

Moonee Parklands Trust  
C/- JW Planning Pty Ltd



## Stage 1 (Desktop Study) Land Contamination Assessment

Lot 1 DP 1097743 and Lot 6 DP 252223  
Pacific Hwy, Moonee Beach, NSW

ENVIRONMENTAL



WATER



WASTEWATER



GEOTECHNICAL



CIVIL



PROJECT  
MANAGEMENT



P1002663JR01V02  
March 2013

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**All enquiries regarding this project are to be directed to the Project Manager.**

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# 1 Introduction

## 1.1 Project Scope

Martens & Associates Pty Ltd has prepared this preliminary (Stage 1) land contamination assessment for Moonee Parklands Trust C/- JW Planning Pty Ltd to inform a Part 3A Environmental Assessment for a proposed residential subdivision yielding up to 160 lots across Lot 1 DP 1097743 and Lot 6 DP 1097743, Pacific Hwy, Moonee Beach, NSW.

The purpose of the assessment is to detail the suitability of the site for the proposed development and to determine if further site assessment (Stage 2 soil sampling and testing) is required. The Stage 1 assessment was based on a historical review of site land use and does not involve soil sampling.

The assessment has been prepared in accordance with NSW EPA (2000) *Guidelines for Consultants Reporting on Contaminated Sites*.

## 1.2 Development Proposal

The development proposal involves the sub-division of land zoned predominantly for residential purposes and part conservation purposes.

The implementation of the concept subdivision is proposed to occur in 4 construction stages beginning in the north west corner. The construction stages will be divided further into 10 sales stages which may be adjusted in size at the time of release to suit marketing requirements. Preliminary staged works are as follows:

1. Stage 1:
  - a. Bulk earthworks for the entire 101 lots to reduce costs and impact on adjoining residents.
  - b. The court approved collector road running along the western edge of Moonee Parklands links the approved Glades development to the north with Moonee Beach Village to the south and will be constructed prior to development and release of lots in the Glades development.
  - c. Connections to power, water and telecommunication infrastructure to be located within the collector road.
  - d. Construction of vehicular access to the proposed sewer pump station as well as to stormwater treatment and detention Basin 1.
  - e. Services extended as required and access to the existing residence maintained.

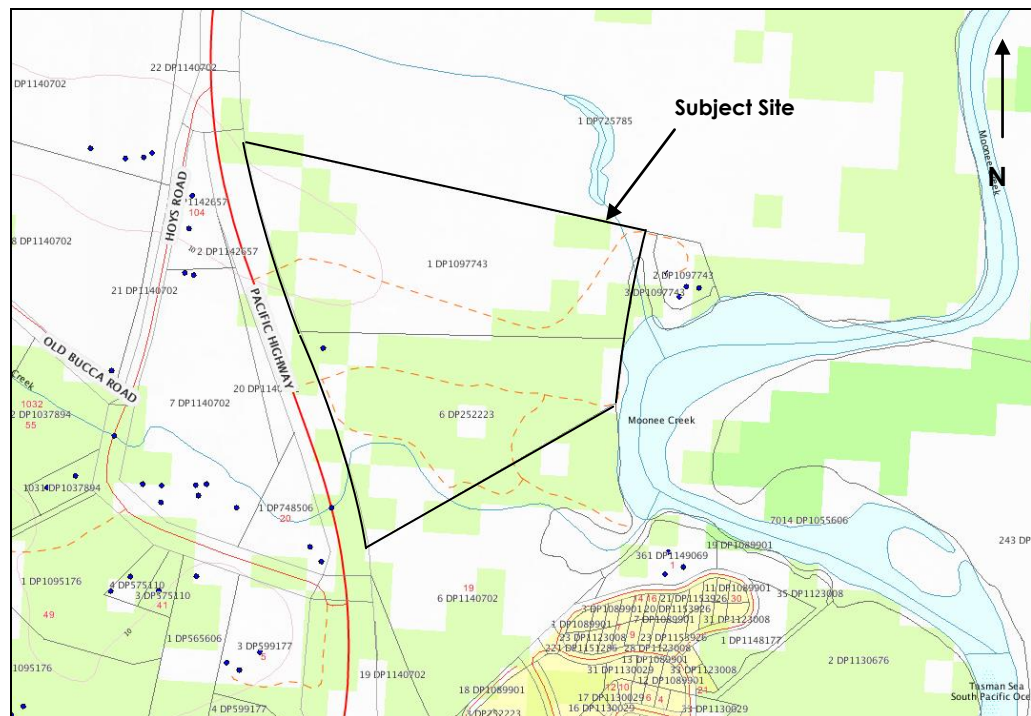
2. Stage 2:
  - a. Extension of Roads 4, 5 and 6 with associated services.
3. Stage 3:
  - a. Construction of stormwater Basin 2.
  - b. Extension of Road 3 & 6 and the partial construction of Road 2 with associated services.
4. Stage 4:
  - a. Connection of Road 1 and Road 2 as well as complete Roads 4 & 5 and associated services.

The proposed staging plan aims to provide a cost effective construction sequence that seeks to minimise the impact on any local residents. Whilst subject to possible variation via more detailed construction certificate investigation, design and market considerations as well as land owner circumstances, the proposed staging is practical and logical.

## 2 Site Description

### 2.1 Location and Site Description

The subject site is located between Pacific Highway and Moonee Creek at Moonee Beach, approximately 12 km north of Coffs Harbour and is within the Coffs Harbour City Council Local Government Area (Figure 1).



**Figure 1:** Location of the subject site within its local context (from NSW LPMA SixViewer online mapping).

Lot 6 has an area of 10.073 ha while Lot 1 is 12.93 ha in area, giving the site a total area of approximately 23 ha. The site is in an area of low density rural development approximately 500 m north of a commercial area and existing residential areas of Moonee Beach. The site is partly cleared with stands of remnant trees remaining. There is a caravan and detachable house in the eastern portion and a caravan and stables in the north-west corner of Lot 6 and unsealed access roads on both properties. Otherwise, the site is undeveloped.

### 2.2 Topography and Drainage

The site is located in an area of gently to moderately undulating hills and flatter low-lying alluvial plains associated with Moonee Creek. Site elevation ranges between approximately 18 m AHD in the west of Lot 1 and 2 m AHD along the banks of Moonee Creek in the east with slopes of up to 8 degrees in the west of Lot 1 but relatively flat (generally less than 5%) across low-lying areas in the east.

Following rainfall, water ponds in several of the low-lying areas, and surface soils are generally wet across the site. Clayey alluvial soils have been reported to be responsible for low infiltration rates in the Moonee locality.

### **2.3 Geology**

The Coffs Harbour 1:250,000 Geological Sheet (NSW Dept. of Mines, 1970) identifies the site as being on the boundary of Coramba Beds comprising mudstone, siltstone and greywacke with minor intervals of volcanic rock, and Quaternary alluvium comprising silt, clay, fluvial sand, marine sand and gravel.

### **2.4 Soil Profile**

The Soil Landscapes of the Coffs Harbour 1:100,000 Sheet identifies the site as having soils mainly of the Newports Creek soil landscape, with Ulong soil landscape in the west of the site (Table 1 and Table 2). Total soil depth is typically up to 2.5 m or more across the lower slopes and floodplains.



**Table 1:** Soil profile summary of Newports Creek soil landscape: low-lying alluvial floodplains (Milford, H.B., 1999).

Layer	Depth Range of soil layer (m)	Description
np1	0.0 – 0.30	Dark brown, weakly pedal clay loam.
np2	0.30 – 0.80	Greyish, yellow-brown, whole-coloured light clay.
np3	0.80 – 1.60	Yellowish-brown, mottled Pleistocene clay.
np4	1.60 – >2.50	Grey, mottled Pleistocene clay.

**Table 2:** Soil profile summary of Ulong soil landscape: lower slopes (Milford, H.B., 1999).

Layer	Depth Range of soil layer (m)	Description
ul5	0.0 – 0.30	Dark brown, weakly pedal clay loam.
ul2	0.30 – 1.10	Reddish-brown, pedal clay loam.
ul3	1.10 – 2.10	Reddish-brown clay to silty clay.
ul4	2.10 – 3.10	Reddish-brown, pedal, mottled, light to medium silty clay.

## 2.5 Groundwater

Results of groundwater monitoring are summarised in Table 3 with respect to different areas of the site. Refer to Martens report P1002663JR02V02 (February 2013) for further groundwater monitoring detail.

**Table 3:** Summary of water level data observed during borehole drilling: Lot 1 DP 1097743 and Lot 6 DP 252223 and Lot 1 DP 1097743, Moonee Beach NSW (data is preliminary).

	GMB							
	1	2	3	4	6	7	8	13
<b>Minimum</b>	0.697	2.111	2.766	2.456	3.904	0.696	4.116	-1.775 <sup>1</sup>
<b>Mean</b>	1.488	2.443	3.186	3.128	4.265	0.948	4.465	1.097
<b>Maximum</b>	3.380	2.695	3.396	3.668	4.640	1.275	5.011	1.680
<b>Range</b>	2.683	0.584	0.63	1.212	0.736	0.579	0.895	3.455
<b>Minimum Depth to GW</b>	0.202	0.022	-0.023	-0.047	2.268	-0.004	0.681	-0.069
<b>Mean Depth to GW</b>	2.094	0.274	0.187	0.493	2.643	0.323	1.227	0.514
<b>Ground Level</b>	3.582	2.717	3.373	3.621	6.908	1.271	5.692	1.611

Notes: <sup>1</sup>. Level occurred due to GMB being purged dry. <sup>2</sup>. GW = groundwater level.

### **3 Site History Review (Stage 1 Investigation)**

#### **3.1 Overview**

A review of the history of site use and development has been completed based on Council development consent and building plan records, NSW EPA/DECC contaminated land records, historical aerial photography and a walkover site inspection to form a preliminary assessment of the risk of land contamination resulting from past land uses.

#### **3.2 Zoning**

The property is zoned mostly Low Density Residential with an environmental protection buffer along Moonee Creek and Pacific Highway according to the Coffs Harbour LEP (2000). The LEP states that one of the primary objectives of this zone is to enable housing development and other development that is compatible with a low density residential environment.

#### **3.3 NSW EPA/DECC Contaminated Land Record**

Review of the NSW EPA/DECC contaminated land record shows that the subject site has not been regulated by the EPA in regards to contaminated land. No site within the suburb of Moonee was listed on the register.

#### **3.4 Development Application History**

Development application and building plan records kept by Coffs Harbour City Council were reviewed. Council's records date back to approximately 1950. The records indicate that all previous development applications have been in relation to residential use or sub-division (Table 4).

**Table 4:** Building or development applications for the site, approximately 1950 - current.

Year	DA No.	Description	Decision
<b>Lot 6 DP 252223</b>			
2010	1132	Collector Road	Current / no decision
2006	927	25 lot subdivision	Withdrawn
2005	1863	60 lot subdivision	Withdrawn
2004	1633	New dwelling, garage and living	No decision / void
<b>Lot 7 DP 252223 (since divided into Lot 1 and Lot 2 DP 1097743)</b>			
2006	937	25 lot subdivision	Current / no decision
2005	1858	108 lot subdivision	Withdrawn
2005	1349	2 lot subdivision <sup>1</sup>	Approved
2004	1334	Dual occupancy addition - detached	No decision / void
2000	344	New dwelling	Approved
1999	1780	Dwelling entitlement	-
1990	58	160 units	Past deferred.

Note: <sup>1</sup> Creation of 2 lots being Lot 1 and Lot 2 DP 1097743 being previously Lot 7 DP252223

### 3.5 Historical Aerial Photograph Analysis

Historical aerial photographs taken of the site during 1954, 1964, 1974, 1989, 2000 and 2008 were reviewed in order to investigate the history of land use on the site (Table 5). Copies of all aerial photographs are provided in Attachment B.

Photos indicate that the site has not sustained any intensive land use except for possibly grazing pasture after 1954.

**Table 5:** Historical aerial photograph observations 1954 – 2008.

Year	Description
1954	The site is forested except for a small portion in the south-west corner that is cleared (most likely encroached on by the neighbouring property). No structures or intensive land use are seen on the site. Surrounding land use is rural (mainly pasture) and forested.
1964	As per 1954, the site is mostly forested and surrounding land use is rural (pasture) and forested.
1974	The southern and western portions of the site have been cleared and an access track is evident through the centre of the property. Adjacent properties to the north and west have been intensively cleared. Pacific Hwy has been reorientated since 1964.
1989	As per the 1974 photo, the site is partly cleared and there is an access track through the centre. Immediately adjacent properties are mostly cleared for agricultural land use.
2000	Lot 1 has been more intensively cleared; otherwise land use is consistent with previous photos.
2008	The site is partly cleared and there is a dwelling in the north-west corner of Lot 6 (Figure 2). Neighbouring properties remain predominantly rural although Lot 2 DP 1097743 is being used exclusively for residential purposes.



**Figure 2:** 2008 aerial photo showing the subject site (from NSW LPMA SixViewer online mapping).

### **3.6 Walkover Site Inspection**

A site inspection completed 28 July 2010 noted several stockpiles of local soil created from minor earthworks such as cutting of dirt access roads on-site. No other evidence of potential contamination such as soil staining, unnatural odours or plant stress was observed on-site.

## **4 Conclusions and Recommendations**

The results of the site history review (preliminary site investigation) indicate that the site has been used for residential purposes after 2004 and possibly grazing after 1954. On this basis, the site is unlikely to be contaminated and further site assessment (sampling and laboratory testing) is not considered necessary. If excavated material is to be removed from the site, a waste classification will be required.

## 5 Limitations Statement

The Stage 1 contamination assessment was undertaken in line with current industry standards. No site soil sampling has been undertaken.

It is important, however, to note that no Stage 1 (desktop) land contamination study can be considered to be a complete and exhaustive characterisation of a site nor can it be guaranteed that any assessment shall identify and characterise all areas of potential contamination or all past potentially contaminating land-uses. Therefore, this report should not be read as a guarantee that no contamination shall be found on the site. Should material be exposed in future which appears to be contaminated, additional testing may be required to determine the implications for the site.

Martens & Associates Pty Ltd has undertaken this assessment for the purposes of the current development proposal. No reliance on this report should be made for any other investigation or proposal. Martens & Associates accepts no responsibility, and provides no guarantee regarding the characteristics of areas of the site not specifically studied in this investigation.



## 6 References

Coffs Harbour City Council – Coffs Harbour LEP (2000).

New South Wales Department of Mines (1970) *Coffs Harbour 1:250,000 Geological Sheet*.

NSW EPA (2000) *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*.

NSW DEC (2005) *Contaminated Sites: Guidelines for Assessing Former Orchards and Market Gardens*.

Soil Conservation Service of NSW, Sydney (1999) *Soil Landscapes of the Coffs Harbour 1:100 000 sheet*

## 7 Attachment A – Site Plan

NOTES

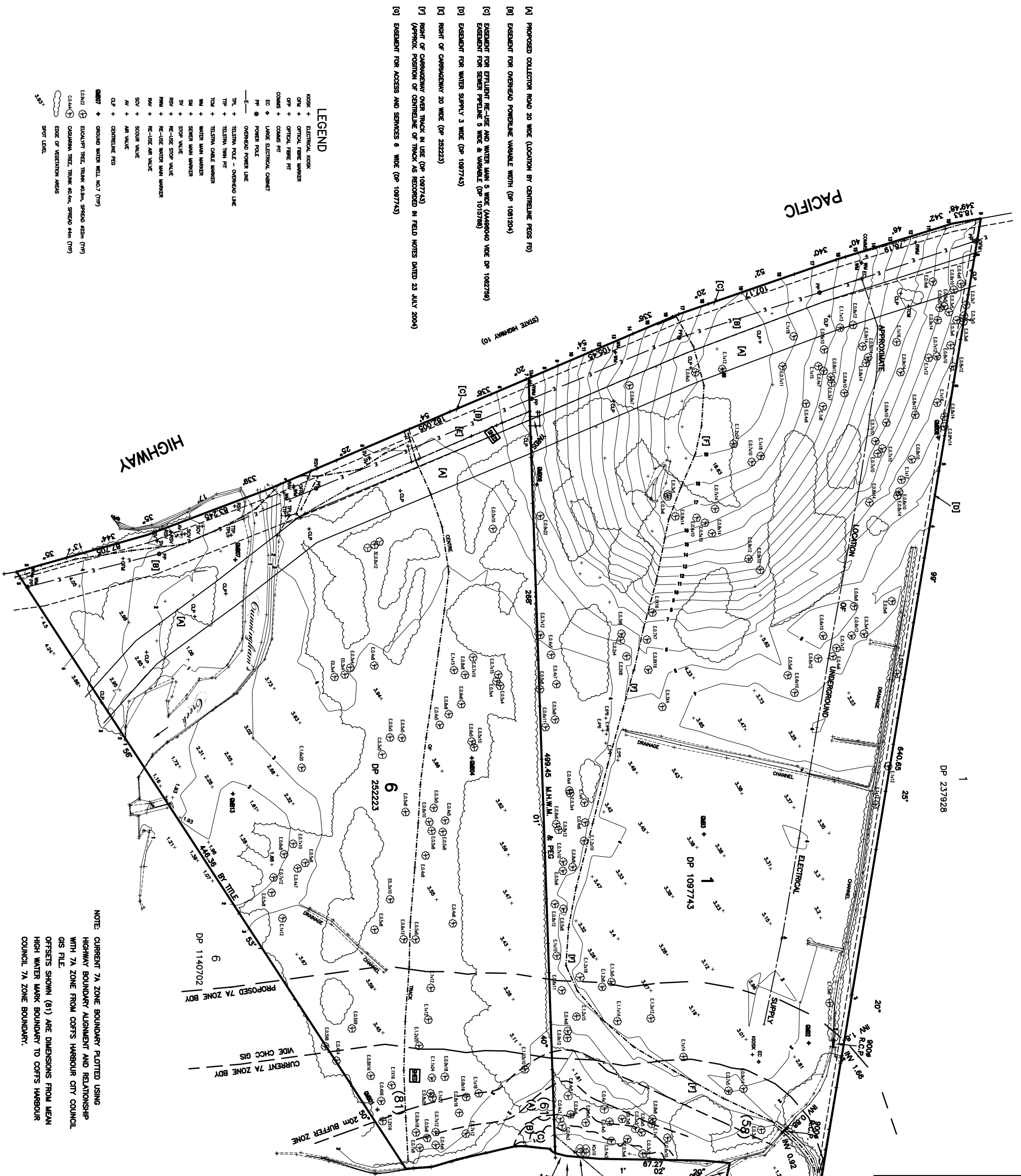
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02. The detail survey shown hereon is not a survey defined by the Surveying Act 2002, however, it is a survey defined by the Surveying Act 2002, and it is a survey defined by the Surveying Act 2002.

03. Services shown hereon have been located by field survey where surface markers and/or structures are visible.

04. Prior to any demolition, ascension or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed location of all services.

05. This plan may not be reproduced unless this note is included.



Client & Project

J.W. PLANNING PTY LTD

LOT 6 DP 252223 & LOT 1 DP 1097743

PACIFIC HIGHWAY

MOONEE BEACH

Drawing Title

DETAIL SURVEY OVER

LOT 6 DP 252223 AND

LOT 1 DP 1097743

Scale at A1

1 : 1250

Date

DECEMBER 2010

Job No.

8401

Field Book No.

A.H.D.

Approved

Revision No.

01

BLAIRLANSKEY SURVEYS

REGISTERED SURVEYORS

Amendments

A - 22/03/2011 20m BUFFER ZONE ADDED

B - 30/03/2011 20m BUFFER ZONE ADDED

C - 22/03/2011 HABITAT LINES ADDED

Amendments

BLAIRLANSKEY SURVEYS

REGISTERED SURVEYORS

Amendments

A - 22/03/2011 20m BUFFER ZONE ADDED

B - 30/03/2011 20m BUFFER ZONE ADDED

C - 22/03/2011 HABITAT LINES ADDED

HABITAT LINES

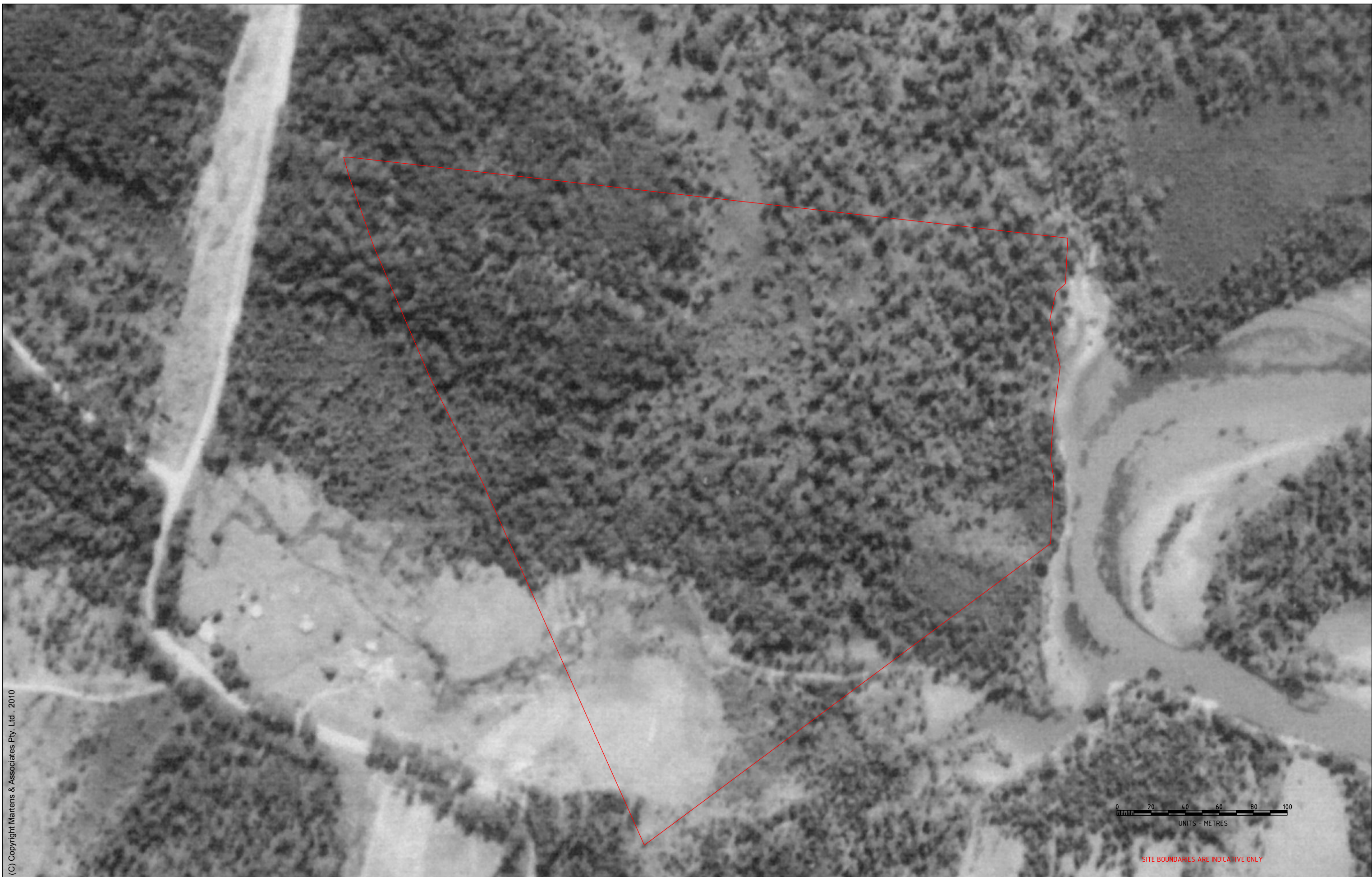
(A) EXTENT OF HABITAT THAT REQUIRES A BUFFER

(B) EXTENT OF HABITAT THAT REPRESENTS FLOOD AREA


(C) EXTENT OF SPRING TIDE WITHOUT FLOOD CONDITIONS

## 8      **Attachment B – Historical Aerial Photographs**





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	MOONEE PARKLANDS TRUST C/- JW PLANNING PTY LTD	1954 AERIAL PHOTO: LOT 6 DP 252223 AND LOT 1 DP 1097743, PACIFIC HWY, MOONEE BEACH		MT	AHD		1.0	STAGE ONE CONTAMINATION ASSESSMENT	16.08.2010	MT
	THIS PLAN MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED BY PRINCIPAL CERTIFYING AUTHORITY All measurements in m unless otherwise specified.	PROJECT MANAGER: MR GRAY TAYLOR	DRAWING NUMBER: P1002663JD03V01_SHEET 1	DRAWN:	HORIZONTAL RATIO:	OF 6 SHEETS				
				MT	1:3000 @A3 1:1500 @A1					
				REVIEWED:	VERTICAL RATIO:		PAPER SIZE:			
			GT	1:3000 @A3 1:1500 @A1	A1 / A3					



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	MOONEE PARKLANDS TRUST C/- JW PLANNING PTY LTD		1964 AERIAL PHOTO: LOT 6 DP 252223 AND LOT 1 DP 1097743, PACIFIC HWY, MOONEE BEACH		MT	AHD		1.0	STAGE ONE CONTAMINATION ASSESSMENT	16.08.2010	MT		
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					MT	1:3000 @A3 1:1500 @A1							
			THIS PLAN MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED BY PRINCIPAL CERTIFYING AUTHORITY All measurements in m unless otherwise specified.				PROJECT MANAGER:	DRAWING NUMBER:	REVIEWED:	VERTICAL RATIO:	PAPER SIZE:		
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					MT	1:3000 @A3 1:1500 @A1					
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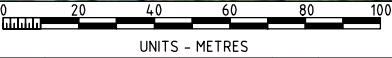
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	MOONEE PARKLANDS TRUST C/- JW PLANNING PTY LTD	1989 AERIAL PHOTO: LOT 6 DP 252223 AND LOT 1 DP 1097743, PACIFIC HWY, MOONEE BEACH		MT	AHD	4	1.0	STAGE ONE CONTAMINATION ASSESSMENT	16.08.2010	MT	
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		MOONEE PARKLANDS TRUST C/- JW PLANNING PTY LTD		2008 AERIAL PHOTO: LOT 6 DP 252223 AND LOT 1 DP 1097743, PACIFIC HWY, MOONEE BEACH		MT	AHD		1.0	STAGE ONE CONTAMINATION ASSESSMENT	16.08.2010	MT
						DRAWN:	HORIZONTAL RATIO:	OF 6 SHEETS				
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