PTY LTD		s.91 Clean Up Notice	Issued	10-Jun-11
1500694	VOLK HOLDINGS PTY LTD		s.110 Variation of Clean Up Notice	Issued	28-Oct-11
21/05/2013 10:20	VOLK HOLDINGS PTY LTD		Penalty Notice	Issued	21-May-13

Licences Issued Under the Protection of the Environment Operations Act

Number	Name	Location	Type	Status	Issued date
11354	MARALLAN PARK	1037 THE NORTHERN ROAD, BRINGELLY, NSW 2171	POEO licence	Surrendered	28-Aug-01
11713	RAY BEDDOE TREATMENT PLANT	WESTBROOK ROAD , CAWDOR, NSW 2570	POEO licence	Surrendered	17-Sep-02
1808	BORAL BRICKS PTY LTD	LOT 2 GREENDALE ROAD, BRINGELLY, NSW 2171	POEO licence	Issued	10-Aug-00
1855	BORAL CONCRETE	GRAHAM HILL ROAD, NARELLAN, NSW 2567	POEO licence	No longer in force	30-May-00
5093	WATERWAYS OF CAMDEN LOCAL GOVERNMENT AREA	-, CAMDEN, NSW 2570	POEO licence	Issued	28-Aug-00
4076	CONCRITE PTY LTD	169 HARTLEY ROAD, SMEATON GRANGE, NSW 2567	POEO licence	No longer in force	17-Apr-00
13173	TURNER ROAD PRECINCT LANDS OWNED BY SEKISUI HOUSE AUSTRALIA HOLDINGS PTY LTD	IN THE VICINITY OF 668 CAMDEN VALLEY WAY, CATHERINE FIELD, NSW 2557	POEO licence	Surrendered	8-Sep-09
10021	JACKS GULLY WASTE MANAGEMENT CENTRE	Richardson Road, MOUNT ANNAN, NSW 2567	POEO licence	Issued	15-Oct-99
13025	NARELLAN FIELD SUPPORT CENTRE	17 & 19A McPHERSON ROAD, SMEATON GRANGE, NSW 2567	POEO licence	Issued	7-Jan-09
7630	WHITE LODGE / SPRINGS ROAD	RICHARDSON ROAD, NARELLAN, NSW 2567	POEO licence	Issued	29-Dec-00
3131		LOT 43 YORK ROAD, INGLEBURN, NSW 2565	POEO licence	Surrendered	3-Apr-00
11233	HALLINANS PTY LTD	761 The Northern Road, BRINGELLY, NSW 2171	POEO licence	Suspended	18-Oct-00
146	NARELLAN CONCRETE PLANT	9 GRAHAMS HILL ROAD, NARELLAN, NSW 2567	POEO licence	No longer in force	22-Dec-99
3275	KARYATES ENTERPRISE PTY LIMITED	108 DEEPFIELDS ROAD, CATHERINE FIELD, NSW 2171	POEO licence	Issued	12-Jan-00
11914	KOALA DEPOT	166 INGLEBURN ROAD, LEPPINGTON, NSW 2171	POEO licence	Issued	15-Jul-03
13174	ORAN PARK TOWN	VARIOUS AREAS AT, ORAN PARK, NSW 2570	POEO licence	Surrendered	4-Sep-09
13303	Oran Park Town	The Northern Road, ORAN PARK, NSW 2570	POEO licence	Issued	15-Sep-10
2767	M COLLINS & SONS (CONTRACTORS) PTY LTD	CUT HILL ROAD, COBBITTY, NSW 2570	POEO licence	Issued	1-Aug-00
4093	SPRING FARM	214 MACARTHUR ROAD, SPRING FARM, NSW 2570	POEO licence	Issued	8-Jan-01
5071	LANDCOM LAND	RICHARDSON ROAD, ELDERSLIE, NSW 2570	POEO licence	Surrendered	9-Aug-00
11787	NEPEAN QUARRIES PTY LTD	149 MACARTHUR ROAD, ELDERSLIE, NSW 2570	POEO licence	Surrendered	15-Jan-03
20087	Camden Valley Way Upgrade btw Cowpasture Rd & Cobbitty Rd	27-31 Argyle Street , PARRAMATTA, NSW 2150	POEO licence	Issued	20-Jun-12
12672		8-10 Sedgwick Street, SMEATON GRANGE, NSW 2567	POEO licence	No longer in force	17-Aug-07
1596	GLENLEE COAL PREPARATION PLANT	1 GLENLEE ROAD, CNR SPRINGS AND RICHARDSON ROADS, NARELLAN, NSW 2567	POEO licence	Issued	7-Sep-00
5105	JACKS GULLY WASTE & RECYCLING CENTRE	275 RICHARDSON ROAD, SPRING FARM, NSW 2570	POEO licence	Issued	2-Jul-01
12588	ECOLIBRIUM MIXED WASTE AND ORGANICS FACILITY	Richardson Road, SPRING FARM, NSW 2570	POEO licence	Issued	10-Oct-06
20021	Spring Farm Materials Recycling Facility	275 Richardson Road, SPRING FARM, NSW 2570	POEO licence	Issued	30-Sep-11
1675	WEST CAMDEN SEWAGE TREATMENT SYSTEM including the STP at	CORNER OF SHEATHERS AND FERGUSON LANES, GRASMERE, NSW 2570	POEO licence	Issued	25-May-00
4169	TRN SOIL	ARGYLE STREET, CAMDEN, NSW 2570	POEO licence	Surrendered	5-Feb-01
1617	THE RUGBY LEAGUE COUNTRY CLUB LTD	810 CAMDEN VALLEY WAY, CATHERINE FIELD, NSW 2171	POEO licence	Issued	16-Jun-01
11539		765 - 769 The Northern Road, BRINGELLY, NSW 2171	POEO licence	Issued	18-Oct-01

Appendix G
WorkCover NSW Dangerous Goods Search

Phase 1 Contamination Assessment and Salinity Assessment
Part Lot 24 DP1086823, 10 Crase Place,
Grasmere, NSW

NSW GOVERNMENT WorkCover

WorkCover NSW
92-100 Donnison Street, Gosford, NSW 2250
Locked Bag 2906, Lisarow, NSW 2252
T 02 4321 5000 F 02 4325 4145
WorkCover Assistance Service 13 10 50
DX 731 Sydney workcover.nsw.gov.au

Our Ref: D13/124490
Your Ref: Colee Quayle

16 October 2013

Attention: Colee Quayle
Coffey Environments Pty Ltd
PO Box 1651
Wollongong NSW 2500

Dear Ms Quayle,

RE SITE: 10 Crase Pl Grasmere NSW

I refer to your site search request received by WorkCover NSW on 11 October 2013 requesting information on licences to keep dangerous goods for the above site.

A search of the Stored Chemical Information Database (SCID) and the microfiche records held by WorkCover NSW has not located any records pertaining to the above mentioned premises.

If you have any further queries please contact the Dangerous Goods Licensing Team on (02) 4321 5500.

Yours Sincerely

Brent Jones
Senior Licensing Officer
Dangerous Goods Team

Appendix H
Site Photographs

Phase 1 Contamination Assessment and Salinity Assessment
Part Lot 24 DP1086823, 10 Crase Place,
Grasmere, NSW

Plate 1: Looking west towards residential properties (left) and dams. (21/10/2013)

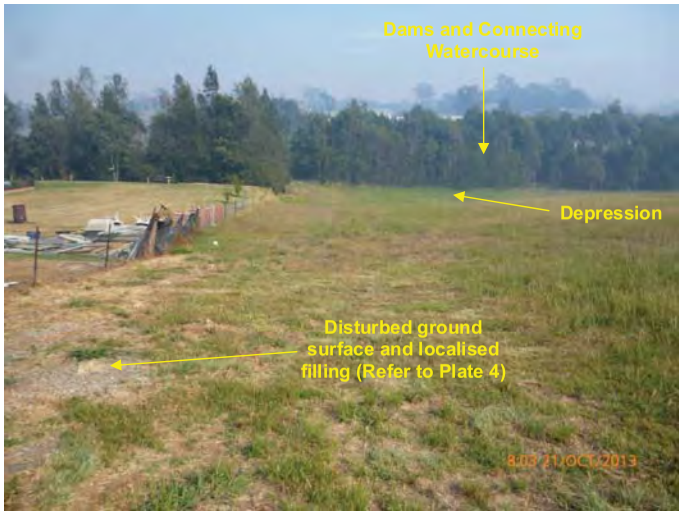


Plate 2: Looking west along the southern site boundary. Note area of disturbed soils and localised filling adjacent to the southern boundary. (21/10/2013)

Plate 3: Looking north at the site and remaining parts of Lot 24 (background). (21/10/2013)

Plate 4: Close up of localised filling along the southern site boundary adjacent to recently constructed residential dwellings. (21/10/2013)

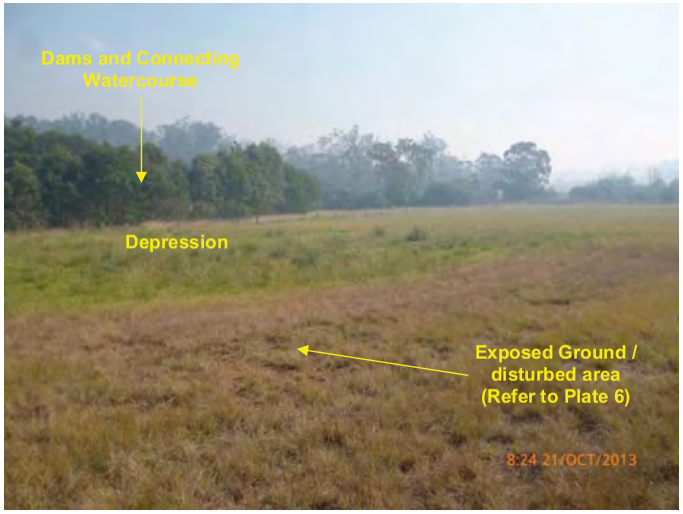


Plate 5: Looking northwest towards one of the depressions in Lot 24 (offsite) near the western lot boundary and exposed soil area. (21/10/2013)

Plate 6: Close up of localised filling north of the site. Note brick fragments. (21/10/2013)

revision	description	drawn	approved	date

drawn	CCQ
approved	SR
date	31/10/2013
scale	NTS
original size	A3

coffey

client: SITE PLUS

project: PHASE 1 CONTAMINATION ASSESSMENT AND SALINITY ASSESSMENT
PART LOT 24 DP1086823, 10 CRASE PLACE, GRASMERE, NSW

title: SITE PHOTOGRAPHS

project no: ENAUWOLL04150AA-R01 figure no: Plates 1 to 6