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LandCorp

Report for Broome North Redevelopment Preliminary Site Investigation

October 2009



INFRASTRUCTURE | MINING & INDUSTRY | DEFENCE | PROPERTY & BUILDINGS | ENVIRONMENT



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Executive Summary

Background

LandCorp commissioned GHD to undertake a Preliminary Site Investigation (PSI) of the Broome North Redevelopment Site ('the Site'). The Site location is shown in Figure 1 and lot layout is shown in Figure 2.

GHD understands that LandCorp propose to subdivide and redevelop the Site for residential and mixed land use purposes. There is a former abattoir located at Lot 1024 Locke Street, Broome and a former poultry farm located at Lot 2605 Fairway Drive, Djugun. GHD has therefore been commissioned to investigation these and other historical and current land uses at the Site in order to determine if there is any potential soil or groundwater contamination present which may pose potential constraints to the future development of the Site.

GHD understands that the project is anticipated to extend over 30 to 50 years, with development beginning in the southern portion of the Site adjacent to the western boundary of the Blue Haze Light Industrial Area. Therefore the conclusions and recommendations presented in this report should be reviewed in light of the development schedule.

The scope of work included assessment of available information for the Site (history, geology/hydrogeology and government databases), a site walkover, review of Coffey Pty Ltd soil investigation at the former poultry farm, development of a Conceptual Site Model and reporting.

The Conceptual Site Model identifies the following areas as potentially contaminating issues at the Site: the former poultry farm, former abattoir, former camel lease, illegally dumped wastes and the nearby landfill.

Potential contamination migration pathways identified in the Conceptual Site Model include: lateral and vertical migration via permeable strata and service lines, surface water runoff and dermal contact, inhalation (dust and vapours) and ingestion.

Potential receptors of potential contamination present at the Site identified in the Conceptual Site Model include: current/future residents, workers, down-gradient residential groundwater bore users, adjacent residents, flora and fauna, groundwater, adjacent bushland and nearby surface water bodies.

Conclusions

Based on the investigations completed, the following conclusions are made:

Former Poultry Farm (Lot 2605)

- A review of the Certificates of Title indicates Lot 2605 Fairway Drive is currently owned by the Anglican Schools Commission Inc. This lot was previously owned by Tamarama Holdings Pty Ltd (North West Eggs), from 1994 to 2007.
- A review of aerial photographs indicates the former poultry farm Site was initially developed between 1982 and 1989, with the construction of two sheds. By 2007, the remainder of the former poultry farm had been developed, with the construction of the remaining infrastructure.
- » A review of a previous report completed by Stass Environmental in 2005 indicated there was no evidence of significant surface soil contamination at the former North West Eggs facility.



- The Site walkover did not identify any areas of significant contamination at the location of the former poultry farm. The majority of infrastructure was still present however it is understood that the poultry farm has not been in operation for at least 2 years.
- » Soil sampling undertaken by Coffey indicates that there were three locations that exceeded the assessment levels at the former poultry farm. Concentrations of zinc that exceeded the EIL were collected from locations of the former scrap metal areas near the northern and southern boundaries of the former poultry farm. Concentrations of TPH C₁₅-C₂₈ and TPH C₂₉-C₃₆ that exceeded the HIL-A and HIL-E were collected from the location of a former manure pile in the centre of the former poultry farm.

Former Abattoir (Lot 1024)

- A review of the Certificates of Title indicates Lot 1024 Locke Street was purchased in 1989 and is currently owned by Margaret Pamela Livingstone and Ralph William Livingstone. Between 1983 to 1989 120 Locke Street was owned by Susan Helen Giesen, Jaqueline Anne Knox and Gwendolyn Frances Knox. Between 1976 and 1983 Lot 1024 Locke Street was owned by John Marquis Charles Knox. This indicates that 120 Locke Street may have had a predominantly residential use throughout the history of development of the lot.
- A review of aerial photography indicates that development of the former abattoir site began in 1967, with the clearing of vegetation and remained developed from 1967 to present. The development of infrastructure at the Site occurred during the late 1960s.
- Access to the former abattoir could not be obtained during the Site visit however anecdotal evidence indicates that the area operated as a small scale abattoir supplying meat products to the local butcher.

Water Corporation Tank (Lot 2646)

- A review of the Certificates of Title indicates Lot 2646 Fairway Drive is reserved as Crown Land Under Management Order, with the primary interest holder being the Water Authority of Western Australia. It is understood that this tank is used for drinking water storage only.
- » A review of aerial photography indicates the water tank was developed between 1989 and 2007. The Site appears to be being developed in the 1989 aerial photograph, with the track leading to the location of the water tank evident.
- The Site walkover did not identify any areas of significant contamination at the Water Corporation Water Tank location. The area was mostly cleared of vegetation and fenced, to prevent public access. There was minor dumping of rubbish around the enclosure, however this was generally limited in extent and comprised mainly beer cans and plastic drink bottles.
- » Given the current land use and the small scale operations as a water tank, it is not considered that this land use is likely to have caused any significant soil or groundwater contamination at the Site.

Camel Leases (Lot 300)

» A review of Certificates of Title indicates that Lot 300 Fairway Drive is reserved as Crown Land. The primary interest holder of Lot 300 Fairway Drive is Steve Madden, who is the owner of Cable Beach Camel Safaris.



- A review of aerial photographs indicates that this lot was cleared of vegetation during the 1980s.
 Between 1989 and 2007 vegetation regrowth over part of these lots has occurred.
- The Site walkover identified that Lot 300 was no longer being used as a camel lease area, and that this area was now used as a dirt bike track. A small area of burnt vegetation was also identified at this lot.
- There were some small burn areas and wastes identified at the location of the former camel lease, however given the small scale operations, it is not considered that this land use is likely to have caused any significant soil or groundwater contamination at the Site.

Remainder of Site

- » A review of the Certificates of Title indicates the remaining lots are reserved as Crown Land.
- A review of aerial photographs indicates that the majority of the Site is covered by vegetation. There are some areas in the southern half of the Site, which were cleared of vegetation during the 1980s, however by 2007, regrowth of vegetation has occurred.
- The Site walkover identified that the majority of the Site was covered by dense native vegetation, in good, healthy condition. Many areas of illegal dumping along unsealed tracks were identified across the Site. Dumped wastes included white goods, cans, bottle, drums and other household wastes. Dumping of wastes was generally limited to unsealed tracks across the Site.
- Except for the minor and localised dumping of waste materials no significant contamination issues were observed at Lots 1776, 1224, 687, 3091, 304, 2658, 2659, 3132, 2646, 3149, 3106, 301, 3150, 3129 and 3130. However, this conclusion is subject to the timeframes for the development and whether dumping of waste continues to occur and potentially cause contamination in the future.

Adjacent Broome Waste Management Facility

A review of aerial photographs indicates that the adjacent Broome Waste Management Facility has been in operation since the mid 1980s, with expansion to the west during the late 1990s.

Potential contamination and risk issues likely to arise from the Broome Waste management facility that may impact the Site include landfill gas and groundwater contamination. Given the distance from the landfill to the Site (400 m), these issues are considered to be minor, however should still be considered as part of potential risks for site development.

Overall Conclusions

Based on a review of the report, the following overall conclusions are presented for the Site:

- » Given the overall land use of the Site and the presence of illegally dumped rubbish, there is the potential for minor impacts to surface soils which will need to be remediated and validated prior to redevelopment.
- » GHD has not conducted groundwater investigations at the Site and unless groundwater investigations are undertaken the groundwater quality at the Site cannot be confirmed.

Recommendations

Based on the information presented in this report, the following recommendations are made for the Site:

» GHD recommends conducting a groundwater investigation across the Site to confirm groundwater quality moving onsite and offsite and to determine groundwater flow direction beneath the Site.



- » Given that the Site may be redeveloped for a more sensitive land use (ie. residential), a DEC Contaminated Sites accredited auditor may need to be appointed in accordance with Section 31(1) of the Contaminated Sites Regulations 2006.
- Remove surface dumped waste materials from the Site prior to redevelopment and subdivision. Removed waste should be disposed of to a suitable landfill facility, in accordance with DEC (2001) Landfill Waste Classification and Waste Definitions 1996 (as amended). Erect signage around the Site to deter any further illegal dumping of wastes.
- » GHD did not observe any activities likely to cause significant soil or groundwater contamination across the remainder of the Site during the Site visit or as part of this investigation, however due to the large area of the Site it was not possible to inspect the entire Site. Consequently, there is potential for small areas of contamination to exist at the Site and contingency and/or management plans for this should be incorporated in any redevelopment plans for the Site.
- » LandCorp should review its development plan in conjunction with this PSI to further assess the need for soil and groundwater sampling, whereby development of residential lots in areas of contamination may require further soil and groundwater investigations.

GHD understands that the development is planned to extend over 30 to 50 years, with works beginning in the southern portion of the Site, adjacent to the western boundary of the Blue Haze Light Industrial Area. Given the time scale for the redevelopment, it will be approximately 12 to 15 years before development begins in areas where there are potential contamination issues.

GHD therefore makes the following recommendations for specific areas of the Site, however these may not need to be addressed until later in the development program. GHD suggests that the following recommendations are reviewed on a periodic basis in line with development schedule.

Former Poultry Farm (Lot 2605)

The concentrations of zinc detected at the former poultry farm, marginally exceed (up to 1.35 times) the assessment criteria. However, as vegetation is not present at the location of these exceedences, these concentrations are not considered to present a risk to the surrounding environment. The concentrations of TPH identified at the former poultry farm exceed the health investigation levels. GHD considers that this exceedence should be delineated to determine the vertical and horizontal extent of the TPH contamination at the former poultry farm.

Should the former poultry farm be redeveloped for more sensitive land use purposes, including residential purposes with access to soil including gardens, GHD recommends that soil and groundwater investigations be undertaken, in accordance with DEC Contaminated Sites Management Series Guidelines, to confirm that there is no contamination present at the location that has the potential to cause risks to human health or the environment.

Former Abattoir (Lot 1024)

As the Site was not accessible during the time of this investigation, a Site walkover should be undertaken at this property when it is accessible to assess potential contamination issues and development restrictions for LandCorp.

Broome Waste Management Facility

Due to the proximity of the Broome Waste Management Facility to the northern boundary of the Site (400 m), consideration should be given to potential migration of landfill gases through substrata to the



Site and the potential explosive and human health risks these may present. Landfill gas investigation and monitoring should be undertaken between the landfill and Site boundaries to determine risks from the Broome Waste Management Facility.

GHD recommends installation of groundwater monitoring wells between the landfill and Site to confirm that the landfill is not impacting groundwater quality beneath Site.

GHD also recommends installation of landfill gas monitoring points between the landfill and the Site to ensure landfill gases are not being released at the Site.



1. Introduction

LandCorp commissioned GHD to undertake a Preliminary Site Investigation (PSI) of the Broome North Redevelopment Site ('the Site'). The Site location is shown in Figure 1 and lot layout is shown in Figure 2. The Site comprises the following lots:

- » Lot 304 Fairway Dr, Bilingurr;
- » Lot 2605 Fairway Dr, Djugun;
- » Lot 2646 Fairway Dr, Cable Beach;
- » Lot 2659 Fairway Dr, Djugun;
- » Lot 2658 Fairway Dr, Djugun;
- » Lot 3106 Fairway Dr, Cable Beach;
- » Lot 301 Fairway Dr, Cable Beach;
- » Lot 300 Fairway Dr, Cable Beach;
- » Lot 304 Fairway Dr, Bilingurr;
- » Lot 3091 Buckleys Rd, Bilingurr;
- » Lot 1224 Broome Rd, Bilingurr;
- » Lot 1024 Locke St, Bilingurr;
- » Lot 1776 Broome Rd, Bilingurr;
- » Lot 3150 Fairway Dr, Cable Beach;
- » Lot 3149 Fairway Dr, Cable Beach;
- » Lot 687 Locke St, Bilingurr;
- » Lot 3132 Broome Road, Djugun;
- » Lot 3129 Fairway Drive, Bilingurr; and
- » Lot 3130 Fairway Drive, Bilingurr.

GHD notes that Lots 3129 and 3130 were not assessed as part of this scope of work due to the Site boundaries being amended subsequent to the Site inspection and desktop investigation.

GHD understands that LandCorp propose to subdivide and redevelop the Site for residential and mixed land use purposes. There is a former abattoir located at Lot 1024 Locke Street, Broome and a former poultry farm located at Lot 2605 Fairway Drive, Djugun. GHD has therefore been commissioned to investigation these land uses along with other land uses at the Site in order to determine if there is any potential contamination present which may pose potential constraints to the future development of the Site.

GHD understands that the project is anticipated to extend over 30 to 50 years, with development beginning in the southern portion of the Site adjacent to the western boundary of the Blue Haze Light Industrial Area. Therefore this report should be reviewed in light of the development schedule.



The PSI has been undertaken with reference to the Department of Environment and Conservation (DEC) Contaminated Sites Management Series Guidelines.

1.1 Objectives

The primary objective of the PSI was to investigate the land use history of the Site in order to identify existing or past practices that have the potential to cause contamination of soil and/or groundwater at the Site.

1.2 **Previous Reports**

The following investigations have previously been undertaken at the Site. The reports of these investigations are listed below.

- » GHD (2009a) Broome Environmental Consultancy: Lot 3150 (Area A), Preliminary Environmental Impact Assessment and Biological Survey. January 2009.
- » GHD (2009b) Broome Environmental Consultancy: Lot 304 (Area B), Preliminary Environmental Impact Assessment and Biological Survey. January 2009.
- » GHD (2009c) Lot 3150 and Lot 304 Broome, Acid Sulfate Soil Desktop Investigation. May 2009.
- » Stass Environmental (2005) Baseline Soil Contamination Assessment: North West Eggs, Broome, WA. December 2005.
- » Coffey Report unpublished

1.3 Community Consultation

GHD notes the DEC (2006) Community Consultation Guideline in relation to the PSI.

GHD understands that LandCorp have commissioned Creating Communities Australia Pty Ltd to undertake community consultation for the Site. GHD was not commissioned to undertake any community consultation works has therefore not undertaken or reported on any community consultation as part of the scope of works for the PSI.



2. Scope of Works

The scope of work completed by GHD is described in the following sub-sections.

2.1 Desktop Study

A review of available information was undertaken to provide evidence of potential past or present contamination issues at the Site. The desktop study included the following:

- » A review of previous environmental investigation reports and any other data made available by LandCorp regarding the Site;
- » A search of current and historical Certificates of Title to determine past owners of the Site, and the likely associated site uses and a review of these against the DEC *Potentially Contaminating Activities, Industries and Landuses* Guideline (DoE, 2005);
- » A review, on a ten year basis, of historical aerial photographs showing the Site, to assist in establishing the patterns of site development over time;
- » A review of the local topography and surface waters to identify potential contaminant receptors should the Site be found to be a source of contamination;
- A review of regional geology and hydrogeology, which will assist in determining the likely soil type and groundwater regime at the Site, including review of Department of Water Bore Search to ascertain local hydrogeological conditions and the use of groundwater within a 1 km radius of the Site;
- » A review of surrounding land uses to assess potentially sensitive environmental and human health receptors to any possible contamination and to assess land uses that have the potential to affect the Site;
- » A Department of Mines and Petroleum Dangerous Goods Licence Freedom of Information (FOI) search to ascertain whether underground storage tanks (USTs) are present at the property;
- » An Acid Sulfate Soils (ASS) Desktop review to assess the potential for ASS to be present beneath the Site and the potential effects on redevelopment;
- » A search of the DEC *Contaminated Sites Register* to ascertain whether the Site or surrounding properties have been registered as potentially contaminated sites; and
- » Contacting local planning authorities to ascertain whether any past or present land use activities are likely to have potentially contaminated the Site.

2.2 Site Visit

An assessment of the Site and nearby surrounds was undertaken by a GHD Environmental Scientist during a Site visit on 30 and 31 July 2009. GHD assessed the Site conditions, inspected any areas of potential environmental and/or human health concern and confirmed features documented in the desktop study.

Photographs were taken during the Site visit and are discussed in Section 6 of this report.



2.3 Liaison with Geotechnical Consultants

GHD conducted liaison with the Coffey Pty Ltd (Coffey) geotechnical consultants to direct them in undertaking a screening contamination investigation at the former poultry farm, at suitable locations. This investigation was limited due to access restrictions at the Site and was only commissioned for preliminary screening of gross soil contamination issues only.

GHD were onsite at the same time as the geotechnical consultants to review the contamination sampling methodology and direct sampling locations.

GHD has reviewed the Coffey results as part of this report, however GHD is not responsible for the quality control procedures, actual methodology employed by Coffey, choice of analytical laboratory and laboratory methodologies or choice of laboratory analyses.

2.4 Conceptual Site Model

A Conceptual Site Model (CSM) was prepared to illustrate potential sources of contamination, primary and secondary release mechanisms and pathways to environmental and human health receptors.

The CSM is discussed further in Section 8 of this report.

2.5 Reporting

This Stage 1 PSI report has been prepared with reference to DEC guidelines. The report presents information obtained through the desktop study, summarises the findings of the Site visit and identifies any areas that require further investigation or remediation under current Western Australian legislation.

Where other parties have supplied information or data, the data is included and used in the form provided by other parties. The responsibility for the accuracy of such data remains with the issuing authority, not with GHD. Attention is drawn to Section 11, which outlines the limitations of this report.



3. Site Identification

3.1 Legal Identification

The legal description for each lot within the Site is reported in Tables 1 and 2.

Table 1	Lot Details		
Lot	Street Address	Description	Certificate of Title (Volume - Folio)
Lot 304	Lot 304 Fairway Dr, Bilingurr	Lot 304 on deposited plan 43435	LR3134 - 500
Lot 2605	32 Fairway Dr, Djugun	Lot 2605 on deposited plan 189036	2034 - 689
Lot 2646	250 Fairway Dr, Cable Beach	Lot 2646 on deposited plan 217578	LR3004 - 483
Lot 2659	4 Fairway Dr, Djugun	Lot 2659 on deposited plan 189827	LR3000 - 440
Lot 2658	22 Fairway Dr, Djugun	Lot 2659 on deposited plan 189827	LR3000 - 439
Lot 3106	Lot 3106 Fairway Dr, Cable Beach	Lot 3106 on deposited plan 36809	LR3114 - 956
Lot 301	No street address.	Lot 301 on deposited plan 45072	LR3050 - 459
Lot 300	No street address.	Lot 300 on deposited plan 45072	LR3050 - 458
Lot 3091	41 Buckleys Rd, Bilingurr	Lot 3091 on deposited plan 193625	LR3100 - 973
Lot 1224	599 Broome Rd, Bilingurr	Lot 1224 on deposited plan 182427	2668 - 478
Lot 1024	120 Locke St, Bilingurr	Lot 1024 on deposited plan 180234	1653 - 321
Lot 1776	585 Broome Rd, Bilingurr	Lot 1776 on deposited plan 185242	1751 - 470
Lot 3150	Lot 3150 Fairway Dr, Cable Beach	Lot 3150 on deposited plan 36809	LR3131 - 488
Lot 3149	Lot 3149 Fairway Dr, Cable Beach	Lot 3149 on deposited plan 36809	LR3131 - 487
Lot 687	No street address.	Lot 687 on deposited plan 168897	LR3124 - 587
Lot 3132	No street address.	Lot 3132 on deposited plan 3208	LR3128 - 64
Lot 3129	TBC		
Lot 3130	TBC		



Table 2	Site Details
	One Dotano

Local Government Authority:	Shire of Broome	
Co-ordinates of Site Boundary ¹ :	North-west corner: Zone: 51	Nothing: 8020667 Easting: 418119
	South-east corner: Zone: 51	Nothing: 8017444 Easting: 419493

¹Co-ordinates are provided in MGA94.

Copies of Certificates of Title and DEC Site Summary Form are presented in Appendix A.

3.2 Site Description

The Site is located approximately 4 km north of Broome in the Kimberley region of Western Australia. The Site area comprises 725 ha. The Site location is shown in Figure 1. The Site layout is shown in Figure 3.

3.2.1 Former Poultry Farm (Lot 2605)

A former poultry farm, operated by North West Eggs, is located at Lot 2605 Fairway Drive, Djugun. The lot is square in shape, with access being from Fairway Drive to the north.

Infrastructure present at the location of the former poultry farm includes a caretaker's house, several sheds, a workshop and a store room. The majority of the former poultry farm is cleared of vegetation, with only a few large trees remaining present. The Site is surrounded by a large wire fence with a locked gate.

Approximately 35% of the lot is covered by infrastructure, the remaining 65% of the lot is unsealed.

3.2.2 Former Abattoir (Lot 1024)

A former abattoir is located near the north-east boundary of the Site at Lot 1024 Locke Street, Broome. The lot is rectangular in shape, with access from Locke Street to the south.

Infrastructure present at the former abattoir is mainly located near the south-west boundary of the lot and includes a house and several small sheds. The majority of the former abattoir lot is covered by vegetation, with several small dirt tracks running across the Site. The Site is surrounded by a small wire fence.

Approximately 90% of the lot is covered by vegetation, with the remaining 10% being covered by infrastructure and unsealed tracks.

There are two residential lots, Lot 1776 and Lot 1224, located to the east of Lot 1024. Infrastructure present at these lots comprises houses and sheds. The majority of these lots are covered by vegetation.

3.2.3 Water Corporation Tank (Lot 2646)

A Water Corporation tank is located near the western boundary of the Site at Lot 2646 Fairway Drive, Cable Beach. The lot is rectangular in shape, with access being from Fairway Drive to the west.



The water tank is located near the centre of the lot. The area surrounding the tank is mostly cleared of vegetation, with only a few sparse trees remaining present. The lot is surrounded by a large wire fence with a locked gate.

Approximately 15% of the Site is covered by the water tank, with the remainder being unsealed surfaces.

3.2.4 Former Camel Lease (Lot 300)

A former camel lease is located at Lot 300 Fairway Drive, Cable Beach. The lot is rectangular in shape with access being from the south along a dirt track, which runs in an eastern direction from Fairway Drive.

The only infrastructure present in the lot is a small water tank located in the south-east corner of the lot. The lot is mostly cleared of vegetation with only a few sparse trees and bushes remaining.

Approximately 90% of the lot is unsealed surfaces with the remainder being covered by the remaining vegetation.

3.2.5 Remainder of Site

The remainder of the Site is covered by dense native vegetation. There are also two sealed roads, Fairway Drive and Buckleys Road, and several unsealed roads and dirt tracks that divide the Site. There is evidence of illegal dumping along the roads and tracks that divide the Site.

Approximately 95% of the Site is covered by native vegetation with the remainder being unsealed roads and tracks.

3.3 Zoning

The Shire of Broome Town Planning Scheme (TPS) No. 4 indicates that the Site is currently zoned for a number of land uses including tourism, light and service industry, environmental cultural corridor, rural and public purposes. Historic zoning for the Site could not be obtained as no records were held by the Shire of Broome. Zoning information is provided in Appendix B.

3.4 Surrounding Land Use

The surrounding land uses shown in Figure 3 and are summarised below.

- **North:** The Site is bound to the north by native bushland and the Broome Waste Management Facility.
- **South:** The Site is bound to the south by Gubinge Road. Immediately south of Gubinge Road are residential properties which form Roebuck Estate.
- East: The Site is bound to the east by the Blue Haze light industrial area and Broome Road. Immediately east of Broome Road are residential properties, Hartmann's Garden Centre, Broome Speedway and rodeo grounds. Approximately 1 km to the east of the Site is Roebuck Bay.
- West: The Site is bound to the west by residential properties, camel lease areas, native vegetation and Coucal Street. Immediately west of the residential area are sand dunes followed by the Indian Ocean (approximately 1 km to the west of the Site).



3.5 Climate

The area has a tropical climate with hot and humid summers and warm winters. The nearest meteorological monitoring station is Broome Airport. The recorded climate data from this source is summarised in Table 3.

Station	Mean Annual Minimum Temperature Range	Mean Annual Maximum Temperature Range	Mean Annual Rainfall	Mean Annual Rain Days
Broome Airport	13.6°C (July) and 26.4°C (December)	28.8°C (July) and 34.3°C (April)	602.0 mm	34.9

(Source: Bureau of Meteorology Climatic Averages of Australian Sites, 2009)

3.6 Topography

The Geological Survey of Western Australia (GSWA) map indicates that the Site is located on a flat to gently undulating plain on the Dampier Peninsula with an approximate elevation of 20 m AHD (Goddard, 1988). The relatively flat topography of the Site was confirmed during the Site visit.

3.7 Geology

The geology of the Site is reported to comprise of silty sand over sandy gravel, which is described by GSWA (Gozzard, 1988) as:

Sm₁₀ SILTY SAND: red, fine grained, sub-rounded quartz, variable silt content, homogeneous.

This geology is consistent with surface observations made during the Site visit.

3.8 Hydrogeology

3.8.1 Groundwater

Groundwater elevation at the Site is reported to be at 2 m AHD, approximately 15 to 20 m bgl (Gozzard, 1988). This is supported by bore construction details contained in the DoW WIN Bore Search (Appendix C).

The Site is located in the Cape Leveque Coast drainage basin (Department of the Environment, Water, Heritage and the Arts, 2009a).

Regional groundwater resources of the Broome area comprise both confined and unconfined aquifers and includes three major and to minor aquifers (Laws, 1991). The most utilised aquifer is the Broome Sandstone that comprises fine to coarse grained sandstone with minor beds of pebble conglomerate, grey siltstone and claystone. The Broome Sandstone is unconfined and is separated from the underlying (confined) aquifers, Alexander Formation and the Wallal Sandstone, by an aquiclude, the Jarlemai Siltstone.



The well field that supplies Broome (located approximately 12 km to the north-east of the Broome town site) is screened in the Broome Sandstone aquifer. The depth of groundwater at the well field is 25 m to 30 m with the highest groundwater levels being to the north-east of the well field (WRC, 2001). Groundwater in the Broome area moves under the influence of gravity west toward the ocean and south toward Roebuck Bay (WRC, 2001).

Groundwater recharge to the Quaternary aeolian sands is by direct rainfall percolation, estimated to be 6.5% of rainfall (Hingston and Gailitis, 1976). Recharge to the Broome Sandstone aquifer system is by direct percolation of rainfall and via leakage from the coastal dunes north of Broome. Recharge is estimated to be about 4 to 5 % of the average annual rainfall (Laws, 1987).

Groundwater discharges over a saline interface (WRC, 2001). Groundwater salinity ranges from less than 100 mg/L TDS to more than 30,000 mg/L TDS, the lower levels being in the inland areas increasing towards discharge areas along the coast and Roebuck Plains above the saltwater wedge (Laws, 1991). Groundwater salinity at the Site is expected to range from 1000 to 3000 mg/L TDS in the west to greater than 14,000 mg/L TDS in the east of the Site (Laws, 1991).

3.8.2 DoW WIN Bore Search

A Department of Water (DoW) bore database search indicated that 109 registered bores are located within a 2.5 km radius of the Site, the majority of which are privately owned and used for observation purposes. Seven bores are located on the Site. These bores are mostly privately owned for observation purposes, however there is also one DoW bore present onsite, which forms part of a groundwater monitoring network. The bore locations are shown in Appendix C.

It is pertinent to note that unregistered bores may exist within and around the Site which could potentially be used for domestic consumption.

3.9 Hydrology

3.9.1 Surface Water

Surface water is expected to infiltrate through sands on the Site.

Review of hydrology maps and the Site visit indicates that there are no wetlands or watercourses located at the Site. The Indian Ocean is located approximately 1 km to the west of the Site. Roebuck Bay is located approximately 1 km south-east of the Site and is listed on the RAMSAR register as an internationally significant wetland (DEWHA, 2009b).

3.9.2 Drinking Water

The DoW Geographic Data Atlas indicates that there are no Public Drinking Water Source Areas (PDWSA) within the vicinity of the Site. The nearest PDWSA is approximately 6 km to the north-east of the Site.

3.10 Preliminary Acid Sulfate Soil Assessment

The Western Australian Planning Commission's (WAPC) publication Planning Bulletin Number 64 Acid Sulfate Soils states that developers, planners and the community need to be aware of the implication of



the presence of Acid Sulfate Soils (ASS) and the management processes required to avoid there potential adverse effects on the environment and infrastructure (WAPC, 2009).

GHD completed a desktop ASS assessment of the Site in May 2009. Information obtained during this investigation identified that there was no ASS data available for the Site, however land approximately 1 km to the south-west of the Site was located in an area of moderate to high risk of ASS occurring within 3 m of the natural soil surface (GHD, 2009c). This area was associated with the mudflats of Roebuck Bay.

Accordingly as a precautionary measure, given the proximity of the Site to the Indian Ocean and Roebuck Bay, the underlying geology and the depth to groundwater beneath the Site, GHD considers the Site to have a low to moderate risk of ASS occurring within 3 m of the natural soil surface (GHD, 2009c).

3.11 DEC Contaminated Sites Database

The DEC *Contaminated Sites Database* presents information on known or suspected contaminated sites that have been classified by the DEC within the following categories:

- » Contaminated remediation required;
- » Contaminated restricted use; or
- » Remediated for restricted use.

The DEC *Contaminated Sites Database* does not provide details of sites that are listed as 'Possibly contaminated – investigation required'.

A search of the DEC *Contaminated Sites Database* shows that the Site and surrounds have not been reported as known contaminated sites at the time of the search (25 June 2009).

Results from the Contaminated Sites Database search are presented in Appendix D.

3.12 Shire of Broome

The Shire of Broome was contacted in regards to any available development applications or environmental information that they held on record for the Site. The Manager of Planning Services for the Shire of Broome, Michelle Teoh, was unable to provide any documentation relating to the Site.

Mr. Ken Donohoe (Shire of Broome CEO) was also contacted regarding the Broome Waste Management Facility located to the north of the Site. It was indicated that there is one groundwater monitoring well onsite and that the monitoring data from this well is limited. GHD has not reviewed any landfill groundwater monitoring data from the facility. The Broome Waste Management Facility includes a Class 2 landfill operated that appears to have been in operation since the mid 1980s from historical aerial photographs. The Broome Waste Management Facility also includes a Horizon Power LNG Gas Plant that reportedly supplies gas to the Broome town site. Additionally, fires have been reported to have occurred historically at the Broome Waste Management Facility.

3.13 Sensitive Receptors

Based on a review of surrounding land uses and activities at the Site potential sensitive environmental and anthropogenic receptors that may be affected by any potential soil or groundwater contamination at the Site include the following:



- » Groundwater beneath the Site;
- Ecological communities within surface water bodies being the Indian Ocean to the west and Roebuck Bay to the east;
- » Onsite and offsite vegetation and fauna;
- » Users of potential registered and unregistered groundwater bores within the area;
- » Visitors to the Site: the Site is open to public access;
- » Construction workers during Site development;
- » Future onsite residents; and
- » Adjacent offsite residents.



4. Data Quality Objectives

The Data Quality Objectives (DQOs) for the investigation are based on guidance presented in AS 4482.1 - 2005 and as further described in *Guidance on Systematic Planning Using the Data Quality Objective Process (EPA QA/G-4)* (US EPA, 2000). DQOs establish the framework for contamination investigations and are seven stepped, staged process that develops from defining the problem at the Site to optimising the design for the investigation. The seven steps are outlined below:

- » Step 1: State the Problem
- » Step 2: Identify the Principal Study Question
- » Step 3: Inputs to the Decision
- » Step 4: Boundaries of the Study
- » Step 5: Decision Rules
- » Step 6: Tolerable Limits on Decision Errors
- » Step 7: Optimisation of the Data Collection Process

At this stage of the PSI, GHD has developed the DQOs to Steps 1 and 2; to "State the Problem" and "Identify the Principal Study Question". It is not considered appropriate at this stage of the PSI to complete the DQOs to Step 7 as these will be developed in the Sampling and Analysis Plan, should future intrusive soil and groundwater investigations be undertaken.

4.1 Step 1: State the Problem

Is there contamination present on the Site that poses an unacceptable risk to human health or the environment that restricts development of the Site for mixed land use purposes?

4.1.1 Identify Members of the Planning Team

Role	Company	Responsibility
Client	LandCorp	Land owners and financial decision makers.
Regulator	Department of Environment and Conservation	Review and endorsement of all reports.
Consultant	GHD	Prepare PSI.

Table 4 Investigation Team Main Parties

4.1.2 Develop the Conceptual Site Model

The Conceptual Site Model is provided in Section 8 of this report.

4.1.3 Define the Exposure Scenarios

Exposure scenarios are presented in the Conceptual Site Model in Section 8 of this report.



4.1.4 Specify Available Resources and Constraints

Resources

GHD provide and/or contract the necessary resources and suppliers for the work as specified in a financial proposal for the investigation of the Site, which was approved by LandCorp prior to commencing investigations onsite.

Constraints

Budget and time constraints are not considered to be an issue.

The former abattoir could not be accessed during the Site visit, therefore this area could not be included as part of the observations from the Site visit.

4.2 Step 2: Identify the Decision

4.2.1 Identify the Principal Study Question

Is there contamination present on the Site that poses an unacceptable risk to human health or the environment that restricts development of the Site for mixed land use purposes?

4.2.2 Identify Alternative Actions that Could Result from Resolving the Principal Study Question

Should contamination identified as present on the Site not pose an unacceptable risk to human health or the environment that restricts development of the Site for mixed land use purposes no further action will be required.

Should contamination identified as present on the Site pose an unacceptable risk to human health or the environment that restricts development of the Site for mixed land use purposes the following actions may be undertaken:

- » Undertake a quantitative Environment and/or Health Risk Assessment to assess the risks to the occupiers of the Site;
- » Remove impacted soils from the Site and validate to DEC guidelines or treat soil insitu; and
- » Restrict, treat or monitor impacted groundwater as required.

4.2.3 Combine the Principal Study Question and Alternative Actions into a Decision Statement

Determine whether contamination identified as present on the Site poses an unacceptable risk to human health or the environment that restricts development of the Site for mixed land use purposes and requires necessary remediation and management of contaminated soil and/or groundwater to allow development of the Site for mixed land uses and prevents contamination impacting identified receptors.





4.2.4 Organise Multiple Decisions

(Reference: US EPA, 2000)



5. Site History

5.1 Previous Environmental Investigations

5.1.1 GHD (2009a and 2009b) Broome Environmental Consultancy: Lot 3150 (Area A) and Lot 304 (Area B): Preliminary Environmental Impact Assessment and Biological Survey. January 2009.

GHD were commissioned by LandCorp in 2009 to undertake a Preliminary Environmental Impact Assessment and Biological Survey of the Broome North Redevelopment Site.

The objective of the assessment was to provide an examination and description of the Site environment to ensure that all aspects of biological/ecological significance are identified and recorded. The assessment involved a desktop review and biological survey of the Site.

The results of the assessment include the following:

- » No vegetation types surveyed across the study area are considered to be under-represented;
- » Vegetation condition was considered range from Very Good to Completely Degraded;
- » The study area is described as having a moderate flora species diversity with 95 taxa from 33 families;
- » No Declared Rare or Priority Flora species were recorded from the survey area;
- » Fifteen weed species were recorded from the survey area. Weed species were most dominant along tracks and roads, within and adjacent to the light industrial area, and amongst rubbish dumped within the study area;
- Two introduced species recorded within the study area, the Bellyache Bush and Rubber Tree, are listed as Declared Plants under the *Agriculture and Related Resources Protection Act 1976*. Occurrences of these plants should be controlled using the appropriate control methods as recommended by the Western Australian Department of Agriculture and Food;
- The study area is located within the buffer zones of one 'Vulnerable' Threatened Ecological Community (TEC); 'vine thickets on the coastal sand dunes of Dampier Peninsula'. However, no TECs or PECs were identified as being present on the site during the field survey;
- » One fauna species of national environmental significance was recorded in the study area. The Rainbow Bee-eater (*Merops ornatus*) is a Migratory and Marine species listed under the EPBC Act. The Rainbow Bee-eater is a common and widespread species and is unlikely to be significantly impacted by the proposed project;
- » No wetlands or watercourses are located within the study area. Roebuck Bay, an internationally significant wetland (RAMSAR listed site) is located within 10 km of the study area. This RAMSAR listed site will not be impacted by the proposed project;
- » No Environmentally Sensitive Areas (ESA) are situated within the study area;
- » The study area is not located within a Public Drinking Water Source Area (PDWSA);
- » The study area intersects a number of Aboriginal Heritage sites which are protected under the *Aboriginal Heritage Act (1972)*. A detailed Aboriginal Heritage survey is recommended in order to



determine the impact of the proposed project on Aboriginal Heritage Sites. Approval to disturb these sites will be required;

- The clearing for the proposed project has been assessed to may be at variance to Clearing Principle
 (g), however with appropriate management plans the potential impacts can be managed;
- A number of potential impacts have been identified as a result of the proposed project. Where possible these impacts should be avoided and minimised in the design stage but where potential impacts still occur management measures will be required to mitigate these issues;
- » Formal referral of this proposal to the Department of Environment, Water, Heritage and the Arts (DEWHA) under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) is not considered warranted;
- » It is considered unlikely that issues relating to this proposal will trigger a formal assessment by the EPA; and
- Any clearing of native vegetation will require a permit from the Department of Environment and Conservation (DEC) under Part V of the EP Act, except where exemptions apply under Schedule 6 of the Act or are prescribed in the *Environmental Protection (Clearing of Native Vegetation) Regulations* 2004, and not in an Environmentally Sensitive Area (ESA).

5.1.2 GHD (2009c) Lot 3150 and Lot 304, Broome: Acid Sulfate Soil Desktop Investigation. May 2009.

GHD were commissioned by LandCorp in 2009 to undertake a desktop Acid Sulfate Soil (ASS) desktop investigation of the Site.

The ASS investigation involved a review of the proposed development in relation the potential implications on ASS, review of the geology and hydrogeology in the area, review of sensitive receptors and potential impacts and recommendations with reference to DEC guidelines.

The investigation identified that ASS risk mapping currently does not cover the area of the Site. However, based upon the following information presented in this investigation, it is considered likely that a low to moderate risk of ASS exists for the area.

Based on the risk of ASS for the area, it was recommended that a field investigation be undertaken to confirm the potential presence of ASS at the Site.

5.1.3 Stass Environmental (2005) Baseline Soil Contamination Assessment: North West Eggs, Broome, WA. December 2005.

Stass Environmental (Stass) undertook a Baseline Soil Contamination Assessment of the North West Eggs facility on Fairway Drive, Broome, Western Australia on behalf of the Anglican Schools Commission ('ASC'). A copy of the Stass Report is provided in Appendix E.

The Stass investigation comprised a desktop assessment, site walkover and targeted soil sampling across the Site.

The desktop assessment and site walkover identified several areas of potential contamination at the former poultry farm including possible pesticide treatment under building slabs, use of cleaning chemicals (including formaldehyde) which may have been part of runoff during washdown of the sheds and possible arsenic contained in chicken feed and used as an antibiotic. Stass also identified a 205 L



diesel fuel drum onsite, however no sampling was conducted at this locations. Diesel drums were not observed during the Site visit conducted by GHD as part of this investigation.

Stass undertook soil sampling and analysis at 19 surface locations across the Site in order to assess the potential for contamination to be present at the Site. Soil samples were submitted to a National Association of Testing Authorities (NATA) accredited laboratory for analysis. The analytical suite for the soil samples comprised heavy metals (19 samples), organochlorine pesticides (17 samples) and formaldehyde (five samples). Soil analytical results indicate that concentrations of all analytes were below Health Investigation Levels for standard residential with gardens/accessible soil (HIL-A).

Stass concluded that there was no evidence of significant soil contamination at the North West Eggs facility. GHD notes that soil samples from below concrete pads of the chicken sheds were not analysed and therefore residual pesticide contamination may be present at these locations. No groundwater sampling was undertaken at the Site, however Stass concluded that on the basis of the soil results it is unlikely that groundwater contamination would be present at the Site.

The Stass investigation focussed on surface soil contamination at the location of the former poultry farm. Results obtained during the Stass soil investigation were supported by a quality control/quality assurance program which assisted in validating the integrity of sampling procedures and reliability of laboratory analyses. Results obtained during the Stass investigation are therefore considered to be relatively reliable and suitable for use in the contaminated sites decision making process.

5.2 Aerial Photographs

Aerial photographs of the Site were obtained from Landgate in order to ascertain the development history and land use practices that may have led to contamination at the Site. Aerial photographs of the Site are not available from Landgate prior to 1960. Summaries of observations are provided below and aerial photographs are provided in Appendix F.

5.2.1 25 July 1960

The Site is predominantly covered by native vegetation with several unsealed tracks running across the Site. There is a small area of cleared vegetation near the eastern boundary of the Site which is possibly a small scale homestead and agricultural enterprise, however this cannot be verified.

The extent of the aerial photograph provided by Landgate for 1960 does not include the north-east corner of the Site, therefore the land in the area cannot be assessed as part of this review.

The area surrounding the Site appears to be predominantly covered by native vegetation. A small area to the west of the Site appears to have been cleared of vegetation, possibly for small-scale agricultural purposes, however this cannot be verified.

5.2.2 15 July 1967

The Site is predominantly unchanged since the 1960 aerial photograph, however the north-east corner of the Site is now visible in this photograph. There is a small area of cleared vegetation evident in the north-east portion of the Site again assumedly small scale agriculture with a homestead.

The area surrounding the Site is predominantly unchanged, however due to the greater extent of the photograph the Broome Airport runway is now evident to the south of the Site. Locke Street is evident in the northern portion of the Site. There are also several unsealed tracks evident around the Site.



5.2.3 29 July 1982

The Site is still predominantly covered by native vegetation. There are several new unsealed tracks and roads running across the Site. There are also several large areas cleared of vegetation in the southern half of the Site, and another smaller area of cleared vegetation near the western boundary of the Site. The cleared areas in the southern half of the Site may be associated with agricultural purposes. The area of cleared vegetation in the north of the Site is much clearer in this photograph and appears to be infrastructure pertaining to a former abattoir.

The extent of this photograph does not include a small area in the north-east corner of the Site, therefore the land in this area cannot be assessed as part of this review.

Several areas of cleared vegetation and new unsealed roads are visible to the east of the Site. The Broome Speedway and rodeo grounds are also evident to the east of the Site. Two large areas near the eastern boundary of the Site have been cleared and developed as large residential lots. Several new roads are evident to the west of the Site.

5.2.4 17 July 1989

The Site remains predominantly covered by native vegetation. There are several new unsealed tracks and roads running across the Site, including Buckleys Road and Fairway Drive. Further clearing is evident at the Site, particularly in the south-east corner. A shed, possibly associated with the poultry farm is present to the south of Fairway Drive. Several, assumedly residential, buildings and some small areas of cleared vegetation are evident in the north-east corner of the Site.

The area surrounding the Site is predominantly unchanged, however the Broome Waste Management Facility is now evident to the north of the Site.

5.2.5 20 July 2000

The Site remains predominantly covered by native vegetation, with some areas of vegetation regrowth in previously cleared area particularly in the southern half of the Site. Fairway Drive has been sealed. A water tank is now visible in the western portion of the Site. There is additional clearing and infrastructure present in the western half of at the North West Eggs poultry farm, including three large sheds.

The Broome Waste Management Facility to the north of the Site has been extended to the west. A new light industrial development ("Blue Haze Light Industrial Area") is evident in the south-east corner of the Site. There has been an expansion to residential developments to the east, south and west of the Site.

5.2.6 23 May 2007

The Site remains predominantly covered by native vegetation. Two small areas of cleared vegetation are visible in the western portion of the Site. The area surrounding the water tank has also been cleared of vegetation.

The Broome Waste Management Facility to the north of the Site has been further extended to the west. There are additional properties evident in the Blue Haze Light Industrial Area. Residential developments to the east, south and west of the Site have continued to expand.



5.3 Certificates of Title

GHD have reviewed Certificate of Title deeds supplied by Landgate that document changes in land ownership. Details regarding the occupation and/or business type of the registered proprietors were not provided on the Certificates of Title. Details of the Site ownership history are summarised in Table 5 below and the title deeds are supplied in Appendix A.

Lot Number	Volume - Folio	Date	Registered Proprietors
2646	LR3004 - 483	7 February 1991	Crown Land - Reserve Under Management Order.
			Primary Interest Holder: Water Authority of Western Australia.
304	LR3134 - 500	8 June 2007	Unallocated Crown Land
	LR3128 - 57	5 July 2004	Unallocated Crown Land
	LR3099 - 18	7 May 2003	Unallocated Crown Land
	LR3089 - 183	10 November 1994	Unallocated Crown Land
2659	LR3000 - 440	14 February 2005	Unallocated Crown Land
2658	LR3000 - 439	14 February 2005	Unallocated Crown Land
3106	LR3114 - 956		Unallocated Crown Land
	LR3120 - 396	28 December 2000	Unallocated Crown Land
301	LR3050 -459		Unallocated Crown Land
	LR3128 - 63	15 March 2005	Unallocated Crown Land
	LR3120 - 396	28 December 2000	Unallocated Crown Land
300	LR3050 - 458	29 June 2005	Crown Land
			Primary Interest Holder: Steve Madden
	LR3128 - 63	15 March 2005	Unallocated Crown Land
	LR3120 - 396	28 December 2000	Unallocated Crown Land
3091	LR3110 - 973	8 June 2007	Unallocated Crown Land
	LR3100 - 297	29 March 1993	Unallocated Crown Land
2605	2034 - 689	18 September 2007	The Anglican Schools Commission Inc
	2016 - 667	9 December 1994	Tamarama Holdings Pty Ltd (North West Eggs)
1224	2668 - 478	17 September 2007	Dean Graham Kemp and Sandra Gaye Wotherspoon
	LR3002 - 440	24 November 1998	Unallocated Crown Land

Table 5	Summary of Lot Ownership



Lot Number	Volume - Folio	Date	Registered Proprietors
1024	1653 - 321	18 July 1989	Margaret Pamela Livingstone and Ralph William Livingstone
		28 September 1983	Susan Helen Giesen, Jaqueline Anne Knox and Gwendolyn Frances Knox.
	1449 - 610	8 October 1976	John Marquis Charles Knox
1776	1751 - 470	1 January 2001	Robert John Knox and Wendy Joan Knox
3150	LR3131 - 488		Unallocated Crown Land
	LR3099 - 18	7 May 2003	Unallocated Crown Land
	LR3089 - 183	10 November 1994	Unallocated Crown Land
3149	LR3131 - 487		Unallocated Crown Land
	LR3099 - 18	7 May 2003	Unallocated Crown Land
	LR3089 - 183	10 November 1994	Unallocated Crown Land
687	LR3124 - 587		Unallocated Crown Land
	LR3002 - 352	29 June 1992	Unallocated Crown Land
3132	LR3128 - 64		Unallocated Crown Land
	LR3120 - 396	28 December 2000	Unallocated Crown Land
	LR3099 - 18	7 May 2003	Unallocated Crown Land
	LR3089 - 183	10 November 1994	Unallocated Crown Land
3129	TBC		
3130	TBC		

5.4 Dangerous Goods

A request was lodged with the Department of Mines and Petroleum (DMP) under the *Freedom of Information Act* (1992) to undertake a search of the Dangerous Goods Licence Register to determine whether any potentially hazardous materials have been licensed for use or storage at the Site.

The search failed to produce any documentation containing information relating to the Site. However, it should be noted that although no documentation could be located by DMP, there is still potential for current and historic storage of dangerous goods at the Site. Documentation provided by DMP is provided in Appendix G.



6. Site Visit

A Site visit was undertaken by a GHD Environmental Scientist on the 30 and 31 July 2009. Photographs taken during the Site visit are presented in Appendix H.

6.1 Former Poultry Farm (Lot 2605)

A former poultry farm, operated by North West Eggs, is located at Lot 2605 Fairway Drive, Djugun, as shown in Figure 3. The infrastructure present at the former poultry farm includes a caretaker's house, four sheds, a packing room, a rearing shed and a store room (Figure 4). Cement building pads remain present at the location of the former workshop and former brooding shed (Plate 1). The caretaker's house is the only building currently in use at the former poultry farm and is still used by the caretaker and his family. The majority of the former poultry farm is cleared of vegetation with only a few remaining trees present. The surface of the poultry farm, excluding the location of concrete building pads is unsealed (Plate 2). There are several dirt tracks running across the Site. There was no evidence of staining or odours around the poultry farm.

Stass also identified a 205 L diesel fuel drum onsite, however no sampling was conducted at this locations. Diesel drums were not observed during the Site visit conducted by GHD as part of this investigation.

The former poultry farm is surrounded by a large wire fence with a locked gate. Vegetation surrounding the former poultry farm appears to be healthy and in good condition. Discussions with the current site caretaker indicate that the Site has not been in operation for at least 2 years.

The Site walkover did not identify any areas of significant contamination at the location of the former poultry farm.

6.2 Former Abattoir (Lot 1024)

A former abattoir is located near the north-east boundary of the Site at Lot 1024 Locke Street, Broome, as shown in Figure 3. Access to the former abattoir could not be obtained during the Site visit however anecdotal evidence indicates that the area was operated as a small scale abattoir (4-5 cattle per week) by the local butcher. It is understood that all meat slaughtered at the Site was used for sale at the butchers located in Broome.

The Site has not been used as an abattoir since 1985. The Site now appears to be used for residential purposes. The only evidence that could confirm the presence of a former abattoir were the remaining stock yards near the southern boundary of the lot (Plate 3).

6.3 Water Corporation Tank (Lot 2646)

A Water Corporation tank is present in the western portion of the Site at Lot 2646 Fairway Drive, Cable Beach, as shown in Figure 3. The area is predominantly cleared with only a few sparse trees remaining. Infrastructure present includes a large water tank, pumping equipment, pipes, cement tanks and a laydown area (Plates 4 to 6). There are also several large piles of mulch present to the north of the water tank (Plate 7).



The tank is surrounded by a large wire fence with a locked gate (Plate 8). Vegetation surrounding the fenced area appears to be healthy and in good condition. There is minor dumping of rubbish around the enclosure however this is generally limited in extent and comprises mainly beer cans and plastic drink bottles.

The Site walkover did not identify any areas of significant contamination at the Water Corporation Water Tank location.

6.4 Former Camel Lease (Lot 300)

A former camel lease area was located at Lot 300 Fairway Drive, Cable Beach, as shown in Figure 3. This area now appears to be used as a dirt bike track. Infrastructure present in this area is limited to a water tank and small wire fence (Plate 9). This area is cleared of vegetation with only a few sparse trees and bushes remaining.

There was a large burnt area identified as well as several dumped tyres at the location of the former camel lease area (Plate 10 and 11).

Given the small scale operations, it is not considered that this land use is likely to have caused any significant soil or groundwater contamination at the Site.

6.5 Remainder of Site

The remainder of the Site is primarily covered by dense native vegetation. This vegetation appears to be healthy and in good condition. There are two sealed roads which run across the Site, Buckleys Road (Plate 12) and the eastern half of Fairway Drive. The remainder of Fairways Drive is unsealed and subject to flooding during the wet season and so is closed to traffic for part of the year. There are also a number of unsealed roads and tracks running throughout the Site, which includes a road which follows an underground gas pipeline in a north-south direction from the Broome Waste Management Facility to Gubinge Road (Plate 13).

There is a considerable amount of rubbish illegally dumped along the unsealed tracks. Dumped wastes include white goods (such as fridges, air conditioners and washing machines), aluminium cans, glass bottles, plastic bottles, drums, chairs, green wastes, cardboard boxes, bed mattresses, car bodies and car tyres (Plates 14 to 18). Dumped material is generally limited to unsealed tracks across the Site. Intermittent wire fencing was also erected alongside some of the unsealed tracks across the Site.

The Site boundary generally comprises of vegetation which appears to be healthy and in good condition. There were earth works occurring at Gubinge Road along the southern boundary of the Site at the time of the Site visit. The Broome Waste Management Facility is present along the northern boundary of the Site. This facility is fenced and there does not appear to be rubbish blowing from the facility onto the Site (Plate 19).

GHD did not observe any activities likely to cause significant soil or groundwater contamination across the remainder of the Site.



7. Review of Geotechnical Consultants Soil Sampling at the Former Poultry Farm

Limited soil sampling was undertaken by Coffey on 30 July 2009 at the location of the former poultry farm. GHD were onsite at the same time as the geotechnical consultants to review the contamination sampling methodology and direct sampling locations.

Ten soil samples were collected from the surface soils at various locations across the former poultry farm. Approximate sampling locations are shown in Figure 4.

GHD has reviewed the Coffey results as part of this report, however GHD is not responsible for the quality control procedures, actual methodology employed by Coffey, choice of analytical laboratory and laboratory methodologies or choice of laboratory analyses.

7.1 Sampling Methodology

Soil sampling was undertaken by Coffey and consequently the methodology undertaken will be reported by Coffey. In general, Coffey sampling methodology observed was considered to follow standard practice and followed the following general principles:

- » Sample Collection: Samples were collected using clean nitrile gloves and placed into laboratory prepared containers.
- » Sample Labelling: Each sample was identified by means of a label showing sample location, date, job number and depth.
- » Sample Storage: The samples were placed in an insulated container with frozen ice bricks to be kept cool during storage and transportation to the laboratory.
- » Chain of Custody Procedures: Sample details and analysis schedule details were entered on to a chain of custody form that accompanied the samples to the laboratory.
- » Decontamination Procedures: sampling equipment was decontaminated following each sample location. In addition, all samples were handled by field staff using disposable nitrile gloves, which were replaced between each sampling point.

7.2 Assessment Criteria

GHD adopted the following assessment criteria, which are based on the DEC risk-based ecological and human health soil assessment criteria in the DEC *Assessment Levels for Soil, Sediment and Water* Guidelines (DoE, 2003), which are based upon those established in the *National Environment Protection* (Assessment of Site Contamination) Measure (NEPC, 1999).

For environmental evaluation, the concentrations of target compounds in soil are compared to Ecological Investigation Levels (EILs) within the DEC *Assessment Levels for Soil, Sediment and Water* Guidelines (DoE, 2003). These levels represent conservative criteria for the protection of ecological values and are the first tier of assessment criteria.

The DEC also provides human health based investigation levels for various land uses including residential, open-space/parks/recreational and commercial/industrial, which are generally less stringent



than environmental criteria. However, these criteria may only be used it if can first be demonstrated that the material does not pose a risk to the environment. Health Investigation Levels (HILs) have been developed to be protective of human health and are based on an assessment of potential exposure via ingestion of soil and dermal contact.

It is understood that the Site will be developed for residential and mixed land use purposes, therefore the most conservative health investigation level, HIL-A, will be used. HIL-A is for "standard residential with garden/accessible soil (home grown product contributing less than 10% of vegetable and fruit intake; no poultry); this category includes children's daycare centres, kindergartens, pre-schools and primary schools". Soil analytical results will also be compared to HIL-E and HIL-F criteria, which are considered suitable for "parks, recreational open space and playing fields, includes secondary schools" and "commercial/industrial", respectively.

7.3 Laboratory Program

GHD recommended the following laboratory analyses be conducted on the soil samples collected from the former poultry farm:

- » Heavy metals (arsenic, cadmium, chromium, cobalt, copper, manganese, nickel, lead, zinc and mercury);
- » Nutrients (phosphorus and nitrogen);
- » Total Petroleum Hydrocarbons (TPH);
- » Monocyclic Aromatic Hydrocarbons (benzene, toluene, ethylbenzene and xylene);
- » Polycyclic Aromatic Hydrocarbons (PAH); and
- » Organochlorine Pesticides (OCPs).

Coffey analysed the soil samples collected from the former poultry farm for the following analytical suite:

- » Heavy metals (arsenic, cadmium, cobalt, chromium, copper, lead and zinc);
- » Nutrients (phosphorus and total nitrogen);
- » TPH; and
- » PAH.

7.4 Analytical Results

Laboratory results are tabulated in Table I1, Appendix I and laboratory certificates of analysis are presented in Appendix J. The results are summarised below.

7.4.1 Heavy Metals

Ten soil samples were submitted for heavy metal analysis. Heavy metal concentrations were below adopted assessment levels, with the exception of zinc at two locations, as described below.

» Concentrations of zinc exceeded the EIL (200 mg/kg) in samples CF2 (270 mg/kg) and CF7 (220 mg/kg). Concentrations of zinc did not exceed HIL-A, HIL-E or HIL-F.



7.4.2 Total Petroleum Hydrocarbons

Ten soil samples were submitted for TPH analysis. TPH concentrations were below laboratory detection limits and adopted assessment levels, with the exception of the following.

» Concentrations of TPH C₁₅-C₂₈ and TPH C₂₉-C₃₆ exceeded the HIL-A (90 mg/kg), HIL-E (180 mg/kg) and HIL-F (450 mg/kg) in CF9 (330 mg/kg and 390 mg/kg, respectively).

7.4.3 Polycyclic Aromatic Hydrocarbons

Ten soil samples were submitted for PAH analysis. The samples reported PAH concentrations below laboratory reporting limits and adopted assessment criteria.

7.4.4 Nutrients

Ten soil samples were submitted for nutrient (phosphorus and total nitrogen) analysis. Nutrient concentrations reported the following ranges.

- » Concentrations of phosphorus ranged from 270 mg/kg in CF1 to 6100 mg/kg in CF8.
- » Concentrations of total nitrogen ranged from 500 mg/kg in CF5 to 2600 mg/kg in CF4.

7.5 Summary

The soil investigation undertaken by Coffey was limited in extent, as was restricted to surface soil sampling (0.0-0.1m below ground level), a small suite of analytes that did not include pesticides and did not comply to DEC recommended sampling density for the site area.

Laboratory analysis indicates that zinc exceeded the EIL at two locations and TPH C_{15} - C_{28} and TPH C_{29} - C_{36} exceeded the HIL-A, HIL-E and HIL-F at one location. No other exceedances of adopted criteria were recorded at the former poultry farm.

Concentrations of zinc that exceeded the EIL were collected from locations of the former scrap metal areas near the northern and southern boundaries of the former poultry farm. These concentrations marginally exceed the EIL and as no vegetation is present at the location of these exceedences, these concentrations are not considered to present a risk to the surrounding environmental.

Concentrations of TPH that exceeded the HIL-A and HIL-E were collected from the location of a former manure pile in the centre of the former poultry farm. Given the concentrations exceed the health investigation levels, GHD considers that this exceedance should be delineated to determine the extent of the TPH contamination at the former poultry farm.



8. Preliminary Conceptual Site Model

A Conceptual Site Model, based on information available to date presented in this report, that identifies potential primary sources of contamination, pathways and receptors is presented in Appendix K. A summary of the issues identified are provided in Table 6.

Table 6	Preliminary Conceptual Site Model Summary						
Lot	Area of Potential Environmental Concern	Contaminants of Concern	Pathways	Receptors			
2605	Former Abattoir Unable to be assessed during the Site visit. Former Poultry Farm GHD review of soil investigations undertaken to date have not identified significant contamination.	From DEC (2005): nutrients (eg. nitrogen, phosphorus), biological oxygen demand (BOD), total suspended solids (TSS), oil and grease. From DEC (2005): carbamates, organochlorine pesticides (OCPs), organophosphate pesticides (OCPs), herbicides (eg. triazine, atrazine), nitrates, salinity, metals (eg. Al, As, Cd, Cu, Fe, Pb, Mg and K) and nutrients (eg. nitrogen, phosphorus). From Coffey Sampling: Zinc and TPH.	Lateral and vertical migration via permeable strata and preferential flow paths such as service lines. Surface water runoff. Dermal contact, inhalation (dust and vapours), and ingestion. Lateral and vertical migration via permeable strata and preferential flow paths such as service lines. Surface water runoff. Dermal contact, inhalation (dust and vapours), and ingestion.	Humans On-site Humans Off-site bore users, adja Ecosystems On Ecosystem Off- water bodies. Humans On-site bore users, adja Ecosystems On Ecosystem Off- water bodies.			
300	Camel Leases Small burn areas and animal wastes of small quantities. Potential for contamination considered to be minor.	Heavy metals, PAHs, TPH, BTEX and nutrients.	Lateral and vertical migration via permeable strata and preferential flow paths such as service lines. Surface water runoff. Dermal contact, inhalation (dust and vapours), and ingestion.	Humans On-site Humans Off-site bore users, adja Ecosystems Orr Ecosystem Off- water bodies.			
1776, 1224 687, 3091, 304, 2658, 2659, 3132 2646, 3149 3106, 301, 3150, 3129 and 3130	 Remainder of Site Illegally dumped wastes including car bodies, white goods, drums and household wastes. Potential for contamination considered to be minor. 	Heavy metals, TPH, BTEX, PCBs, PAHs and asbestos.	Lateral and vertical migration via permeable strata and preferential flow paths such as service lines. Surface water runoff. Dermal contact, inhalation (dust and vapours), and ingestion.	Humans On-site Humans Off-site bore users, adja Ecosystems On Ecosystem Off- water bodies.			
	Landfill Gas (methane) and groundwater contamination arising from landfill located to the north of the Site. Given the distance from the landfill to the Site (400 m), these issues are considered to be minor, however should still be considered as part of potential risks for site development.	From DEC (2005): PCBs, alkanes, sulphides, metals, organic acids, nutrients (eg. nitrogen, phosphorus), TPH, PAH, ammonia, landfill gas (eg. methane), TDS and BTEX.	Lateral and vertical migration of gas via permeable strata and preferential flow paths such as service lines. Groundwater flow beneath the Site.	Humans On-site Humans Off-site bore users, adja Ecosystems On Ecosystem Off- water bodies.			

te: Current/future residents, workers.

te: Down-gradient residential groundwater acent residents.

n-site: Flora and fauna, groundwater.

-site: Adjacent bushland, nearby surface

te: Current/future residents, workers.

te: Down-gradient residential groundwater acent residents.

n-site: Flora and fauna, groundwater.

site: Adjacent bushland, nearby surface

te: Future residents, workers.

te: Down-gradient residential groundwater acent residents.

n-site: Flora and fauna, groundwater.

site: Adjacent bushland, nearby surface

te: Future residents, workers.

te: Down-gradient residential groundwater acent residents.

-site: Flora and fauna, groundwater.

site: Adjacent bushland, nearby surface

te: Future residents, workers.

te: Down-gradient residential groundwater acent residents.

-site: Flora and fauna, groundwater.

site: Adjacent bushland, nearby surface



9. Conclusions

Based on the investigations completed, the following conclusions are made:

9.1 Former Poultry Farm (Lot 2605)

- » A review of the Certificates of Title indicates Lot 2605 Fairway Drive is currently owned by the Anglican Schools Commission Inc. This lot was previously owned by Tamarama Holdings Pty Ltd (North West Eggs), from 1994 to 2007.
- A review of aerial photographs indicates the former poultry farm Site was initially developed between 1982 and 1989, with the construction of two sheds. By 2007, the remainder of the former poultry farm had been developed, with the construction of the remaining infrastructure.
- » A review of a previous report completed by Stass Environmental in 2005 indicated there was no evidence of significant surface soil contamination at the former North West Eggs facility.
- The Site walkover did not identify any areas of significant contamination at the location of the former poultry farm. The majority of infrastructure was still present however it is understood that the poultry farm has not been in operation for at least 2 years.
- » Soil sampling undertaken by Coffey indicates that there were three locations that exceeded the assessment levels at the former poultry farm. Concentrations of zinc that exceeded the EIL were collected from locations of the former scrap metal areas near the northern and southern boundaries of the former poultry farm. Concentrations of TPH C₁₅-C₂₈ and TPH C₂₉-C₃₆ that exceeded the HIL-A and HIL-E were collected from the location of a former manure pile in the centre of the former poultry farm.

9.2 Former Abattoir (Lot 1024)

- A review of the Certificates of Title indicates Lot 1024 Locke Street was purchased in 1989 and is currently owned by Margaret Pamela Livingstone and Ralph William Livingstone. Between 1983 to 1989 120 Locke Street was owned by Susan Helen Giesen, Jaqueline Anne Knox and Gwendolyn Frances Knox. Between 1976 and 1983 Lot 1024 Locke Street was owned by John Marquis Charles Knox. This indicates that 120 Locke Street may have had a predominantly residential use throughout the history of development of the lot.
- » A review of aerial photography indicates that development of the former abattoir site began in 1967, with the clearing of vegetation and remained developed from 1967 to present. The development of infrastructure at the Site occurred during the late 1960s.
- » Access to the former abattoir could not be obtained during the Site visit however anecdotal evidence indicates that the area operated as a small scale abattoir supplying meat products to the local butcher.

9.3 Water Corporation Tank (Lot 2646)

A review of the Certificates of Title indicates Lot 2646 Fairway Drive is reserved as Crown Land Under Management Order, with the primary interest holder being the Water Authority of Western Australia. It is understood that this tank is used for drinking water storage only.


- » A review of aerial photography indicates the water tank was developed between 1989 and 2007. The Site appears to be being developed in the 1989 aerial photograph, with the track leading to the location of the water tank evident.
- The Site walkover did not identify any areas of significant contamination at the Water Corporation Water Tank location. The area was mostly cleared of vegetation and fenced, to prevent public access. There was minor dumping of rubbish around the enclosure, however this was generally limited in extent and comprised mainly beer cans and plastic drink bottles.
- » Given the current land use and the small scale operations as a water tank, it is not considered that this land use is likely to have caused any significant soil or groundwater contamination at the Site.

9.4 Camel Leases (Lot 300)

- » A review of Certificates of Title indicates that Lot 300 Fairway Drive is reserved as Crown Land. The primary interest holder of Lot 300 Fairway Drive is Steve Madden, who is the owner of Cable Beach Camel Safaris.
- A review of aerial photographs indicates that this lot was cleared of vegetation during the 1980s.
 Between 1989 and 2007 vegetation regrowth over part of these lots has occurred.
- The Site walkover identified that Lot 300 was no longer being used as a camel lease area, and that this area was now used as a dirt bike track. A small area of burnt vegetation was also identified at this lot.
- There were some small burn areas and wastes identified at the location of the former camel lease, however given the small scale operations, it is not considered that this land use is likely to have caused any significant soil or groundwater contamination at the Site.

9.5 Remainder of Site

- » A review of the Certificates of Title indicates the remaining lots are reserved as Crown Land.
- A review of aerial photographs indicates that the majority of the Site is covered by vegetation. There are some areas in the southern half of the Site, which were cleared of vegetation during the 1980s, however by 2007, regrowth of vegetation has occurred.
- The Site walkover identified that the majority of the Site was covered by dense native vegetation, in good, healthy condition. Many areas of illegal dumping along unsealed tracks were identified across the Site. Dumped wastes included white goods, cans, bottle, drums and other household wastes. Dumping of wastes was generally limited to unsealed tracks across the Site.
- Except for the minor and localised dumping of waste materials no significant contamination issues were observed at Lots 1776, 1224, 687, 3091, 304, 2658, 2659, 3132, 2646, 3149, 3106, 301, 3150, 3129 and 3130. However, this conclusion is subject to the timeframes for the development and whether dumping of waste continues to occur and potentially cause contamination in the future.

9.6 Adjacent Broome Waste Management Facility

A review of aerial photographs indicates that the adjacent Broome Waste Management Facility has been in operation since the mid 1980s, with expansion to the west during the late 1990s.



Potential contamination and risk issues likely to arise from the Broome Waste management facility that may impact the Site include landfill gas (methane) and groundwater contamination. Given the distance from the landfill to the Site (400 m), these issues are considered to be minor, however should still be considered as part of potential risks for site development.

9.7 Overall Conclusions

Based on a review of the report, the following overall conclusions are presented for the Site:

- » Given the overall land use of the Site and the presence of illegally dumped rubbish, there is the potential for minor impacts to surface soils which will need to be remediated and validated prior to redevelopment.
- » GHD has not conducted groundwater investigations at the Site and unless groundwater investigations are undertaken the groundwater quality at the Site cannot be confirmed.



10. Recommendations

Based on the information presented in this report, the following recommendations are made for the entire Site:

- » GHD recommends conducting a groundwater investigation across the Site to confirm groundwater quality moving onsite and offsite and to determine groundwater flow direction beneath the Site.
- » Given that the Site may be redeveloped for a more sensitive land use (ie. residential), a DEC Contaminated Sites accredited auditor may need to be appointed in accordance with Section 31(1) of the Contaminated Sites Regulations 2006.
- Remove surface dumped waste materials from the Site prior to redevelopment and subdivision. Removed waste should be disposed of to a suitable landfill facility, in accordance with DEC (2001) Landfill Waste Classification and Waste Definitions 1996 (as amended). Erect signage around the Site to deter any further illegal dumping of wastes.
- BHD did not observe any activities likely to cause significant soil or groundwater contamination across the remainder of the Site during the Site visit or as part of this investigation, however due to the large area of the Site it was not possible to inspect the entire Site. Consequently, there is potential for small areas of contamination to exist at the Site and contingency and/or management plans for this should be incorporated in any redevelopment plans for the Site.
- » LandCorp should review its development plan in conjunction with this PSI to further assess the need for soil and groundwater sampling, whereby development of residential lots in areas of contamination may require further soil and groundwater investigations.

GHD understands that the project is going to extend over 30 to 50 years, with development beginning in the southern portion of the Site, adjacent to the western boundary of the Blue Haze Light Industrial Area. Given the time scale for the redevelopment, it will be approximately 12 to 15 years before development begins in areas where there are potential contamination issues.

GHD therefore makes the following recommendations for specific areas of the Site, however these may not need to be addressed until later in the development program.

10.1 Former Poultry Farm (Lot 2605)

The concentrations of zinc detected at the former poultry farm, marginally exceed (up to 1.35 times) the assessment criteria. However, as vegetation is not present at the location of these exceedences, these concentrations are not considered to present a risk to the surrounding environment. The concentrations of TPH identified at the former poultry farm exceed the health investigation levels. GHD considers that this exceedence should be delineated to determine the vertical and horizontal extent of the TPH contamination at the former poultry farm.

Should the former poultry farm be redeveloped for more sensitive land use purposes, including residential purposes with access to soil including gardens, GHD recommends that soil and groundwater investigations be undertaken, in accordance with DEC Contaminated Sites Management Series Guidelines, to confirm that there is no contamination present at the location that has the potential to cause risks to human health or the environment.



10.2 Former Abattoir (Lot 1024)

As the Site was not accessible during the time of this investigation, a Site walkover should be undertaken at this property when it is accessible to assess potential contamination issues and development restrictions for LandCorp.

10.3 Broome Waste Management Facility

Due to the proximity of the Broome Waste Management Facility to the northern boundary of the Site (400 m), consideration should be given to potential migration of landfill gases through substrata to the Site and the potential explosive and human health risks these may present. Landfill gas investigation and monitoring should be undertaken between the landfill and Site boundaries to determine risks from the Broome Waste Management Facility.

GHD recommends installation of groundwater monitoring wells between the landfill and Site to confirm that the landfill is not impacting groundwater quality beneath Site.

GHD also recommends installation of landfill gas monitoring points between the landfill and the Site to ensure landfill gases are not being released at the Site.



11. Limitations of Report

This report has been prepared by GHD for LandCorp. No warranties, expressed or implied, are offered to any third party and no liability will be accepted for the use of this report by any third party.

This report presents the results of Preliminary Site Investigation prepared for the purpose of this commission. The data and advice provided herein relate only to the project and structures described herein at the time of visual inspection and must be reviewed by a competent Engineer/Scientist before being used for any other purpose. GHD accepts no responsibility for other use of the data.

The work conducted by GHD under this commission has been to the standard that would normally be expected of professional environmental consulting firm practising in this field in the State of Western Australia. However, although strenuous effort has been made to assess contamination issues required by this brief we cannot guarantee that other issues outside of the scope of work undertaken by GHD do not remain.

Where information or data has been supplied by other parties, the data is included and used in the form provided by the parties. The responsibility for the accuracy of such data remains with the issuing authority, not with GHD.

An understanding of the site conditions depends on the integration of many pieces of information, some regional, some site specific, and some experienced based. Hence, this report should not be altered, amended or abbreviated, issued in part or issued incomplete in any way without prior checking and approval by GHD. GHD accepts no responsibility for any circumstances that arise from the issue of this report that has been modified other than by GHD.

The limitations of this report should be read in conjunction with the entire report.



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32 Cadastre (Lot Number)

Lot Boundaries



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Site Boundary Cadastre



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Appendix A DEC Site Summary Form and Certificates of Title



Department of Environment and Conservation Site Summary Form – Contaminated Site Assessment

For completion by the person(s) submitting a report(s) to be assessed by the Department of Environment and Conservation (DEC) as per the information requirements of the DEC *Reporting on Site Assessments (2001)* guideline. Completing this form enables DEC to maintain accurate records for the site.

<u>Please note:</u> A completed site summary form must accompany each report submitted to DEC for assessment. Each box must be filled out appropriately. Please do not write "refer to report" in any section. Copies of all relevant/current Certificates of Title must accompany this form.

Site location details:

Site nam	e (e.g. where site may be l	(nown by a common/ business name)	Broome North	Redevelopmen	t	
Lot no.	304, 2605, 2646, 2659 1024, 1776, 3150, 314), 2658, 3106, 301, 300, 3091, 1224, 9, 687, 3132, 3129 and 3130	Street	Fairway Driv and Broome	e, Buckleys Ro Road	ad, Locke Street
Suburb	Broome		State	WA	Postcode	6725
Crown Re	eserve (if applicable)					
Certificat	e(s) of Title (or equivalen	t) LR3134/500, 2034/689, LR30 LR3050/459, LR3050/458, LF LR3131/487, LR3124/587 an	004/483, LR300 R3100/973, 266 d LR3128/64	0/440, LR3000/ i8/478, 1653/32	439, LR3114/9 1, 1751/470, LF	57, LR3114/956, 3131/488,
Where the Where su relevant (groundwa	e subject site comprise bstances have migrat Certificates of Title do ater), as an attachment	es of multiple certificates of title, p ed beyond the cadastral boundar cumentation and owners details f to this form.	lease list all co ries of the sub or all offsite p	ertificates. oject site, plea: properties impa	se provide the acted (includes	e addresses, s soil and/or
ls a hard o	opy of Certificate of Ti	tle and associated sketch for all li	sted sites atta	ched? (Y/N)	Y	
WAPC ref	erence no. (where applic	able)]	
Current O	wner/Occupier details:					
Site owne	r (Name and address)	Unallocated Crown Land - Lots 26 3132, 3129 and 3130. The Anglican Schools Commission Dean Graham Kemp and Sandra C Margaret Pamela Living Stone and Robert John Knox and Wendy Joan	46, 304, 2659, 3 n Inc Lot 2605 Gaye Wotherspo Ralph William n Knox - Lot 17	2658, 3107, 301 ; pon - Lot 1224 Livingstone - Lc 76	1, 300, 3091, 31 ot 1024	50, 3149, 687,
Site owner	company ACN/ABN					
Site occup	ier (name and address)					
Site occup	ier company ACN/ABN	1				

<u>Site status</u>	<u>(at time of</u>	reporting):

Γ

Proposed land use (e.g. high density residential/child care facility) Mixed Land Use
Identified substances and relevant media (e.g. benzene in soil and groundwater, xylene in soil only)
Asbestos (Y/N) N Health Risk N Community health concerns identified N Radiological N issues
Air quality N Past/present N Potential human exposure to identified N Other human N issues (Y/N) Iandfill (Y/N) substances > DEC's Health Investigation health issues health issues Levels or equivalent (Y/N) (Y/N) (Y/N) (Y/N)
Specify other health issues
Where 'yes' is recorded for at least one of the above categories, please submit two copies of the report(s) (relevant documentation) to DEC for referral to the Department of Health (or Radiological Council, in the case of radiological issues)
Are site activities licensed under the Environmental Protection Act 1986? (Y/N) Licence No.
Where laboratory analysis has been undertaken, is the laboratory NATA accredited for all analytes and Analytical methodologies used? (Y/N) (If not, why not?)
Community Consultation: (as per the DEC's Community Consultation (December 2006) guideline)
Community consultation program commenced/proposed (Y/N) Y – LandCorp is currently undertaking community consultation
Are consultation program details (e.g. community consultation plan) provided in attached report (Y/N)
History of Investigation:
Have previous site investigations been undertaken? (Y/N - if yes, please provide details below)
Report title, date and author: Stass Environmnetal (2005) Soil Contamination Assessment: North West Eggs, Broome, WA.
Declaration: The information contained in this site summary form is a true representation of the information contained in the attached report(s)/document(s).
Full name (print) Ashton Betti
Position held Environmental Scientist
Signature Betti Date 10 August 2009
Please ensure that a hardcopy of the current Certificate(s) of Title and associated sketch accompanies the site summary form. DEC cannot proceed with the assessment of the report if this information is not provided.

DEC Registrar Only	
Registrar name:	Signature:
CoT verified (Y/N) Owner details verified (Y/N)	Complete form (Y/N)
Awaiting Classification (Y/N) Awaiting Re-Classification (Y/N) Incomplete Form (Y/N)	
LWQB Assessment Officer:	
Comments/Actions:	
Date of data entry:	



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) 144 vol.	land as is below the natural surface to a depth of 12.19 metres of ALL	(hereinafter called the Gra	ntee), the natural surface and so much of the ituate and being in the ${ m Town}$ of	CAUTION
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Page 1 (of	appertaining: 10 HAVE AND 10 HOLD the said Piece or Parcel of Land to the depti appurtenances, unto the Grantee, in fee simple: Yielding and Paying for the same to Us, O of March in each year, or so soon thereafter as the same shall be lawfully demanded; PROVI it shall (at any time within twenty-one years from the date of these Presents) be lawful for by Our or their authority, to resume and enter upon possession of any part of the said Pie- sors, be deemed necessary to resume for roads, tramways, railways, and railway stations, co or irrigation works, quarries, and generally for any other works or purposes of public use, for minerals hereinafter reserved, and such Land so resumed to hold to Us, Our heirs and or any person claiming under him, any compensation in respect thereof; so, nevertheless, that Piece or Parcel of Land upon which any expenditure or improvements shall have been made save and reserve to Us, Our heirs and Successors, all Mines of Gold, Silver, Copper, Tin, and all Gems or Precious Stones and Coal or Mineral Oil, and all Phosphatic Substances in at all times to search and dig for and carry away the same; and for that purpose to enter save and reserve to Us, Our heirs and successors all petroleum (as defined in the Petroleum A below the surface of the said Land with the right reserved to Us, Our heirs and successors a said land for the purpose of searching for and for the operations of obtaining petroleum in a scentained in the Petroleum Act, 1967, and all the amendments thereof for the time being for contained in the Petroleum Act, 1967, and all the amendments thereof for the time being for contained in the Petroleum Act, 1967, and all the amendments thereof for the time being for contained in the Petroleum Act, 1967, and all the amendments thereof for the time being for the substance of the said Land with the right reserved to Us, Our heirs and successors actions of obtaining petroleum in a contained in the Petroleum Act, 1967, and all the amendments thereof for the time being for the substa	h aforesaid, and all and singul; bur heirs and successors, one pepp DED NEVERTHELESS that sub Us, Our heirs and successors, or f iece or Parcel of Land, which it n canals, bridges, towing paths, har utility or convenience, and for th successors as of Our or their fo t no such resumption be made w by the said Grantee, or any per or other Metals, Ore and Mine or under the said Piece or Parcel er upon the said Piece or Parcel Act, 1967 and all amendments t and persons authorised by Us, Ou any part of the said land subjec in force.	ar the Premises hereby granted, with their percorn of yearly rent on the twenty-fifth day opict to section 141 of the Land Act, 1933, for any person or persons acting in that behalf hay at any time by Us, Our heirs and succes- bour or river improvement works, drainage e purpose of exercising the power to search rmer estate without making to the Grantee, ithout compensation of any part of the said son claiming under him; and We do hereby rals, or other substances containing Metals, cel of land hereby granted, with full liberty f land or any part thereof; and we do hereby hereof for the time being in force) on or ir heirs and successors to have access to the t to and in accordance with the provisions	vinst Altering or Addi
đ	IN WITNESS whereof We have caused Our trusty and well-belo			_
JUC	WALLACE KYLE, Knight Grand Cross of the Most Honourable Order of the British Empire, Companion of the Distinguished Ser of the Most Venerable Order of the Hospital of St. John of Jerusal and its Dependencies in the Commonwealth of Australia, to aff	oved HIS EXCELLENC e Order of the Bath, Co vice Order, Distinguishe lem, Governor in and ov ïx to these Presents th	Y AIR CHIEF MARSHAL SIR mmander of the Most Excellent ed Flying Cross, Knight of Grace er the State of Western Australia e Public Seal of the said State.	NG TO THIS CERT
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FIRST SCHEDULE	Area and measurements on the Pla hereon are more or less, and a peg ha been placed at each corner of the Lot. All measurements in Metric Units	ale: 1: 7500 urvey: Diag 80234 urveyed: by K. Alexander orr: 4255/74 frawn: A.L.W. trawn: A.L.W. tra	

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RECORD OF C	CERTIFIC	CATE OF TI	TLE	volume 1653	FOLIO 321

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

Barberts **REGISTRAR OF TITLES**

LAND DESCRIPTION:

LOT 1024 ON DEPOSITED PLAN 180234

REGISTERED PROPRIETOR: (FIRST SCHEDULE)

MARGARET PAMELA LIVINGSTONE RALPH WILLIAM LIVINGSTONE BOTH OF POST OFFICE BOX 212, BROOME AS JOINT TENANTS

(T E151470) REGISTERED 18 JULY 1989

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

- 1. E151471 MORTGAGE TO COMMONWEALTH SAVINGS BANK OF AUSTRALIA REGISTERED 18.7.1989.
- 2. E894162 MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA REGISTERED 29.5.1992.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
 * Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
 Lot as described in the land description may be a lot or location.

END OF CERTIFICATE OF TITLE

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:
PREVIOUS TITLE

1653-321 (1024/DP180234). 1449-610.

PROPERTY STREET ADDRESS:120 LOCKE ST, BILINGURR.LOCAL GOVERNMENT AREA:SHIRE OF BROOME.

NOTE 1:A000001ALAND PARCEL IDENTIFIER OF BROOME TOWN LOT/LOT 1024 (OR THE PART
THEREOF) ON SUPERSEDED PAPER CERTIFICATE OF TITLE CHANGED TO LOT 1024
ON DEPOSITED PLAN 180234 ON 25-JUL-02 TO ENABLE ISSUE OF A DIGITAL
CERTIFICATE OF TITLE.NOTE 2:THE ABOVE NOTE MAY NOT BE SHOWN ON THE SUPERSEDED PAPER CERTIFICATE
OF TITLE OR ON THE CURRENT EDITION OF DUPLICATE CERTIFICATE OF TITLE.



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UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

Barberts **REGISTRAR OF TITLES**

LAND DESCRIPTION:

LOT 1776 ON DEPOSITED PLAN 185242

REGISTERED PROPRIETOR: (FIRST SCHEDULE)

ROBERT JOHN KNOX WENDY JOAN KNOX BOTH OF POST OFFICE BOX 22, BROOME AS JOINT TENANTS

(XE A000001A) REGISTERED 1 JANUARY 0001

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. * Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title. Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF TITLE------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: PREVIOUS TITLE: PROPERTY STREET ADDRESS: LOCAL GOVERNMENT AREA: 1751-470 (1776/DP185242).This Title.585 BROOME RD, BILINGURR.SHIRE OF BROOME.

NOTE 1:	A000001A	LAND PARCEL IDENTIFIER OF BROOME TOWN LOT/LOT 1776 (OR THE PART
		THEREOF) ON SUPERSEDED PAPER CERTIFICATE OF TITLE CHANGED TO LOT 1776
		ON DEPOSITED PLAN 185242 ON 06-AUG-02 TO ENABLE ISSUE OF A DIGITAL
		CERTIFICATE OF TITLE.
NOTE 2:		THE ABOVE NOTE MAY NOT BE SHOWN ON THE SUPERSEDED PAPER CERTIFICATE
		OF TITLE OR ON THE CURRENT EDITION OF DUPLICATE CERTIFICATE OF TITLE.

ORIGINAL - NOT TO BE REMOVED FROM OFFICE OF СТ 1751 0470 F LANDS L.T.O. Land R ß С WESTERN AUSTRALIA 10 Permit VOL. FOL. Lease ĸ 470 Name . 1751Arown rant Alizabeth the Second, by the Grace of God, Queen of Australia and Her other Realms and Territories, Head of the Commonwealth. To all to whom these Presents shall come, GREETING: Know ye that We, of Our especial Grace, certain knowledge, and mere motion, have given and granted, and We do by these Presents, for Us, Our heirs and successors, in consideration of the payment of the sum of \$18,000.00----- and the fulfilment of the prescribed conditions PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON to the satisfaction of Our Governor of Our State of Western Australia, Give and Grant unto Robert John Knox Assistant Hotel Manager and Wendy Joan Knox Married Woman both of Post Office Box 22 Broome as Joint Tenants (hereinafter called the Grantee), the natural surface and so much of the land as is below the natural surface to a depth of 12.19 metres of ALL THAT Piece or Parcel of Land situate and being in the Town of or less, and marked and distinguished in the Maps and Books retained under the Land Act 1933 as Broome Lot 1776----and as the same is delineated and coloured green in the plan drawn in the first schedule: TOGETHER with all Appurtenances thereunto belonging or in anywise appertaining: TO HAVE AND TO HOLD the said Piece or Parcel of Land to the depth aforesaid, and all and singular the Premises hereby granted, with their appurtenances, unto the Grantee, in fee simple: Yielding and Paying for the same to Us, Our heirs and successors, one peppercorn of yearly rent on the twenty-fifth day of March in each year, or so soon thereafter as the same shall be lawfully demanded: PROVIDED NEVERTHELESS that subject to section 141 of the Land Act, 1933, it shall (at any time within twenty-one years from the date of these Presents) be lawful for Us, Our heirs and successors, or for any person or persons acting in that behalf by Our or their authority, to resume and enter upon possession of any part of the said Piece or Parcel of Land, which it may at any time by Us, Our heirs and successors or irrigation works, quarries, and generally for any other works or purposes of public use, utility or convenience, and for the purpose of exercising the power to search for minerals hereinafter reserved, and such Land so resumed to hold to Us, Our heirs and successors as of Our or their former estate without making to the Grantee, or any person claiming under him, any compensation in respect thereof; so, nevertheless, that no such resumption be made without claiming under him; and We do hereby save and reserve to Us, Our heirs and Successors, all Mines of Gold, Silver, Copper, Tin, or other Metals, Ore and Minerals, or other substances containing Metals, and all Gens or Precious Stones and Coal or Mineral Oil, and all Phosphatic Substances in or under the said Piece or Parcel of land or any part of the time being in force) on or below the surface of the said Land with the right reserved to Us, Our heirs and successors and persons authorised by Us, Our heirs and successors to have access to the said land for the purpose of searching for and carry away t IN WITNESS whereof We have caused Our trusty and well-beloved HIS EXCELLENCY PROFESSOR GORDON REID, Governor in and over the State of Western Australia and its Dependencies in the Commonwealth of Australia, to affix to these Presents the Public Seal of the said State. December, One thousand nine hundred and eigh Sealed this 22nd day of Jordon Reid Grant under the Land Act, 1933 as amended Minister for Lands and Surveys **CERTIFICATE OF TITLE** UNDER THE "TRANSFER OF LAND ACT, 1893" AS AMENDED The abovenamed Grantee is now the registered proprietor of an estate in fee simple in all the land described in this Grant subject to the easements and encumbrances shown in the Second Schedule hereto. DATED THE 21 st DAY OF January 19 87 **REGISTRAR OF TITLES** FOR ENCUMBRANCES AND OTHER MATTERS AFFECTING THE LAND SEE SECOND SCHEDULE

31638/2/84-2M-S/2852



	ORIGINAL - NOT TO BE REMOVED FROM OFFICE OF TITLES
	Application F714383 LANDS L.T.O, Land $\frac{3002}{808}$ (Mestern) AUSTRALIA Permit. Lease $\frac{60}{1989}$ (Turchurg) (Emmat
	This wheth the Security by the Grace of God Queen of Australia and Her other Realms and Territories, Head of the Commonwealth. To all to whom these Presents shall
667 OL .	come, GREETING: Know ye that We, of Our especial Grace, certain knowledge, and mere motion, have given and granted, and We do by these Presents, for Us, Our heirs and successors, in consideration of the payment of the sum of \$128000.00 and the fulfilment of the prescribed conditions to the satisfaction of Our Governor of Our State of Western Australia, Give and Grant unto Tamarama Holdings Pty. Ltd. of Suite 6, 26 Prospect Road, Armadale
2016 /ot. F	(hereinafter called the Grantee), the natural surface and so much of the
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	Grant under the Land Act, 1933
	George back Minister for Lands
	CERTIFICATE OF TITLE UNDER THE "TRANSFER OF LAND ACT, 1893" AS AMENDED
	The abovenamed Grantee is now the registered proprietor of an estate in fee simple in all the land described in this Grant subject to the easements and encumbrances shown in the Second Schedule hereto.
	TOTALLY CANCELLED WHILL THE WAL/S DIMENT F972276. TO VOL 2034 Fol.689.

FOR ENCUMBRANCES AND OTHER MATTERS AFFECTING THE LAND SEE SECOND SCHEDULE

INITIALS SEAL REGISTERED OR LODGED NOTE: RULING THROUGH AND SEALING WITH THE OFFICE SEAL INDICATES THAT AN ENTRY NO LONGER HAS EFFECT. ENTRIES NOT RULED THROUGH MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS. INITIALS CANCELLATION NUMBER alle SEAL ROAD 500 2034 689 667 Cancelled 4.0000 ha. TIME 10.11.93 8.03 2605 833 200 200 REGISTERED BICKLEYS CERTIFICATE OF TITLE VOL. 2016500 to <u>R&I</u> Bank of Western Australia Ltd. Amended by Commissioners Instruction Section 188 (ii) Sundry F972276. Lodged 4.9.95 at 14.55 hrs PARTICULARS hereon are more or less, and a peg has been placed at each corner of the allotment. Area and measurements on the Plan FIRST SCHEDULE F361140 SECOND SCHEDULE Corr: 1982/1987 NUMBER Page 2 (of 2 pages) Survey : DIA. 89036 Scale : 1 : 5000 INSTRUMENT Mortgage NATURE

	Some a refer		REGISTER NUMBER 2605/DP189036		
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UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

Barberts **REGISTRAR OF TITLES**

LAND DESCRIPTION:

LOT 2605 ON DEPOSITED PLAN 189036

REGISTERED PROPRIETOR: (FIRST SCHEDULE)

THE ANGLICAN SCHOOLS COMMISSION INC OF WOLLASTON EDUCATION CENTRE, WOLLASTON ROAD, MOUNT CLAREMONT

(T K312192) REGISTERED 18 SEPTEMBER 2007

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. * Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title. Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: PREVIOUS TITLE: PROPERTY STREET ADDRESS: LOCAL GOVERNMENT AREA: 2034-689 (2605/DP189036). 2016-667. 32 FAIRWAY DR, DJUGUN. SHIRE OF BROOME.

NOTE 1: A000001A LAND PARCEL IDENTIFIER OF BROOME TOWN LOT/LOT 2605 (OR THE PART THEREOF) ON SUPERSEDED PAPER CERTIFICATE OF TITLE CHANGED TO LOT 2605

	ON DEPOSITED PLAN 189036 ON 21-SEP-02 TO ENABLE ISSUE OF A DIGITAL
	CERTIFICATE OF TITLE.
NOTE 2:	THE ABOVE NOTE MAY NOT BE SHOWN ON THE SUPERSEDED PAPER CERTIFICATE
	OF TITLE OR ON THE CURRENT EDITION OF DUPLICATE CERTIFICATE OF TITLE.



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The correct	address	of the registered pro	prietor is now 26 Prospect Road, A	vrmadale.		By	G24996	57 9.8.96	5 8.38	Ollice of Trilles	
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WESTERN		AUSTRALIA	duplicate edition N/A	DATE DUPLICA	ATE ISSUED A
RECORD OF CEI	RTIFIC	ATE OF TI	TLE	volume 2668	folio 478

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

Barberts **REGISTRAR OF TITLES**

LAND DESCRIPTION:

LOT 1224 ON DEPOSITED PLAN 182427

REGISTERED PROPRIETOR: (FIRST SCHEDULE)

DEAN GRAHAM KEMP SANDRA GAYE WOTHERSPOON BOTH OF POST OFFICE BOX 5120, CABLE BEACH AS TENANTS IN COMMON IN EQUAL SHARES

(TF K345575) REGISTERED 17 SEPTEMBER 2007

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

1. *K345576 MORTGAGE TO BANK OF WESTERN AUSTRALIA LTD REGISTERED 17.9.2007.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. * Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title. Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF TITLE------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: PREVIOUS TITLE: PROPERTY STREET ADDRESS: LOCAL GOVERNMENT AREA:

LR3002-440 (1224/DP182427). LR3002-440. 599 BROOME RD, BILINGURR. SHIRE OF BROOME.

NOTE 1:

DUPLICATE CERTIFICATE OF TITLE NOT ISSUED AS REQUESTED BY DEALING K345576

2658 2658			GISTER NUMBER		
WESTERN	AUSTRALIA	duplicate edition N/A	DATE DUPLICA	ATE ISSUED	
RECORD OF QUALIFIED CERTIFICATE VOLUME FOLIO OF					
CROWN LAND TITLE					
UNDER THE TRANSFER OF AND THE LAND ADMINISTR	F LAND ACT 1893 ATION ACT 1997				

NO DUPLICATE CREATED

The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.





REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 2658 ON DEPOSITED PLAN 189827

STATUS ORDER AND PRIMARY INTEREST HOLDER: (FIRST SCHEDULE)

STATUS ORDER/INTEREST: UNALLOCATED CROWN LAND

PRIMARY INTEREST HOLDER: STATE OF WESTERN AUSTRALIA

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

1.	I062392	AUTHORISATION ORDER FOR THE TAKING OF INTERESTS. REGISTERED 3.4.2002.
2.	I062393	NOTICE OF INTENTION TO TAKE FOR THE DESIGNATED PURPOSE OF RURAL-
		RESIDENTIAL. REGISTERED 3.4.2002.

I386085 PERIOD OF CURRENCY IS NOW INCREASED TO 3 YEARS FROM 3.4.2002. REGISTERED 17.2.2003.

J181708 PERIOD OF CURRENCY IS NOW INCREASED TO 5 YEARS FROM 3.4.2002. REGISTERED 14.2.2005.

- Warning: (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.
 - (2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.
 - (3) The interests etc. shown hereon may have a different priority than shown.

STATEMENTS:

-----END OF CERTIFICATE OF CROWN LAND TITLE------

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:IPREVIOUS TITLE:TPROPERTY STREET ADDRESS:TLOCAL GOVERNMENT AREA:S

LR3000-439 (2658/DP189827). This Title. 22 FAIRWAY DR, DJUGUN. SHIRE OF BROOME.

END OF PAGE 1 - CONTINUED OVER

ORIGINAL CERTIFICATE OF CROWN LAND TITLE QUALIFIED 89827 VOLUME/FOLIO: LR3000-439

REGISTER NUMBER: 2658/DP189827 VOLUME/FOLIO: L

PAGE 2

NOTE 1:A000001ACORRESPONDENCE FILE 3047/1988.NOTE 2:LAND PARCEL IDENTIFIER OF BROOME TOWN LOT/LOT 2658 ON SUPERSEDED
PAPER CERTIFICATE OF CROWN LAND TITLE CHANGED TO LOT 2658 ON
DEPOSITED PLAN 189827 ON 05-AUG-02 TO ENABLE ISSUE OF A DIGITAL
CERTIFICATE OF TITLE.NOTE 3:THE ABOVE NOTE MAY NOT BE SHOWN ON THE SUPERSEDED PAPER CERTIFICATE
OF TITLE.


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UNDER THE TRANSFER O AND THE LAND ADMINISTI	F LAND ACT 1893 RATION ACT 1997			

The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.





REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 2659 ON DEPOSITED PLAN 189827

STATUS ORDER AND PRIMARY INTEREST HOLDER: (FIRST SCHEDULE)

STATUS ORDER/INTEREST: UNALLOCATED CROWN LAND

PRIMARY INTEREST HOLDER: STATE OF WESTERN AUSTRALIA

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

1.	I062392	AUTHORISATION ORDER FOR THE TAKING OF INTERESTS. REGISTERED 3.4.2002.
2.	I062393	NOTICE OF INTENTION TO TAKE FOR THE DESIGNATED PURPOSE OF RURAL-
		RESIDENTIAL. REGISTERED 3.4.2002.

I386085 PERIOD OF CURRENCY IS NOW INCREASED TO 3 YEARS FROM 3.4.2002. REGISTERED 17.2.2003.

J181708 PERIOD OF CURRENCY IS NOW INCREASED TO 5 YEARS FROM 3.4.2002. REGISTERED 14.2.2005.

- Warning: (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.
 - (2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.
 - (3) The interests etc. shown hereon may have a different priority than shown.

STATEMENTS:

-----END OF CERTIFICATE OF CROWN LAND TITLE------

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:LIPREVIOUS TITLE:ThPROPERTY STREET ADDRESS:4 TLOCAL GOVERNMENT AREA:SH

LR3000-440 (2659/DP189827). This Title. 4 FAIRWAY DR, DJUGUN. SHIRE OF BROOME.

END OF PAGE 1 - CONTINUED OVER

ORIGINAL CERTIFICATE OF CROWN LAND TITLE QUALIFIED 89827 VOLUME/FOLIO: LR3000-440

REGISTER NUMBER: 2659/DP189827 VOLUME/FOLIO: L

PAGE 2

NOTE 1:A000001ACORRESPONDENCE FILE 3047/1988.NOTE 2:LAND PARCEL IDENTIFIER OF BROOME TOWN LOT/LOT 2659 ON SUPERSEDED
PAPER CERTIFICATE OF CROWN LAND TITLE CHANGED TO LOT 2659 ON
DEPOSITED PLAN 189827 ON 05-AUG-02 TO ENABLE ISSUE OF A DIGITAL
CERTIFICATE OF TITLE.NOTE 3:THE ABOVE NOTE MAY NOT BE SHOWN ON THE SUPERSEDED PAPER CERTIFICATE
OF TITLE.



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UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

Recoberts **REGISTRAR OF TITLES**

LAND DESCRIPTION:

LOT 1224 ON DEPOSITED PLAN 182427

REGISTERED PROPRIETOR: (FIRST SCHEDULE)

DLAN GRAHAM KEMP SANDRA GAYE WOTHERSPOON BOTH OF POST OFFICE BOX 5120, CABLE BEACH AS TENANTS IN COMMON IN EQUAL SHARES

(TF K345575) REGISTERED 17 SEPTEMBER 2007

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

*K345576 MORTGAGE TO BANK OF WESTERN AUSTRALIA LTD REGISTERED 17.9.2007.

g: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF TITLE------END OF CERTIFICATE OF TITLE------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: PREVIOUS TITLE: PROPERTY STREET ADDRESS: LOCAL GOVERNMENT AREA: LR3002-440 (1224/DP182427). LR3002-440. 599 BROOME RD, BILINGURR. SHIRE OF BROOME.

NOTE 1:

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DUPLICATE CERTIFICATE OF TITLE NOT ISSUED AS REQUESTED BY DEALING K345576



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The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.





REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 2646 ON DEPOSITED PLAN 217578

STATUS ORDER AND PRIMARY INTEREST HOLDER: (FIRST SCHEDULE)

STATUS ORDER/INTEREST: RESERVE UNDER MANAGEMENT ORDER

PRIMARY INTEREST HOLDER: WATER AUTHORITY OF WESTERN AUSTRALIA (XE E542621) REGISTERED 7 FEBRUARY 1991

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

1.E542621RESERVE 41562 FOR THE PURPOSE OF WATER SUPPLY REGISTERED 7.2.1991.1.E542621MANAGEMENT ORDER. CONTAINS CONDITIONS TO BE OBSERVED.
REGISTERED 7.2.1991.

Warning: (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

(2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.

(3) The interests etc. shown hereon may have a different priority than shown.

-----END OF CERTIFICATE OF CROWN LAND TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land

and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:LR3004-483 (2646/DP217578).PREVIOUS TITLE:This Title.PROPERTY STREET ADDRESS:250 FAIRWAY DR, CABLE BEACH.LOCAL GOVERNMENT AREA:SHIRE OF BROOME.

NOTE 1:A000001ACORRESPONDENCE FILE 1853/1989.NOTE 2:LAND PARCEL IDENTIFIER OF BROOME TOWN LOT/LOT 2646 ON SUPERSEDED

END OF PAGE 1 - CONTINUED OVER

ORIGINAL CERTIFICATE OF CROWN LAND TITLE QUALIFIED

REGISTER NUMBER: 2646/DP217578 VOLUME/FOLIO: LR3004-483

PAGE 2

PAPER CERTIFICATE OF CROWN LAND TITLE CHANGED TO LOT 2646 ON DEPOSITED PLAN 217578 ON 20-AUG-02 TO ENABLE ISSUE OF A DIGITAL CERTIFICATE OF TITLE.

NOTE 3:

THE ABOVE NOTE MAY NOT BE SHOWN ON THE SUPERSEDED PAPER CERTIFICATE OF TITLE.



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DECLARS FICULARS FOR the purpose of "Water Supply".	stern Australia. In G.G. 25/1/1991. S		·				VOL. 3004 FOL.
Page 2 (of 2 pages) Set apart as Reserve No. 41562 f	In G.G. 25/1/1991. Vested in <u>Water Authority of Wes</u>	1 1 4 materia		<u> </u>	 .	-	

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OF				
CROWN LAND	TITLE			
UNDER THE TRANSFER OF LA AND THE LAND ADMINISTRAT	ND ACT 1893 ION ACT 1997			

The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.





REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 300 ON DEPOSITED PLAN 45072

STATUS ORDER AND PRIMARY INTEREST HOLDER: (FIRST SCHEDULE)

STATUS ORDER/INTEREST: LEASEHOLD

PRIMARY INTEREST HOLDER: STEVE MADDEN OF POST OFFICE BOX 342, BROOME (LC J340895) REGISTERED 29 JUNE 2005

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

1.J340895LEASE. SUBJECT TO THE TERMS AND CONDITIONS AS SET OUT IN THE LEASE.
REGISTERED 29.6.2005.

Warning: (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

- (2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.
- (3) The interests etc. shown hereon may have a different priority than shown.

-----END OF CERTIFICATE OF CROWN LAND TITLE------END OF CERTIFICATE OF CROWN LAND TITLE------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	DP45072 [SHEET 1].
PREVIOUS TITLE:	LR3128-63.
PROPERTY STREET ADDRESS:	NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AREA:	SHIRE OF BROOME.

NOTE 1:J214473CORRESPONDENCE FILE 51015-2003-01RONOTE 2:SUBJECT TO SURVEY - NOT FOR ALIENATION PURPOSES

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UNDER THE TRANSFER OF L AND THE LAND ADMINISTRA	AND ACT 1893 TION ACT 1997					

The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.





REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 301 ON DEPOSITED PLAN 45072

STATUS ORDER AND PRIMARY INTEREST HOLDER: (FIRST SCHEDULE)

STATUS ORDER/INTEREST: UNALLOCATED CROWN LAND

PRIMARY INTEREST HOLDER: STATE OF WESTERN AUSTRALIA

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

Warning: (1)

A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register. (2)

(3) The interests etc. shown hereon may have a different priority than shown.

-----END OF CERTIFICATE OF CROWN LAND TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: PREVIOUS TITLE:

DP45072 [SHEET 1]. LR3128-63. PROPERTY STREET ADDRESS: NO STREET ADDRESS INFORMATION AVAILABLE. LOCAL GOVERNMENT AREA: SHIRE OF BROOME.

CORRESPONDENCE FILE 51015-2003-01RO NOTE 1: J214473 NOTE 2: SUBJECT TO SURVEY - NOT FOR ALIENATION PURPOSES



Crown Land Record

The undermentioned land shown on the sketch in the First Schedule hereto is land of the Crown subject to the interests, easements, encumbrances and notices shown in the Second Schedule hereto.

183 FOL.



3089 VOL.

Dated 10th November, 1994 CHIEF EXECUTIVE OFFICER

LAND REFERRED TO

Broome Lot 833 on Land Administration Plan 10049

FIRST SCHEDULE

05901/3/92-4M-S/9499

Production of Graphic at Suitable Scale is Inappropriate.

Refer to Original Surveys Quoted in Land Description.

FOR ENCUMBRANCES AND OTHER MATTERS AFFECTING THE LAND SEE SECOND SCHEDULE

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e portion comprised in Broome Lot 3075 on Miscellaneous Plan 1864 t 1 3105 Eol 62	o CLR	F 878807	1/ 2 QE	15 /0	Commenter	a
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WESTERN AUSTRALIA	duplicate edition N/A	DATE DUPLICA	ATE ISSUED
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CROWN LAND TITLE			
UNDER THE TRANSFER OF LAND ACT 1893 AND THE LAND ADMINISTRATION ACT 1997			

The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.





REGISTRAR OF TITLES

	LAND DESCRIPTION:
LOT 833 ON DE	EPOSITED PLAN 210049
6 G	STATUS ORDER AND PRIMARY INTEREST HOLDER: (FIRST SCHEDULE)
STATUS ORDE	ER/INTEREST: UNALLOCATED CROWN LAND
CRUIARY INT	EREST HOLDER: STATE OF WESTERN AUSTRALIA
JC	LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)
I224631	PORTION COMPRISED IN LOTS 3125 TO 3130 & 3132 ON DP32082 TO VOL 3128 FOLS 57 TO 62 & 64. REGISTERED 3.9.2002.
^{2.} ¹⁴⁷²²⁷⁹	FOLIO CANCELLED. NEW FOLIOS HAVE BEEN CREATED FOR LOT(S) ON DP36809 TO VOL 3131 FOLS 487 & 488. REGISTERED 7.5.2003.
Warning: (1)	A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.
(2) (3)	The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register. The interests etc. shown hereon may have a different priority than shown.

-----END OF CERTIFICATE OF CROWN LAND TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land

and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:LR3099-18 (833/DP210049).PREVIOUS TITLE:LR3089-183.PROPERTY STREET ADDRESS:NO STREET ADDRESS INFORMATION AVAILABLE.LOCAL GOVERNMENT AREA:NO LOCAL GOVERNMENT AUTHORITY INFORMATION AVAILABLE.

NOTE 1: A000001A CORRESPONDENCE FILE 2270 / 1993.

NOTE 2: LAND PARCEL IDENTIFIER OF BROOME TOWN LOT/LOT 833 ON SUPERSEDED PAPER

END OF PAGE 1 - CONTINUED OVER

ORIGINAL CERTIFICATE OF CROWN LAND TITLE QUALIFIED 0049 VOLUME/FOLIO: LR3099-18

REGISTER NUMBER: 833/DP210049

PAGE 2

CERTIFICATE OF CROWN LAND TITLE CHANGED TO LOT 833 ON DEPOSITED PLAN
210049 ON 29-AUG-02 TO ENABLE ISSUE OF A DIGITAL CERTIFICATE OF TITLE.NOTE 3:THE ABOVE NOTE MAY NOT BE SHOWN ON THE SUPERSEDED PAPER CERTIFICATE
OF TITLE.

Cancelled



The undermentioned land shown on the sketch in the First Schedule hereto is land of the Crown subject to the interests, easements, encumbrances and notices shown in the Second Schedule hereto.



Dated 14th March, 1995

CHIEF EXECUTIVE OFFICER

Broome Lot 833 on Land Administration Plan 10049

FIRST SCHEDULE

05901/3/92-4M-S/9499

Production of Graphic at Suitable Scale is Inappropriate.

Refer to Original Surveys Quoted in Land Description.

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FOR ENCUMBRANCES AND OTHER MATTERS AFFECTING THE LAND SEE SECOND SCHEDULE

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SECOND Schedules     Norm     Methodise     Norm     Methodise     Methodis     Me	ge 2 (of 2 pages)						
Matter Lease C.L. No. 218/1993. Matter Lease C.L. No. 218/1993 Cancelled - Term Expired 31.3.98. Matter Lease C.L. No. 218/1993 Cancelled - Term Expired 31.3.98. Matter Lease C.L. No. 218/1993 Cancelled - Term Expired 31.3.98. Matter Lease C.L. No. 218/1993 Cancelled - Term Expired 31.3.98. Matter Lease C.L. No. 218/1993 Cancelled - Term Expired 31.3.98. Mather Lease C.L. No. 218/1993 Cancelled - Term Expired 31.3.98. Mather Lease C.L. No. 218/1993 Cancelled - Term Expired 31.3.98. Mather Lease C.L. No. 218/1993 Cancelled - Term Expired 31.3.98. Mather Lease C.L. No. 218/1993 Cancelled - Term Expired 31.3.98. Mather Lease C.L. No. 218/1993 Cancelled - Term Expired 31.3.98. Mather Lease C.L. No. 218/1993 Cancelled - Term Expired 13.3.98. Mather Lease C.L. No. 218/1993 Cancelled - Term Expired 13.3.98. Mather Lease C.L. No. 218/199 Cancelled - Term Expired 13.3.98. Mather Lease C.L. No. 218/199 Cancelled - Term Expired 13.3.98. Mather Lease C.L. No. 218/199 Cancelled - Term Expired 13.3.98. Mather Lease C.L. No. 211.9.9. Mather Lease Cancelled - Term Expired 13.3.98. Mather Lease Cancelled - Term Expired 13.3.98. Mather Lease Cancelled - Term Expired 13.3.99. Mather Cancelled - Term Expired 13.3.99. Mather Cancelled 13.9.9.9.9. Ma	SECOND SCHEDULE	LEND BS MENTS					
Act Lease C.L. No. 213/1933   Gancelled - Term Expired 31.3.96.   Application   F147511   29.3.93   8.30   Application     Act Lease C.L. No. 210/1933   Gancelled - Term Expired 31.3.96.   Reprived 10   Reprived 10   10.11.98   8.30   Application     ion now comprised in Broome Lot 3090 on Land Administration Diagram   Application   6942244   3.11.98   8.38   Application     5 to viol 3110 F01 972.   100 F01 973.   Application   6942244   3.11.98   8.38   Application     11stration Diagram 93225) to vol 3110 F01 973.   Application   6942244   3.11.98   8.38   Application	PARTICULARS	INSTRUME	ENT NUMBER	REGISTERED	TIME	SEAL	CERT. OFFICER
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tion now comprised in Broome Lot 3090 on Land Administration Diagram Application (6942244 3.11.98 8.39 3.11.98 8.39 1.11.98 8.39 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99 1.11.99	d Act Lease C.L. No. 218/1993 Cancelled - Term Expired 31.3.98.	Removal of Expired Term Lease	H016879	2.2.99	16.13	(3)	*
rinistration Diagram 93625) to Vol 3110 Fol 973.	tion now comprised in Broome Lot 3090 on Land Administration Diagram 25 to Vol 3110 Fol 972.	Application	6942244	3.11.98	8.38	(	- N
	celled : Balance (Portion now comprised in Broome Lot 3091 on Land inistration Diagram 93625) to Vol 3110 Fol 973.	Application	G942244	3.11.98	8.38	(3)	<b>N</b>



The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.





**REGISTRAR OF TITLES** 

LAND DESCRIPTION:

LOT 3091 ON DEPOSITED PLAN 193625

STATUS ORDER AND PRIMARY INTEREST HOLDER: (FIRST SCHEDULE)

STATUS ORDER/INTEREST: UNALLOCATED CROWN LAND

#### PRIMARY INTEREST HOLDER: STATE OF WESTERN AUSTRALIA

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

1.K221153EASEMENT BURDEN FOR ACCESS PURPOSES. SEE INSTRUMENT K221153 AND<br/>DEPOSITED PLAN 56051. REGISTERED 8.6.2007.

# Warning: (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

(2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.

(3) The interests etc. shown hereon may have a different priority than shown.

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#### **STATEMENTS:**

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND.

I R3110-973 (3091/DP193625)

SKLICH OF LAND.	LK3110-975 (30917D1193023).
PREVIOUS TITLE:	LR3100-297.
PROPERTY STREET ADDRESS:	41 BUCKLEYS RD, BILINGURR.
LOCAL GOVERNMENT AREA:	SHIRE OF BROOME.

NOTE 1:A000001ACORRESPONDENCE FILE 2012/1983 V2.NOTE 2:LAND PARCEL IDENTIFIER OF BROOME TOWN LOT/LOT 3091 ON SUPERSEDEDPAPER CERTIFICATE OF CROWN LAND TITLE CHANGED TO LOT 3091 ON<br/>DEPOSITED PLAN 193625 ON 04-SEP-02 TO ENABLE ISSUE OF A DIGITAL

END OF PAGE 1 - CONTINUED OVER

#### ORIGINAL CERTIFICATE OF CROWN LAND TITLE QUALIFIED REGISTER NUMBER: 3091/DP193625 VOLUME/FOLIO: LR3110-973

PAGE 2

CERTIFICATE OF TITLE.

- NOTE 3:THE ABOVE NOTE MAY NOT BE SHOWN ON THE SUPERSEDED PAPER CERTIFICATE<br/>OF TITLE.
- NOTE 4: K174965 DEPOSITED PLAN 56051 LODGED



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RECORD OF QUALIFIEI	D CERTIFICA	TE	volume LR3114	folio <b>956</b>
OF CROWN LANE	) TITLE			
UNDER THE TRANSFER OF L AND THE LAND ADMINISTRA	AND ACT 1893 TION ACT 1997			

The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.





**REGISTRAR OF TITLES** 

LAND DESCRIPTION:

LOT 3106 ON DEPOSITED PLAN 36809

**STATUS ORDER AND PRIMARY INTEREST HOLDER:** (FIRST SCHEDULE)

#### STATUS ORDER/INTEREST: UNALLOCATED CROWN LAND

#### PRIMARY INTEREST HOLDER: STATE OF WESTERN AUSTRALIA

#### LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

Warning: (1)

A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register. (2)

(3) The interests etc. shown hereon may have a different priority than shown.

#### -----END OF CERTIFICATE OF CROWN LAND TITLE-----

#### **STATEMENTS:**

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: DP36809 [SHEET 1]. PREVIOUS TITLE: LR3120-396. PROPERTY STREET ADDRESS: LOT 3106 FAIRWAY DR, CABLE BEACH. LOCAL GOVERNMENT AREA: SHIRE OF BROOME.

CORRESPONDENCE FILE 02270-1993-03RO NOTE 1: I472279 NOTE 2: SUBJECT TO SURVEY - NOT FOR ALIENATION PURPOSES

a ^{uu} te		REC <b>3107</b>	ister number 7/DP3680	9
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CROWN LAND	) TITLE			
UNDER THE TRANSFER OF I AND THE LAND ADMINISTRA	LAND ACT 1893 TION ACT 1997			

The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.





**REGISTRAR OF TITLES** 

LAND DESCRIPTION:

LOT 3107 ON DEPOSITED PLAN 36809

**STATUS ORDER AND PRIMARY INTEREST HOLDER:** (FIRST SCHEDULE)

#### STATUS ORDER/INTEREST: UNALLOCATED CROWN LAND

#### PRIMARY INTEREST HOLDER: STATE OF WESTERN AUSTRALIA

#### LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

Warning: (1)

A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register. (2)

(3) The interests etc. shown hereon may have a different priority than shown.

#### -----END OF CERTIFICATE OF CROWN LAND TITLE------

#### **STATEMENTS:**

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: PREVIOUS TITLE:

DP36809 [SHEET 1]. LR3120-396. PROPERTY STREET ADDRESS: LOT 3107 FAIRWAY DR, CABLE BEACH. LOCAL GOVERNMENT AREA: SHIRE OF BROOME.

CORRESPONDENCE FILE 02270-1993-03RO NOTE 1: I472279 NOTE 2: SUBJECT TO SURVEY - NOT FOR ALIENATION PURPOSES

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Page 1 (of 2 pages)

Application H633660

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CROWN

CROWN

NOT TO BE REMOVED FROM THE DEPARTMENT OF LAND ADMINISTRATION

WESTERN

LAND



Dated 28 December 2000

**REGISTRAR OF TITLES** 

Broome Lot 3075 on Land Administration Miscellaneous Plan 1864.

**THIRD SCHEDULE** 

LAND REFERRED TO

interests, easements, encumbrances and notices shown in the Second Schedule hereto.



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FOR GRAPHIC REFER TO THE PLAN OR DIAGRAM **QUOTED IN THE LAND DESCRIPTION** 

> SUBJECT TO SURVEY NOT FOR ALIENATION PURPOSES

LAND

THE LAND AND INTERESTS ETC. SHOWN HEREON MAY BE AFFECTED BY INTERESTS ETC. THAT CAN BE, BUT ARE NOT, (1)SHOWN ON THE REGISTER THE INTERESTS ETC. SHOWN HEREON MAY HAVE A DIFFERENT PRIORITY THAN SHOWN. (2)

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Page 2 (of 2 pages)		INSTRU	NATURE			INCTDI	NATURE	

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The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.



**REGISTRAR OF TITLES** 



LAND DESCRIPTION:

LOT 687 ON DEPOSITED PLAN 168897

STATUS ORDER AND PRIMARY INTEREST HOLDER: (FIRST SCHEDULE)

STATUS ORDER/INTEREST: UNALLOCATED CROWN LAND

PRIMARY INTEREST HOLDER: STATE OF WESTERN AUSTRALIA

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF CROWN LAND TITLE------

**STATEMENTS:** 

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: PREVIOUS TITLE: PROPERTY STREET ADDRESS: LOCAL GOVERNMENT AREA:

LR3002-352 (687/DP168897). LR3002-352. NO STREET ADDRESS INFORMATION AVAILABLE. SHIRE OF BROOME.

#### NOTE 1: K084692 CORRESPONDENCE FILE 03154-1962-04RO

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WESTERN 7 AUSTRALIA N/	A N/A
RECORD OF QUALIFIED CERTIFICATE	VOLUME FOLIO LR3128 57
OF CROWN LAND TITLE UNDER THE TRANSFER OF LAND ACT 1893	

The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.





**REGISTRAR OF TITLES** 

LAND DESCRIPTION: 3125 ON DEPOSITED PLAN 32082 **STATUS ORDER AND PRIMARY INTEREST HOLDER:** (FIRST SCHEDULE) STATUS ORDER/INTEREST: UNALLOCATED CROWN LAND IARY INTEREST HOLDER: STATE OF WESTERN AUSTRALIA LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE) 1538859 EASEMENT BURDEN SEE INSTRUMENT I538859 AND DEPOSITED PLAN 193625. AS TO LEASE 1538858 ONLY. REGISTERED 4.7.2003. I697649 AUTHORISATION ORDER FOR THE TAKING OF INTERESTS. AS TO PORTION ONLY. REGISTERED 17.11.2003. I697650 NOTICE OF INTENTION TO TAKE FOR THE DESIGNATED PURPOSE OF CAMEL LEASE, WILDLIFE CENTRE AND ABORIGINAL CULTURAL USE. AS TO PORTION ONLY. REGISTERED 17.11.2003. I943138 FOLIO CANCELLED. NEW FOLIOS HAVE BEEN CREATED FOR LOT(S) ON DP43435 TO 4. VOL 3134 FOLS 496 TO 500. REGISTERED 5.7.2004. Warning: (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location. (2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.

(3) The interests etc. shown hereon may have a different priority than shown.

#### -----END OF CERTIFICATE OF CROWN LAND TITLE------

#### **STATEMENTS:**

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: PREVIOUS TITLE:

#### DP32082 [SHEET 1]. LR3099-18.

#### END OF PAGE 1 - CONTINUED OVER
### ORIGINAL CERTIFICATE OF CROWN LAND TITLE QUALIFIED 2082 VOLUME/FOLIO: LR3128-57

REGISTER NUMBER: 3125/DP32082 VOLUM

PAGE 2

PROPERTY STREET ADDRESS:NO STREET ADDRESS INFORMATION AVAILABLE.LOCAL GOVERNMENT AREA:NO LOCAL GOVERNMENT AUTHORITY INFORMATION AVAILABLE.

NOTE 1:I224631CORRESPONDENCE FILE 02111-1964-04RONOTE 2:J029692DEPOSITED PLAN 43435 LODGED.

# Cancelled

### LANDGATE COPY OF ORIGINAL NOT TO SCALE Wed Jul 8 09:04:42 2009 JOB 32529496

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CROWN LANI	O TITLE			
UNDER THE TRANSFER OF AND THE LAND ADMINISTRA	LAND ACT 1893 ATION ACT 1997			

The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.





**REGISTRAR OF TITLES** 

LAND DESCRIPTION: 3131 ON DEPOSITED PLAN 36809 **STATUS ORDER AND PRIMARY INTEREST HOLDER:** (FIRST SCHEDULE) **STATUS ORDER/INTEREST:** UNALLOCATED CROWN LAND **PRDIARY INTEREST HOLDER:** STATE OF WESTERN AUSTRALIA LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE) FOLIO CANCELLED. NEW FOLIOS HAVE BEEN CREATED FOR LOT(S) ON DP45072 TO J214473 VOL. 3050 FOL'S. 458 AND 459. REGISTERED 15.3.2005. g: (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Warni Lot as described in the land description may be a lot or location. (2)The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register. (3)The interests etc. shown hereon may have a different priority than shown.

### **STATEMENTS:**

-----END OF CERTIFICATE OF CROWN LAND TITLE------

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND

DP36800 [SHEET 1]

SKETCH OF LAND.	
PREVIOUS TITLE:	LR3120-396.
PROPERTY STREET ADDRESS:	NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AREA:	NO LOCAL GOVERNMENT AUTHORITY INFORMATION AVAILABLE.

NOTE 1:I472279CORRESPONDENCE FILE 02270-1993-03RONOTE 2:SUBJECT TO SURVEY - NOT FOR ALIENATION PURPOSES

### LANDGATE COPY OF ORIGINAL NOT TO SCALE Wed Jul 8 09:04:42 2009 JOB 32529496

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UNDER THE TRANSFER OF L AND THE LAND ADMINISTRAT	AND ACT 1893 FION ACT 1997			

The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.





**REGISTRAR OF TITLES** 

LAND DESCRIPTION:

LOT 3132 ON DEPOSITED PLAN 32082

**STATUS ORDER AND PRIMARY INTEREST HOLDER:** (FIRST SCHEDULE)

### STATUS ORDER/INTEREST: UNALLOCATED CROWN LAND

### PRIMARY INTEREST HOLDER: STATE OF WESTERN AUSTRALIA

### LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

Warning: (1)

A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register. (2)

(3) The interests etc. shown hereon may have a different priority than shown.

### -----END OF CERTIFICATE OF CROWN LAND TITLE-----

### **STATEMENTS:**

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: DP32082 [SHEET 1]. LR3120-396, LR3099-18. PREVIOUS TITLE: PROPERTY STREET ADDRESS: NO STREET ADDRESS INFORMATION AVAILABLE. LOCAL GOVERNMENT AREA: SHIRE OF BROOME.

NOTE 1: I224631 CORRESPONDENCE FILE 02111-1964-04RO

<del>ىرىن</del> ى.	s utc	REC 3149	BISTER NUMBER	9		
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RECORD OF QUAL	LIFIED CERTIFICA	ATE	VOLUME <b>LR3131</b>	folio <b>487</b>		
CROWN LAND TITLE						
UNDER THE TRANSFER OF LAND ACT 1893 AND THE LAND ADMINISTRATION ACT 1997						

The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.



**REGISTRAR OF TITLES** 

LAND DESCRIPTION:

LOT 3149 ON DEPOSITED PLAN 36809

**STATUS ORDER AND PRIMARY INTEREST HOLDER:** (FIRST SCHEDULE)

STATUS ORDER/INTEREST: UNALLOCATED CROWN LAND

### PRIMARY INTEREST HOLDER: STATE OF WESTERN AUSTRALIA

### LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

Warning: (1)

A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register. (2)

(3) The interests etc. shown hereon may have a different priority than shown.

### -----END OF CERTIFICATE OF CROWN LAND TITLE-----

### **STATEMENTS:**

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: PREVIOUS TITLE:

DP36809 [SHEET 1]. LR3099-18. PROPERTY STREET ADDRESS: LOT 3149 FAIRWAY DR, CABLE BEACH. SHIRE OF BROOME. LOCAL GOVERNMENT AREA:

CORRESPONDENCE FILE 02270-1993-03RO NOTE 1: I472279 NOTE 2: SUBJECT TO SURVEY - NOT FOR ALIENATION PURPOSES

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Mar + the		315(	<b>)/DP368</b> 0	9		
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WESTERN	AUSTRALIA	N/A	N/A	4		
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OF						
CROWN LAND TITLE						
UNDER THE TRANSFER OF LAND ACT 1893 AND THE LAND ADMINISTRATION ACT 1997						

The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.



**REGISTRAR OF TITLES** 

LAND DESCRIPTION:

LOT 3150 ON DEPOSITED PLAN 36809

**STATUS ORDER AND PRIMARY INTEREST HOLDER:** (FIRST SCHEDULE)

STATUS ORDER/INTEREST: UNALLOCATED CROWN LAND

### PRIMARY INTEREST HOLDER: STATE OF WESTERN AUSTRALIA

### LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

Warning: (1)

A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register. (2)

(3) The interests etc. shown hereon may have a different priority than shown.

### -----END OF CERTIFICATE OF CROWN LAND TITLE-----

### **STATEMENTS:**

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: PREVIOUS TITLE:

DP36809 [SHEET 1]. LR3099-18. PROPERTY STREET ADDRESS: LOT 3150 FAIRWAY DR, CABLE BEACH. LOCAL GOVERNMENT AREA: SHIRE OF BROOME.

CORRESPONDENCE FILE 02270-1993-03RO NOTE 1: I472279 NOTE 2: SUBJECT TO SURVEY - NOT FOR ALIENATION PURPOSES

		REC <b>304</b>	SISTER NUMBER	5	
WESTERN	AUSTRALIA	DUPLICATE EDITION <b>N/A</b>	date duplica	TE ISSUED	
RECORD OF QUALIF OF CROWN LAI	ED CERTIFICA	TE	volume LR3134	folio 500	
UNDER THE TRANSFER OF LAND ACT 1893 AND THE LAND ADMINISTRATION ACT 1997					

The undermentioned land is Crown land in the name of the STATE of WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.





**REGISTRAR OF TITLES** 

LAND DESCRIPTION:

LOT 304 ON DEPOSITED PLAN 43435

STATUS ORDER AND PRIMARY INTEREST HOLDER: (FIRST SCHEDULE)

STATUS ORDER/INTEREST: UNALLOCATED CROWN LAND

### PRIMARY INTEREST HOLDER: STATE OF WESTERN AUSTRALIA

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

1.K221153EASEMENT BURDEN FOR ACCESS PURPOSES. SEE INSTRUMENT K221153 AND<br/>DEPOSITED PLAN 56051. REGISTERED 8.6.2007.

## Warning: (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

(2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.

(3) The interests etc. shown hereon may have a different priority than shown.

|--|

### **STATEMENTS:**

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND

DP43435 [SHEET 1]

SILLICITOT LITID.	
PREVIOUS TITLE:	LR3128-57.
PROPERTY STREET ADDRESS:	LOT 304 FAIRWAY DR, BILINGURR.
LOCAL GOVERNMENT AREA:	SHIRE OF BROOME.

NOTE 1: I224631 CORRESPONDENCE FILE 02111-1964-04RO

NOTE 2: K174965 DEPOSITED PLAN 56051 LODGED



### Appendix B Town Planning Scheme No. 4 Information





VIEW			
6	Authorised: Trevor Servaas Plot date: 03 Jul 2003		
1	G.Gazette: 21-December-1999		
	TOWN PLANNING SCHEME MAP No.	8 of 14	





# Appendix C DoW WIN Bore Search

### Lots 3150 & 304 Fairway Drive, Cable Beach - 5km radius





### Appendix D DEC Contaminated Sites Database Search



Multi-tool. Press and hold a button, dragging mouse to navigate.

burb/To	wn Meta	idata <u>M</u>	ap Help	
amin	ated Si	tes		
	Switc	h to Adv	anced S	<u>Search</u>
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<u>Disclaimer</u>



Appendix E

Stass Environmental (2005) Baseline Soil Contamination Assessment: North West Eggs, Broome, WA. December 2005.



# REPORT ON: BASELINE SOIL CONTAMINATION ASSESSMENT,

### NORTH WEST EGGS,

**BROOME**, WA

**DECEMBER 2005** 



**Environmental Science & Engineering** 

# REPORT TITLE: BASELINE SOIL CONTAMINATION ASSESSMENT, NORTH WEST EGGS, BROOME, WA

DATE: DECEMBER 2005

**REPORT VERSION: VR 1** 

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ABN 73 976 537 552

December 2005

### **BASELINE SOIL CONTAMINATION ASSESSMENT,**

### NORTH WEST EGGS, BROOME, WA

### 1. Introduction

The Anglican Schools Commission (ASC) is currently negotiating the purchase of an egg farm (North West Eggs - referred to as the "facility" in the report) close to Broome, Western Australia. The property is to be redeveloped in future as a secondary school.

To be able to redevelop this farm property for its new intended land use, the ASC recognised that an environmental assessment of the current status of the property needs to be established to confirm the suitability of this property for redevelopment. To be able to develop an understanding of the *status quo* of the condition of the property, the land had to first be visually assessed for contamination in concurrence with surface soil sampling of the areas which were deemed to have the highest risk of contamination.

A list of contaminants which were considered to have the greatest likelihood of being present at a facility of this kind (high density chicken/egg farm), together with information collected during interviews with current owners/managers (North West Eggs), was prepared. This data were then used for generating the type and quantity of laboratory analyses which would be required for a comprehensive evaluation of the environmental condition of the property.

Approximately 21 soil sampling locations were identified and sampled at the end of October 2005 and supplied with the relevant Chain of Custody (CoC) documentation to Australian Reference Laboratories (ARL) in East Perth for detailed chemical analyses. All soil samples were collected in accordance with AS 4482.1:1999, or other methods approved by the Department of Environment (DoE), and submitted for

analysis to ARL who hold a current NATA accreditation for the analyses specified.

WA 6926



Figure 1: Location of the site



The exact location of these sampling sites and results of the analyses are provided under the report section describing the findings of this investigation.

### 1.1. Terms of Reference

Rev Peter Lawrence of the Anglican Schools Commission met with Mr Andre Stasikowski of Stass Environmental in July 2005 to discuss this project. Subsequently Stass Environmental provided a proposal to undertake this work, which was formally approved by ASC in October 2005.

### 1.2. Objectives of the Study

The following objectives were set for this study:

- Provide an assessment of potential site contamination by means of a visual site inspection.
- Develop an understanding of the mode of operation of the facility and based on that, provide a soil sampling plan which will adequately address the requirements of this study.
- Review the results of the sampling programme and provide an interpretation of the chemical analyses with respect to environmental condition of the soils.
- Provide a comprehensive environmental assessment report on the investigations undertaken.

### 1.3. Scope of Work

This investigation has been undertaken based on a typical average scope of works for a facility of this size. Based on the information provided by ASC, the following scope of work was carried out:

• Completion of a background study, including: a site history search to identify any possible sources of contamination from previous land uses; regional geological and hydrogeological conditions; groundwater usage in the vicinity; and the presence of nearby service utilities that may act as conduits for movement of contamination.

- A thorough site walkthrough to establish current site conditions and search for any visual evidence of contamination or potential on- and off-site sources of contamination.
- A soil sampling program consisting of approximately 20 soil samples up to a depth of 0.3 metres. Soil samples were screened in the field and observations made of any visual evidence of impact. Samples exhibiting visual evidence of impact were collected and retained for analytical testing.
- Sampling locations were based around potential sources of contamination. Sampling equipment will be decontaminated between each soil boring and sample, as per CSMS 2003, Department of Environment.
- In the process of the investigation, Stass Environmental will determine whether groundwater is within 8.0 metres of the surface and whether the water quality is suitable for domestic use.
- A site assessment report will be generated along guidelines supplied by the Department of Environment, CSMS 2003.

### 2. Site Description And Layout

### 2.1. Surrounding Land Use

The site is located along Fairway Drive (No 32), approximately 4 km north of Broome town centre and is surrounded by native bush (see Figure 1). The surrounding bushland is under native title, and can be considered as virgin bush.

No previous development of any kind has been undertaken in this bushland.

### 2.2. Site Description

The site is a 4 ha plot of land surrounded by a chain link fence. The main entrance is via a gate from the north of the property, leading directly off Fairway Drive. The site land title describes the property as Lot 2605 on deposited plan 189036 in the Shire of Broome.

The Egg farm consists of the following buildings (See Figure 2):

- 4 batch hen egg laying sheds
- 1 packing room
- Workshop
- Residence
- Offices and toilets
- rearing shed
- brooding shed
- 3 store rooms
- 4 feed silos

Both the northern and southern extremes of the property are used for dumping of scrap, which consists of decommissioned equipment, piping and roofing materials. These are also shown in Figure 2 and in photo plate 1 (areas A and B).

An old dam is situated on the southern end of the property, which is currently being filled in with clean fill sourced from the Broome area (information from the farm



### Figure 2: Site infrastructure and soil sampling locations







Photo Plate 1: Aerial photograph of the site showing areas where scrap is located

manger, Ms Tania Devereux).

A small burn pit is located centrally on the site. The pit is used for burning of old cardboard and wood materials. Any burns within the pit are monitored by the local fire brigade, and these occur infrequently. No other materials (plastics etc) are burned within this pit.

Chicken manure is stored at three locations (shown in Figure 2) and is sold off periodically as fertiliser.

The site is supplied by scheme water and power from Broome.

All solid waste is removed to the nearby landfill. Sewage from office and residence toilets is directed t to a cess pit with overflow to drains.

### 3. Site History

### 3.1. Land Ownership

North West Eggs was established as a business in Broome in the 1970's at Coconut Wells and then moved to Fairway Drive (current location) during 1980's – exact date is not known to the author. The business went bankrupt in 1993, when it was purchased by the current owners.

Prior to the described land use (egg farm) it is our understanding that the land was undeveloped native bushland (Crown Land).

### 3.2. Chance of Prior Contamination

The site has been used as an egg laying facility (chicken farm) from early 1980's. As such, some potential for contamination from disinfectant compounds and pesticide treatment existed prior to current owners taking management of the site.

No asbestos was used on the site for construction or roofing. It is not expected that any asbestos is present at the site.

The current owners took control of the site in 1993 and have retained a full list of chemicals used on the site which is provided in Appendix C.

### 3.3. Pollution Potential

The primary pollution potential on the site is from the use of cleaning and disinfectant chemicals in the sheds, which are washed down and a potential pathway exists to the unpaved areas in close proximity to the sheds.

The chemical of concern is formaldehyde, which was used at a rate of once or twice per year from 1993 to 2001. Formaldehyde is no longer used as a disinfectant at the site.

Sporadic use of pesticides, termite treatments etc is likely to have occurred during the occupation of this land, however it is not considered significant.

No asbestos products or PCB's (from electrical installations) are known to exist on the property.

As arsenic is often used in commercial chicken feed as an antibiotic and to improve production (weight gain), and 90% of this additive ends up in the litter, there is some concern that the chicken manure on the site may have affected soil quality. For this reason all soil samples collected were tested for their arsenic content.

### 4. Liquid wastes

### 4.1. Stormwater

There are no storm water drains installed at the site. Stormwater leaves the site under gravity flow and exits to a shallow trench on the perimeter of the site (see photo 2 and 3). From here storm water joins the main storm water drain system of Fairway Drive.

### 4.2. Wash Down Water

Wash down water from the sheds runs off the concrete plinths which act as floor in the sheds and collects on the land adjacent to the sheds. No special collection trenches or reservoirs for the washdown water were observed at the site.

The washdown water will contain dissolved litter and some feed as well as any other cleaning substance which may be in use within the sheds. This practice may well have lead to increasing the fertility of the soils but is unlikely to have had significant detrimental effect on the soils with respect to any long term contamination.



Photo Plate 2 – Drain/firebreak on site perimeter



Photo Plate 3 – Drain leading to Fairway Drive



Photo Plate 4 – Scrap laydown Area B



Photo Plate 5 – Scrap lay down Area A

The soil sampling programme targeted areas close to the sheds to show whether this practice has had any effect on the soil condition adjacent to the sheds.

### 4.3. Cleaning Chemicals and Waste Water

Formaldehyde was used as a disinfectant up to 2001. Since then, no cleaning chemicals have been in use in the sheds. The sheds have manure removed from them and then are hosed down with scheme water. The fate of this water was described above.

### 4.4. Sewage

Sewage from the office toilets and wash facilities is directed to an underground tank with over flow to sub surface drains.

The sewage and waste water from the residence is treated in like manner. There is no mains sewage connection at the farm.

### 5. Solid Wastes

The waste products from the farm constitute two items:

- Chicken manure
- Dead chickens

The dead chickens are sold to Malcolm Douglas at the Broome Crocodile Park and any excess is removed to the local land fill facility.

Chicken manure is sold off to local residents and market gardeners as a soil conditioner.

### 6. Air Emissions

There are no gaseous air emissions from the facility. Some odour from shed air conditioning fans is probably noticeable during low wind conditions, but as theer are no close residences to the site, this is not considered a problem.

There are a number of refrigerated air conditioning units on the site. These are of new design and are not considered a source of CFC's or other gases.

### 7. Pesticide and Herbicide Use

Glyphosphate is used as a herbicide to control the spread of weeds. Spraying with Glyphosphate is only done during periods of growth at a frequency of approximately 3 to 4 times per year.

The facility uses a number of pesticides, including rodent bait, cockroach bait and general insecticides. These chemicals are listed in Appendix C. The pesticides and all other chemicals which are in use meet strict standards used in the food industry.

There are regular pest control treatments which are carried out by professional pest controllers. As part of the egg farm's quality assurance and HACCAP certification, a log book of all treatments, chemical MSDS and chemical product data information sheets are kept on site. Some of this information is available in Appendix C.

### 8. Hydrocarbon Storage

Diesel fuel is kept on site in a steel 205 litre drum. The purpose for the diesel is to provide fuel for the site bobcat and also for the power generator which is used as a standby in case of power failure.

### 9. Surface and Ground Water

There are no perennial or semi-perennial water courses close to the site. No wet season drainage scours were observed in the proximity of the site.

Ground water has been investigated in the past as a potential source of water for the farm, but the findings were that the water quality was brackish and not suitable for either domestic or stock (chicken) watering purposes.

Anecdotal (Farm manager) evidence suggests that ground water is in excess of 8 m depth and is of poor quality. Further, no known ground water bores exist in the vicinity of the site.

It was not part of the brief of this investigation to investigate ground water quality, aquifer type and potential or possibility of any impact to ground water from the operations of the chicken farm.

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North West Egg Farm, Broome - Draft Report

### 10. Soil Sampling

### 10.1. Soil Sampling Methods

Soil was sampled at the surface from predetermined locations which targeted the worst case scenario for impact to soil quality from the operations of the egg farm.

Sampling of contaminated areas was carried out in accordance with AS 4482.1 – 1997, "Guide to the sampling and investigation of potentially contaminated soil".

The following methodology was used for the sampling procedures:

- Samples from shallow excavations and stockpiles were obtained using clean hand tools (eg. hand held shovels).
- All discrete soil samples were taken expeditiously from freshly exposed material.
- Disposable gloves were used when sampling to avoid contact with potentially toxic compounds, and changed between each sampling event in order to avoid cross-contamination.
- All samples were placed in screw-capped glass jars with either Teflon or aluminium foil cap liners.
- Sample jars were labelled with permanent marking pen. The label indicated the sample identification, sampling date and initials of the sampling personnel. The sample identification was also written on the lid of the container.

Sample transportation was traced by Chain of Custody (CoC) documentation. The CoC forms served three main purposes:

- i) To serve as a legal record of sample whereabouts and custody from the time of sampling to the time of arrival at the laboratory.
- ii) To provide the laboratory with information regarding the mode of preservation of the samples and the analysis required.
- iii) To allow confirmation that samples reached the laboratory intact, in the right preservation condition and within acceptable timeframe to avoid sample degradation.

### 10.2. Analytical Laboratory Testing

A total of 21 soil samples (including QA/QC samples) were collected and submitted for analytical testing. The samples were collected in the field by Stass Environmental personnel and transferred to the laboratory in accordance with AS 4482.1 CoC documentation.

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All laboratory analytical testing was performed by Analytical Reference Laboratory (ARL) of East Perth (WA).

The results of the analytical testing are summarised in summary tables (contained in Appendix B).

ARL's analytical methods are certified by the National Association of Testing Authorities (NATA) and are detailed in Appendix D.

### 10.3. Quality Assurance/Quality Control

Quality control sampling and analysis is regularly conducted as part of the QA/QC Program to validate the integrity of field procedures and assess the reliability of laboratory analyses. The following sections outline the quality control samples obtained and analysis performed as part of the QA/QC Program.

### Laboratory Analysis

The analytical testing laboratories used are required to adhere to accepted analytical procedures and conduct regular quality control checks on their analyses. Details of these are provided with the Laboratory Certificates in Appendix C.

### Field Sampling Procedures

Field sampling procedures were maintained as far as possible within AS 4482.1-1997.

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North West Egg Farm, Broome – Draft Report

### 11. Analytical Results

The soil samples were tested for :

- 19 samples for a full metal suite
- 17 samples for organochlorine pesticides
- 5 selected samples for formaldehyde

No organochlorine pesticides or formaldehyde were detected in the soils tested.

The table below presents the results of the tests for metal content:

Sample	Arsenic	Cadmium	Chromium	Copper	Mercury	Nickel	Lead	Zinc
ID								
1	6	<0.1	8	2	0.03	1	5	6
2	8	<0.1	8	2	0.04	1	5	3
3	7	0.1	10	2	0.12	2	6	45
4	<5	<0.1	9	12	0.14	1	4	40
5	8	<0.1	13	93	0.18	4	5	180
6	<5	<0.1	11	9	0.12	3	4	110
Dup 6	<5	<0.1	10	6	0.09	3	4	110
7	8	0.1	10	72	0.18	3	5	180
8	<5	<0.1	10	3	0.15	1	4	30
9	11	0.1	11	54	0.19	4	5	480
10	8	0.1	11	41	0.22	3	5	160
11	<5	<0.1	9	31	0.13	2	4	78
12	8	<0.1	30	25	0.15	6	16	70
13	6	<0.1	10	10	0.11	2	6	300
14	5	<0.1	9	7	0.08	1	3	37
15	<5	0.1	11	6	0.08	1	5	33
18	<5	<0.1	10	10	0.08	1	4	27
16	<5	0.1	10	18	0.10	2	7	150
Dup 16	<5	0.1	10	17	0.09	2	8	180
DoE	100	20	210	1000	15	600	300	7000
Guideline								

Note – DoE guideline given as HIL "A" – standard domestic residence with garden

All values are given in mg/kg

### **12.** Interpretation of the Results

The interpretation of results in this study is relatively simple in that in spite of the use of the most stringent Department (DoE) of Environment Health Investigation Levels (HIL – A) for domestic residences with a garden – no contamination of any sort was discovered (see table on the previous page).

### 13. Conclusions

It is our conclusion that there is no evidence of any significant contamination at the site.

While soil tests below the concrete plinths of the chicken sheds were not tested and it is possible that some pesticide contamination (from termite treatments) may reside there, it is not considered to be significant in the light that it is not accessible.

On the basis of this conclusion, it is equally unlikely that there is any ground water contamination resulting from water infiltration from the site. The ground water (from anecdotal evidence) is of poor quality, and not suitable for domestic use.

### 14. Recommendations

It is our understanding that the current owners will continue to operate the egg farm business for the foreseeable future. It would be prudent to confirm the environmental status of the property prior to the final hand over to the ASC. This could be done by a simple site walk over and if considered necessary, some soil samples could be collected from any areas that might have changed in nature since this survey.
North West Egg Farm, Broome - Draft Report

# APPENDIX A

14



### LABORATORY REPORT

**ARL LAB No:** 28274-90 **DATE:** 30 November 2005

CLIENT: Stass Environmental PO Box 11, KALAMUNDA WA 6926

ATTENTION: Mr A. Stasikowski

SAMPLE DESCRIPTION: Five soil samples as received for analysis of formaldehyde. Seventeen soil samples as received for analysis of heavy metals and organochlorine pesticides (OC).

**DATE RECEIVED:** 04 November 2005

PROJECT NUMBER: ASC 01

**PROJECT NAME:** NW Eggs – Broome WA

#### **METHOD:**

Heavy Metals Organochlorine Pesticides ARL No 027 ARL No 003

#### **RESULTS:**

Lab No	Sample Marks	Formaldehyde
		mg/kg
28278	S5	< 0.2
28280	S7	< 0.2
28282	S9	< 0.2
28286	S13	< 0.2
28288	S15	< 0.2

Mr A. Stasikowski Stass Environmental ARL Lab No: 28274-90 30 November 2005

#### **Organochlorine Pesticides**

Lah No	Sample Marks
Launo	Sample Marks
28274	S1
28275	S2
28276	<b>S</b> 3
28277	S4
28278	S5
28279	S6
28280	S7
28281	S18
28282	S9
28283	S10
28284	S11
28285	S12
28286	S13
28287	S14
28288	S15
28289	S8
28290	S16

No common organochlorine pesticides were detected in the seventeen soil samples.

Limits of detection:	mg/kg	Spike Recovery
Aldrin	0.01	73%
BHCs	0.01	73%
Chlordane	0.01	-
Chlorpyrifos	0.05	-
DDE	0.01	-
DDD	0.01	-
DDT	0.01	80%
Dieldrin	0.01	77%
Endosulphan I	0.01	-
Endosulphan II	0.01	-
Endosulphan Sulphate	0.01	-
НСВ	0.01	-
Heptachlor	0.01	75%
Heptachlor Epoxide	0.01	-
Oxychlordane	0.01	-
Surrogate Recovery	78%, 91%	

Mr A. Stasikowski Stass Environmental ARL Lab No: 28274-90 30 November 2005

#### **Heavy Metals**

Lab No	Sample Marks	Arsenic	Cadmium	Chromium	Copper
	•		mg	/kg	
28274	S1	6	< 0.1	8	2
28275	S2	8	< 0.1	8	2
28276	S3	7	0.1	10	2
28277	S4	<5	< 0.1	9	12
28278	S5	8	<0.1	13	- 93
28279 Dup	S6	<5	< 0.1	11	9
28279	S6	<5	< 0.1	10	6
28280	S7	8	0.1	10	72
28281	S18	<5	< 0.1	10	3
28282	S9	11	0.1	11	54
28283	S10	8	0.1	11	41
28284	S11	<5	< 0.1	9	31
28285	S12	8	< 0.1	30	25
28286	S13	6	< 0.1	10	10
28287	S14	5	< 0.1	9	7
28288	S15	<5	0.1	11	6
28289	S8	<5	< 0.1	10	10
28290 Dup	S16	<5	0.1	10	18
28290	S16	<5	0.1	10	17
Matrix Spil	ke	91%	105%	88%	100%

.

Mr A. Stasikowski Stass Environmental ARL Lab No: 28274-90 30 November 2005

Lab No	Sample Marks	Mercury	Nickel	Lead	Zinc
	-		mg	g/kg	
28274	S1	0.03	1	5	6
28275	S2	0.04	1	5	3
28276	S3	0.12	2	6	45
28277	S4	0.14	1	4	40
28278	S5	0.18	4	5	180
28279 Du	p S6	0.12	3	4	110
28279	S6	0.09	3	4	110
28280	<b>S</b> 7	0.18	3	5	180
28281	S18	0.15	1	4	30
28282	S9	0.19	4	5	480
28283	S10	0.22	3	5	160
28284	S11	0.13	2	4	78
28285	S12	0.15	6	16	70
28286	S13	0.11	2	6	300
28287	S14	0.08	1	3	37
28288	S15	0.08	1	5	33
28289	S8	0.08	1	4	27
28290 Du	p S16	0.10	2	7	150
28290	S16	0.09	2	8	180
Matrix Sp	oike	98%	100%	104%	99%

¥/L

Kim Rodgers Laboratory Manager

North West Egg Farm, Broome - Draft Report

# APPENDIX B

15

DATE 23-9-05 TECHNICIAN REFER	
<b>Circle either:</b> KBB or Termguard Job And (B) Broome(H) Hedland(K) Karratha(D) Der (E)Exmouth(G)Geraldton(W)Darwin(U) Kununurr CLIENT ORDER NUMBER	by(C)Carnarvon a(L)Kalgoorlie(S)Singapore
OPERATORS NAME & LICENCE NUMBER	Sheppind 4589
ACCOUNT TO North west egg	s
ACCOUNT ADDRESS PO BOX	
PHONE (PRIV) (BUS) 9193	6600 (FAX) 91936601
SITE ADDRESS 32 FAIRway DR.	ve Broome 6725
DESCRIPTION OF JOB Full perior etr	e freatment around house
DRIlloinjust french streat	a treat ants & cocks in rarand
House also.	
TREATMENT RECOMMENDATIONS	
	······
TIME COMMENCED 9 30 an TI	ME FINISHED 1.00 pm
CHEMICALS USED Biflex, Biflex AG	ve, temadore, AMORO Gel.
EXCLUSIONS OF AREAS AT JOB	
CHARGE (excluding GST) \$ ac	ld GST = Total \$
	3 "
INSPECTION -An inspection/service is required in	months.
Clients signature	
Quality Control Inspection List	



## **Material Safety Data Sheet**

Page: 1 of 3

Issue Date: August 2001

#### Product Name: NILVERM PIG AND POULTRY WORMER

Classified as Hazardous according to criteria of Worksafe Australia

#### **COMPANY DETAILS**

Company Name	SCHERING-PLOUGH ANIMAL HEALTH LIMITED
Address	11 GIBBON ROAD BAULKHAM HILLS NSW 2153
Emergency Telephone	1800 226 511 (24 HR)
Tel/Fax	Ph: (02) 9852 7200 Fax: (02) 9852 7285
Other Information	This MSDS has been transcribed into Worksafe Australia format from an original issued by the manufacturer on the date shown above.

#### **IDENTIFICATION**

Product Name	NILVERM PIG AND POULTRY WORMER		
Shipping Name (CSN)	Not considered a dangerous good by Manufacturer and no UN number issued.		
Other Names	<u>Name</u> Nilverm Pig and Poultry Wormer	<u>Mancode</u> 085	
UN Number DG Class Sub. Risk Packaging Group Hazchem Code Poisons Schedule	Not Regulated Not Regulated Not Regulated Not Regulated Not Regulated S5		
Product Use	A levamisole based product for the treatment of roundworm in pigs and	poultry.	

#### **Physical Data**

Appearance	A clear, green liquid with a characteristic odour.
Boiling Point	Not known
Vapour Pressure	Not known
Specific Gravity	1.010 at 15°C
Flash Point	Non flammable
Flamm. Limit LEL	Not applicable

#### Other Properties

pH Value	3.4 - 3.6
Form	Liquid
Other Information	Solubility in water (g/L): Completely soluble

#### Ingredients

Ingredients

<u>Name</u> Levamisole Hydrochloride <u>CAS</u> 16595-80-5 Proportion 1.60%

ATTENTION TANIA.

Approved Label 01/08/00

Page 3 of 6

MEASURE PACK LABEL



Aventis

NRA Approval No. 32034/0800

OUTER PACK.

(Label code)

## Water Examination Laboratory

The Western Australian Centre for Pathology and Medical Research

Locked Bag 2009 Nedlands WA 6909 Phone: (08) 9346 2583 Facsimile: (08) 9381 7139



Tania Deveraux North West Eggs PO Box 905 BROOME WA 6725

#### **Certificate of Analysis**

Project Number: PW-058479	Collected: 25-Nov-2004	Received: 26-Nov-2004	
Lab Number: W04-052437			
Collection Point: Shed Water			
Analysis	Result	Units	Method
Confirmed Total Coliforms	est. <1	CFU/100 m	L MV/M001
Confirmed Thermotolerant Coliforms	s est. <1	CFU/100 m	L MWM002
Escherichia coli	est. <1	CFU/100 m	L MWM002
Comments			

Due to a high background growth of non-coliform organisms, the Coliform count may be underestimated.

#### Lab Number: W04-052438

Collection Point: Grading Room Water

Analysis	Result	Units	Method
C firmed Total Coliforms	est. <1	CFU/100 mL	MVVM001
Confirmed Thermotolerant Coliforms	est. <1	CFU/100 mL	MWM002
Escherichia coli	est. <1	CFU/100 mL	MVVM002

Report Type: Final

Report Number: 79900

Authorised By: Mandy Henderson on 29/11/2004

The submitting agency is responsible for the collection and transportation of samples. ***End Of Report***





## **Department of Primary Industries**

#### Certificate of Analysis

Report Comments

Work Order: 04-12-083 Reported : 10-Jan-05

#### Limits of Reporting for Tissue Screen

RESIDUES	LOR (mg/kg)	
ß-Lactams:		
penicillin G	0.01	
ampicillin	0.01	
amoxicillin	0.01	
cloxacillin	0.1	
cephalonium	0.1	
cefuroxime	0.1	
ceftiofur (desfuroylceftiofur)	0.2	
Aminoglycosides:		
neomycin	0.1	
streptomycin	0.1	
dihydrostreptomycin	0.1	
apramycin	0.5	
gentamicin	0.1	
Sulphonamides:		
sulphadiazine	0.05	
sulphadimidine	0.05	
sulphadoxine	0.05	
sulphaquinoxaline	0.05	
sulphatroxazole	0.05	
sulphafurazole	0.05	
sulphameter	0.05	
sulphapyridine	0.05	
sulphthiazole	0.05	
sulphamerazine	0.05	
Tetracylines:		
chlortetracycline	0.05	
tetracycline	0.1	
oxytetracycline	0.1	
doxycycline	0.05	
Macrolides/Lincosamides:		
erythromycin	0.1	
tilmicosin	0.2	
tylosin	0.1	
lincomycin	0.1	

Hede

supervising analyst: Heather Lindsay

#### This report may not be reproduced except in full.

Primary Industries Research Victoria Werribee Centre 621 Sneydes Road Werribee VIC 3030 AUSTRALIA

#### Telephone: (+61 3) 9742 8755 Fax: (+61 3) 9742 8700 Email: scl.enquiries@dpi.vic.gov.au Internet address: www.dpi.vic.gov.au



Page: 2 of 2



## **Department of Primary Industries**

#### Certificate of Analysis

Agency: General Public SubmissionsProject: Antibiotic Analysis for Private Clients

North West Eggs PO Box 905 BROOME WA 6725 Att: Tania Devereux

Invoice Number : I17782 Work Order : 04-12-083 Work Description : Eggs (1) Number of Samples : 1 Type of Samples : Eggs Submitted by : Cheryl Hughes, Facts on Food Received : 21 December 2004 Reported : 10 January 2005

#### Sample Identification

Sample	Sample Id	Category	Collected	Ву
Number	Sample Description			
01-A	North West Eggs Laid In	EGGS		
	Broome, XL 350g Cage Eggs			

#### Results by Test

TEST	UNITS	SAMPLE # <u>01-A</u>
_Method		
Antibiotic Tissue Screen		
20158/159C		
Screen Result		NEGATIVE

Test results apply only to the sample(s) submitted for analysis.

supervising analyst: Heather Lindsay

#### This report may not be reproduced except in full.

Primary Industries Research Victoria Werribee Centre 621 Sneydes Road Werribee VIC 3030 AUSTRALIA Telephone: (+61-3) 9742 8755 Fax: (+61-3) 9742 8700 Email: scl.enquiries@dpi.vie.gov.au Internet address: www.dpi.vie.gov.au

10 January 2005



Page: 1 of 2

MILNE AgriGroup

DER LOADED (Signature)

LIVERY (Signature)

(+618) 9351 0700 🕫 elephon Facsimile (4+618) 9351 0705 ACCOUNTS Email enquiries@miline.com.au Pacsimile (08) 9356 5470 Website www.milne.com.au

SALE AND STREET STREET

Email accounts@milne.com.au

Call

Emails field

## **SALES ORDER**

Page 1 of 1

CUSTOMER	6622	DAT	23/09/2005	CUSTOMER ORDER	228
			DELIVERY INSTRUCTIONS		SALES ORDER NUMBER
NORTH WES' PICK UP WELSHPOOL	F EGGS		Wednesday, 28/0 LOADED INTO CONTA 22.5t/CONTAINER	09/2005 AINER.	28574 TRUCK SCHEDULE Container 2
PRODUCT		0	RDER INFORMATION	TRUC	SEAL NUMBER
1033	22T NORTH WEST LAYER Coarse Crumbles Product Notes: THIS FEED STUFF CONTAINS RESTRICTED ANIMAL MATERIAL - DO NOT FEED TO CATTLE - SHEEP - GOATS - DEER OR ANY OTHER RUMINANTS				
====>	Farm Notes 22T - CONTA 0T - PRICE	: AIN] \$29	ER 96/T PLUS \$105.80/T	FREIGHT	
- St	arter			HSM	8288
- fe	zd		28. 186	09.05 17:39 312 01938	0ks
			28. 186 0 0	09.05 18:40 318 40400 kg 19380 kg TR 02102	H O ka Netc
				-	
	hollo Monita	1.4	(0.0 / 2005 states and	APPN/A/	
KEN MIC	nelle Meylan	14	F70972005 ESTIMATED TIME OF	ARRIVAL	

ACTUAL TIME

DRIVER'S SIGNATURE

יובוד לקווקוניו איי

12 4

111.

# FMG Biflex® Emulsion Safety Data Sheet

An information sheet on Biflex Termiticide emulsion

This safety data sheet applies to the diluted Biflex emulsion which is prepared by adding the required volume of Biflex concentrate to the correct volume of water. If information is required on Biflex concentrate please refer to the Biflex MSDS.

Manufacturer	FMC (Chemicals) Pty Ltd.
	HAMILTON CENTRAL OLD 4007
	Phone: 07 3866 7700
	Fax: 07 3866 7777
	Emergency Response Service: 1800 033 111

## **Product Identification**

Product Name:	Biflex Termiticide Emulsion for Termite Control in all situations.
Active constituent:	0. 5 to 1.5g bifenthrin per litre of water.
Use:	For the protection of structures from subterranean termite damage and for the control of termites and spiders.

## Transport Information

UN Number	Not required - Not a Dangerous Good.
Dangerous Goods Class	Not a Dangerous Good.
Hazchem Code	Not applicable.
Packing Group	Not applicable.

### Ingredients

0.5 - 1.5 g/L.
3.8 - 11.5 g/L.
>98 %.

## **Physical Description**

Emulsion Appearance	Thin white liquid.
Emulsion Odour	Slight aromatic smell.
Leaching capabilities	Bifenthrin* is insoluble in water and binds tightly to soils, and
	therefore does not leach.
	Water Solubility <0.0001 mg/L
	Soil Binding constant $K_{\infty}$ = 1.3 x 10 ⁵ (very strong binding to soil).
Air borne residue hazard	Vapour pressure (25°C)1.81 x 10-7 mm Hg.
	Bifenthrin* has an extremely low vapour pressure therefore when
	used as directed, Biflex does not produce air borne residues.

*Bifenthrin is the active ingredient in the Biflex emulsion and is present at between 0.5 g/L and 1.5 g/L.

# FMG Biflex® Emulsion Safety Data Sheet

An information sheet on Biflex Termitidide emulsion

1

This safety data sheet applies to the diluted Biflex emulsion which is prepared by adding the required volume of Biflex concentrate to the correct volume of water. If information is required on Biflex concentrate please refer to the Biflex MSDS.

Manufacturer	FMC (Chemicals) Pty Ltd. P.O. Box 329
	HAMILTON CENTRAL QLD 4007
	Phone: 07 3866 7700
	Fax: 07 3866 7777
	Emergency Response Service: 1800 033 11

## **Product Identification**

Product Name:	Biflex Termiticide Emulsion for Termite Control in all situations.
Active constituent:	0. 5 to 1.5g bifenthrin per litre of water.
Use:	For the protection of structures from subterranean termite damage and for the control of termites and spiders.

## Transport Information

UN Number	Not required - Not a Dangerous Good.
Dangerous Goods Class	Not a Dangerous Good.
Hazchem Code	Not applicable.
Packing Group	Not applicable.

### Ingredients

Bifenthrin*	0.5 - 1.5 g/L.
Solvents	3.8 - 11.5 g/L.
Water	>98 %.

## **Physical Description**

Emulsion Appearance	Thin white liquid.
Emulsion Odour	Slight aromatic smell.
Leaching capabilities	Bifenthrin* is insoluble in water and binds tightly to soils, and
	therefore does not leach.
	Water Solubility <0.0001 mg/L
	Soil Binding constant $K_{\infty} = 1.3 \times 10^5$ (very strong binding to soil).
Air borne residue hazard	Vapour pressure (25°C)1.81 x 10-7 mm Hg.
	Bifenthrin* has an extremely low vapour pressure therefore when
	used as directed, Biflex does not produce air borne residues.

*Bifenthrin is the active ingredient in the Biflex emulsion and is present at between 0.5 g/L and 1.5 g/L.

#### CAUTION KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING



Active Constituent: 250 g/kg PERMETHRIN 25:75

GROUP 3A INSECTICIDE

A water dispersible powder residual spray for the control of a range of insect pests as per the DIRECTIONS FOR USE table.

#### **GENERAL INSTRUCTIONS**

#### Insecticide Resistance Warning

For insecticide resistance management, Coopex Residual Insecticide is a Group 3A insecticide.

Some naturally occurring insect biotypes resistant to Coopex Residual Insecticide and other Group **3A** insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if Coopex Residual Insecticide or other Group **3A** insecticides are used repeatedly. The effectiveness of Coopex Residual Insecticide on resistant individuals could be significantly reduced. Since the occurrence of resistant individuals is difficult to detect prior to use, Bayer CropScience Pty Ltd accepts no liability for any losses that may result from the failure of Coopex Residual Insecticide to control resistant insects.

Coopex Residual Insecticide may be subject to specific resistance management strategies. For further information contact your local supplier or Bayer Environmental Science representative.

#### How to Apply

Always add the powder to water at the rates given, and apply with a knapsack sprayer, bucket pump or other sprayer capable of giving a coarse spray directly onto exposed surfaces frequented by the pests. All dilutions should be applied to run off, i.e. 1 L of prepared spray per 20 - 30 m², depending on porosity of the surface to be sprayed. Prepare a fresh suspension as required. Do not store diluted insecticide.

#### Where to Apply

- Ants nests, runs, walls, drains and places where ants are seen.
- Bedbugs cracks and crevices in adjacent walls, bed frames, mattresses.
- Carpet pests infested area of carpet, particularly around edges and under furniture.
- Cockroaches walls, cupboards, skirting boards, behind sinks, stoves and pipes. Pay particular attention to cracks and crevices.
- Fleas skirting, floors and carpets, kennels, bedding and adjacent wall area.
- Spiders exposed surfaces where spiders are seen, nests and known hiding places.
- Silverfish walls, cupboards, cracks and crevices, ceiling and enclosed floor spaces.
- Houseflies, mosquitoes, biting flies all exposed surfaces where these flying insects may rest, eg, walls, ceilings, verandahs, etc.
- Hide beetles spray wet skins prior to or after racking.
- Seed treatment form a slurry of 25 g of Coopex Residual Insecticide with 100 250 mL of water. Hairy seeds need more water. Mix thoroughly with 5 kg seed in a concrete mixer or commercial seed mixer.

#### PRECAUTIONS

Do not spray the moving parts of any machinery, electric motors or switch gear with the water-based product. Avoid contact with food, food utensils, or places where food is prepared or stored. <u>Before use</u>, remove or cover all exposed foodstuffs. Cover all dishes and utensils, and places where food is prepared or stored. Remove or cover fish tanks. <u>After use</u>, thoroughly ventilate treated area. Clean up thoroughly before processing / serving resumes. Do not apply to poultry or deep litter.

#### PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

Dangerous to fish and other aquatic organisms. DO NOT contaminate streams, rivers or waterways with the chemical or used containers. Dangerous to bees and reptiles.

Page 2 of 5

POISON KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING

# STRATAGEM[®] Securable Wax Block Rodenticide

Active Constituent: 0.05 g/kg FLOCOUMAFEN

READY TO USE BAIT – KILLS IN A SINGLE FEED Controls rats and mice in and around industrial, commercial, agricultural and domestic buildings. Controls rats and mice resistant to warfarin.

TO BE USED BY LICENSED PEST CONTROL OPERATORS ONLY

# BASF

BASF Australia Ltd ABN 62 008 437 867 Norwest Business Park, 7 Maitland Place Baulkham Hills NSW 2153

10 kg

® = Registered trademark of BASF

#### READ SAFETY DIRECTIONS BEFORE OPENING OR USING



FLY BAIT

Active Constituents:

5.0 g/kg IMIDACLOPRID 1.0 g/kg (Z)-9-TRICOSENE



Ready-to-use fly bait granules for the control of adult houseflies and lesser houseflies (including organophosphate resistant strains) in commercial, industrial and domestic areas, as per the DIRECTION FOR USE

QuickBayt contains BITREX, an acutely bitter agent which reduces the possibility of accidental ingestion by children, domestic animals or wildlife.

#### **GENERAL INSTRUCTIONS**

QuickBayt can be applied in many locations. Avoid cool or windy locations because flies prefer warm sites for resting. For best results time applications to begin at the start of the season before fly populations have reached their peak.

Fly control should be considered part of an integrated strategy which incorporates good sanitation, appropriate management of breeding sites (eg. manure and other decaying organic matter) and exclusion measures for preventing access of flies into internal areas.

NOTE: This product is not attractive to all species of flies and control of non-target species may require other means of control.

#### Insecticide Resistance Warning

For insecticide resistance management, QuickBayt Fly Bait is a Group 4A insecticide.

Some naturally occurring insect biotypes resistant to QuickBayt and other Group **4A** insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if QuickBayt or other Group **4A** insecticides are used repeatedly. The effectiveness of QuickBayt on resistant individuals could be significantly reduced. Since occurrence of resistant individuals is difficult to detect prior to use, Bayer CropScience Pty Ltd accepts no liability for any losses that may result from the failure of QuickBayt to control resistant insects. For further information on managing insecticide resistance contact your local supplier or Bayer Environmental Science or Bayer Animal Health representative.

#### PRECAUTIONS

Do NOT allow contact with raw or processed food, utensils or packaging.

#### PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

Do NOT place baits in locations accessible to domestic animals, livestock or birds. Do NOT contaminate streams, rivers or waterways with the chemical or used containers. Do not scatter bait on manure heaps or dispose of treated sacks/cardboard/fabric with manure. Clean up spillage promptly. Very highly toxic to bees.

#### STORAGE AND DISPOSAL

Store in the closed, original container in a dry, cool, well-ventilated area out of direct sunlight.

#### Disposal - 350 g Pack:

Shake container empty when completing use and dispose of empty container by wrapping with paper and putting in the garbage.

Disposal - 2 Kg pack:

Triple or preferably pressure rinse containers before disposal. Dispose of rinsings in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots. If recycling replace cap and return clean containers to recycler or designated collection point. If not recycling break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit. Empty containers and product should not be burnt.

Treated sacks, cardboard or fabric may be re-used as necessary. After use they should be disposed of by wrapping in paper, placing in a plastic bag and putting in the garbage.

#### SAFETY DIRECTIONS

Will irritate eyes. Avoid contact with eyes. If product in eyes wash it out immediately with water. Wash hands after use. When using the product wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and rubber gloves. After each days use wash gloves and contaminated clothing.

#### READ SAFETY DIRECTIONS BEFORE OPENING OR USING



Active Constituent: 0.3 g/kg FIPRONIL

GROUP 2C INSECTICIDE

A gel bait for the treatment of cockroach infestations

#### **GENERAL INSTRUCTIONS**

To apply the gel, remove the cap on the nozzle and touch the tip to the surface to be treated and slowly depress plunger until sufficient gel is dispensed. Recap the dispenser after treatment is completed.

Where maintenance treatments form part of the professional pest controllers contract it is recommended that cockroach activity be monitored where gel has been applied one month after initial treatment or at more regular intervals in areas of high infestation.

#### Insecticide Resistance Warning

For insecticide resistance management Maxforce Gold Gel is a Group 2C insecticide.

Some naturally occurring insect biotypes resistant to Maxforce Gold Gel and other Group **2C** insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if Maxforce Gold Gel or other Group **2C** insecticides are used repeatedly. The effectiveness of Maxforce Gold Gel on resistant individuals could be significantly reduced. Since the occurrence of resistant individuals is difficult to detect prior to use, Bayer CropScience accepts no liability for any losses that may result from the failure of this product to control resistant insects.

Maxforce Gold Gel Insecticide may be subject to specific resistance management strategies. For further information contact your local supplier or Bayer CropScience representative.

#### PROTECTION OF LIVESTOCK, WILDLIFE, AND OTHERS

DO NOT contaminate streams, rivers or waterways with the chemical or used containers. DO NOT apply this product in any areas easily accessible to children or animals.

#### STORAGE AND DISPOSAL

Store in the closed, original container in a cool, well ventilated locked place out of the reach of children. Do not store in direct sunlight and do not store at temperatures exceeding 35°C. Dispose of empty container by wrapping in paper, placing in plastic bag and putting in the garbage.

#### SAFETY DIRECTIONS

May irritate the eyes and skin. Avoid contact with eyes and skin. Wash hands after use.

#### MATERIAL SAFETY DATA SHEET

Additional information is listed in the Material Safety Data Sheet.

#### **EXCLUSION OF LIABILITY**

This product as supplied is of a high grade and suitable for the purpose for which it is expressly intended and must be used in accordance with the directions. The user must monitor the performance of any product as climatic, geographical or biological variables and/or developed resistance may affect the results obtained. No responsibility is accepted in respect of this product, save for those non-excludable conditions implied by the Trade Practices Act or any State or Federal legislation.

Maxforce® is a registered trademark of Bayer

NRA Approval No.: 55553/0802

FOR 24 HOUR SPECIALIST ADVICE IN EMERGENCY ONLY PHONE 1800 033 111



MILNE AGRIGROUP PTY LTD ABN 92 008 919 579



103-105 Welshpool Road Welshpool, Western Australia 6106 Postal Address: Locked Bag 19 Welshpool DC, Western Australia 6986 Telephone (+618) 9351 0700 Facsimile (+618) 9351 0705 Email enquiries@milne.com.au Website www.milne.com.au 
 ORDERS

 Telephone
 (08) 9351 0727

 FreeCall
 1800 199 574

 Facsimile
 (08) 9351 0750

 Email
 orders@milne.com.au

 ACCOUNTS
 Facsimile

 Facsimile
 (08) 9356 5470

 Email
 accounts@milne.com.au

## 

CUSTOMER	6622	DATE	28/07/2005	CUSTOMER ORDER	ი
NORIH WEST DICK UP SUISRFOOL	f GC S	DELIVERY INSTRU Fr LOADED 22-3 t	CTIONS Iday, 2970 INTO CONT /CONTAINTE	772005 ATNER:	SALES ORDER NUMBER 28003 TRUCK SCHEDULE
PRODUCT		ORDER INFORMATION	1	TRUCK SE	AL NUMBER
		- 20日上巻茶 (499) 6985 - 11日 (41日) 日元千谷 11日 日元冬 (1日)	REN TONIX SELET TA NEEKSE SEE	e Alexandra VI PROBAN OVERSIA	n nyterse budet De enternet yn det
			<del>)</del> -		
		14 (A) ( (N.A.)	1 - 2 - 2	u se	
	SIP	ñ		Roberts All All All All All All All All All All	ર કુર્ય નવક કરે <b>કે ફિન્</b> નું ફિંગ નું મ
AKEN	<del>atte Mentpr</del>	- <u>.:470772005</u>	ESTIMATED TIME OF	ARRIVAL	
)RDER LOADED (Signature)			ACTUAL TIME		
>ELIVERY (Signature)			Dh .R'S SIGNATURE		

North West Egg Farm, Broome - Draft Report

## APPENDIX C

16



## Appendix I Soil Analytical Results

	منه . هو		2605	ISTER NUMBER /DP189036	
	WESTERN	AUSTRALIA	DUPLICATE EDITION N/A	DATE DUPLICATE ISSUED	
				VOLUME FO	
	UNDER THE TRANSFER	OF LAND ACT 1893	ILE	2034 68	
The person described in the fir reservations, conditions and de	st schedule is the registered proprietor of an estate i pth limit contained in the original grant (if a grant	n fee simple in the land desc ssued) and to the limitations	ribed below subje , interests, encumb	ct to the prances and	
notifications shown in the seco	nd schedule.	REGIS	Rober Trar of tit	LES CONT	
LOT 2605 ON DEPOSIT	LAND DESCR TED PLAN 189036	IPTION:			
	<b>REGISTERED PR</b> (FIRST SCHI	<b>OPRIETOR:</b> EDULE)			
TAMARAMA HOLDIN	GS PTY LTD OF 26 PROSPECT ROAD	, ARMADALE KE F972276 ) REGIST	tered 4 sep	FEMBER 1995	
LI	MITATIONS, INTERESTS, ENCUME (SECOND SCH	RANCES AND NOT	IFICATIONS		
1. G249967	MORTGAGE TO NATIONAL AUSTRA	LIA BANK LTD REC	GISTERED 9.8	.1996.	
Warning: A current search of * Any entries preced Lot as described in	the sketch of the land should be obtained where det ded by an asterisk may not appear on the current ed the land description may be a lot or location.	ail of position, dimensions o ition of the duplicate certific	or area of the lot is ate of title.	required.	
	END OF CERTIFIC	ATE OF TITLE			
The statemen	STATEME nts set out below are not intended to be nor should nd the relevant documents or for local government,	NTS: they be relied on as substitute legal, surveying or other pro	es for inspection o fessional advice.	f the land	
SKETCH OF LAND: PREVIOUS TITLE: PROPERTY STREET AI LOCAL GOVERNMEN'	2034-689. 2016-667. DDRESS: 32 FAIRWAY DR, DJUGU T AREA: SHIRE OF BROOME.	IN.			
NOTE 1: A000001A	LAND PARCEL IDENTIFIER OF BE THEREOF) ON SUPERSEDED PAP ON DEPOSITED PLAN 189036 ON CERTIFICATE OF TITLE.	ROOME TOWN LOT/I ER CERTIFICATE OF 21-SEP-02 TO ENABL	LOT 2605 (OR TITLE CHAN LE ISSUE OF A	THE PART GED TO LOT 26 A DIGITAL	
NOTE 2:	THE ABOVE NOTE MAY NOT BE OF TITLE OR ON THE CURRENT F	SHOWN ON THE SUP DITION OF DUPLIC	YERSEDED PA	APER CERTIFICA CATE OF TITLE	

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## QUALITY FARM FRESH EGGS NORTH WEST EGGS Laid in Broome Email: north

32 Fairway Drive PO Box 905 Broome WA 6725 Phone: 08 9193 6600 Fax: 08 9193 6601 Email: northwesteggs@bigpond.com

ABN 93 009 115 011

Anglican Schools Commission. P.O. Box 2520, MT CLAREMONT WA 6010.

#### ATTENTION: PETER LAURENCE

22nd June, 2005.

#### Dear Peter,

We are writing to you in respond to the questions given to us by Mr. Mike Maude. We will answer your questions to the best of our ability and our knowledge at all times.

1/ As far as we know this land has only ever been used as an egg farm – starting somewhere in the 1980's we think. We took over the business in July 1993. To get an accurate answer to this you would have to contact the Shire and review their records. Our understanding is that this land was made available to the egg farm so that they could remove the farm from its previous site at Coconut Wells. The land was only ever under a Crown Lease until we took over in 1993 and proceeded to purchase the land. I believe the official settlement of the land took place sometime in 1994.

2/ I believe the answer to this has been given in the above. Please note that I think that North West Eggs as a business has existed in Broome since the 1970's – at Coconut Wells and then Fairway Drive. The business was bankrupt when we purchased it in 1993.

3/ North West Eggs as far as we are aware has only ever operated as a egg farm.

4/ Since we have been in operation the following chemicals have been used -

Formaldehyde was used in the in some chicken sheds maybe once or twice a year from 1993 to around 2001. We stopped the use of formaldehyde after that time. No chemicals are used as disinfectants now – sheds have the manure removed and then they are hosed out.







Glyphosate is used as our herbicide to control weeds. This is only done during the period when the grass grows. We spray maybe 3 or 4 times per year around the property.

Pesticides that we use are a rodent bait, cockroach bait and a general insecticide. All chemicals that we use have to meet strict standards to be used in the food industry. We have regular pest control treatments carried out by professional pest controllers. As part of our quality assurance and HACCAP certification we have to keep a log book of all treatments, MSDS's and chemical product data information on file. This has been done since the 24/4/01 and we are happy to make these treatments logs available for your inspection.

5/ To the best of our knowledge there is no use of asbestos anywhere on the farm.

6/ There are no fuel storage facilities as such on site. Diesel fuel for the bobcat and generator is kept in 44 gallon drums.

7/ The waste products from the farm as in chicken manure and dead chickens are disposed of as follows. The manure is sold to local residents and market gardeners. The dead chickens are sold to Malcolm Douglas at the Crocodile Park and what he cannot use is taken to the local rubbish facility and buried.

8/ We have installed and upgraded all of the electrical supply since taking over the business in 1993. The only old system is on one of the caravans as far as we are aware everything else is new. For a definite answer you would need to have an electrician look at the system.

9/ The only constructions that we are aware of that were sprayed with insecticides were the house and the packing shed. They were treated for termites.

10/ Virtually all of our rubbish is taken to the local rubbish facility and what is not is burned in our rubbish hole.

11/ There is not a chemical store as such. Cleaning chemicals and animal health products are stored in the office as they are not dangerous chemicals. Other chemicals are stored in the workshop. There are very few chemicals on site and as previously stated we have to use chemicals that are compliant with our accreditation.

12/ All of the air conditioners have been installed since 1993. You would need a refrigeration mechanic to confirm what gas is in each unit. The house has two units, each caravan has one, the office has one, the staff room has one and the egg room has two units. They are all individual units and could be reused. There are also four build in cool rooms in the egg packing room.

13/ Sheds 1, 2, 3 and 4 are constructed of concrete paths, steel, corrugated iron and have side curtains made of canvacon upholstery. The brooding and rearing shed are

made of concrete floors, steel and corrugated iron. The packaging shed and workshop are made from concrete floors, steel and corrugated iron. The office, staff room and toilet are transportable buildings and we cannot tell you exactly what they are constructed of. The egg packing room is made from concrete floors, steel and corrugated iron. Any insulation used in the sheds is Agmate Styrofoam. The house is a kit home and we erected it in 1994/1995. We cannot tell you exactly what it is made of.

Please remember that we have answered these questions to the best of our ability and we cannot speak for what previous tenants of the land did in regard to waste disposal and chemical treatments. However we are more than happy to allow you access to the site for any testing purposes you may have to ascertain as to whether the land is safe for a school site.

We are also yet to be contacted by the property developers that you have arranged to do a valuation on our property at 32 Fairway Drive Broome. I spoke to the gentleman early last week and he stated that he would contact me probably early this week. I will leave it with you to follow this up with the company as they are directly employed by you not us.

We hope that the above information is of assistance to you and if we can be of any further assistance please do not hesitate to contact us.

Yours faithfully,

TANIA DEVEREUX. COMPANY DIRECTOR.



## Appendix F Historic Aerial Photographs















## Appendix G DMP Dangerous Goods FOI Search
F0 D0	Department of Consumer and Employment Protection Government of Western Australia	acce: Safet	ss to Y	docui	ments	Resources Res 303 Sev Cannin va.gov.au/Res	Safety Safety ources Safety enoaks Street gton WA 6107 ourcesSafety
(Under F	reedom of Information Act 1992; S12)				Resourc	esSafetylddod	ep.wa.gov.au
1. Appu		ther	A 1216 951				
		Given	names	ACHTON	]		
Sumanie				ASTICK			
Company	GHD PTY LTD						
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PERI	H, WA						605L
Position	ENVIRONMENTAL SCIENTIST				Reference		
hone no.	6222 8319	Mobile	0408	726843			
ax no.	6444 8319	Email	ashton	. bettiegt	id.com.au	L .	
f applicati	on is on behalf of an organisation (name	of organisa	tion/busine	ss plus full nar	ne of client if a	applicable)	
nay be con <b>2. Dang</b> <b>Dangerous</b> <b>IOTE:</b> It is rovide DGS vill do all we	ntained in the documents, we will requierous Goods storage site address (if a, Goods licence no. DGS not always possible to locate DGS licences on ou (Dangerous Goods Site) licence numbers so we reasonably can to identify whether we possess	ire a signed pplicable) ur database fro can be certair the informatio	authority	from your clic on details provid entification. How	ent to expedit ed by applicants ever, we recogn	e processir and ideally we ise this is not a	g your req e request app always possib
ddress (ir	ncluding lot and/or street number, street n	ame and su	burb) 🛶	see map			and the second
	304 + 607 3150						
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**NOTE:** If you are seeking access to dangerous goods storage documents see item 9 for types of documents held on file. If you require more space for your request description than provided above you may attach extra page/s to this application and leave this section blank.

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<ul> <li>4. Details of request</li> <li>Non-personal Application (Applications for other documents (i.e. which are non-personal in nature) require a \$30</li> </ul>	application fee)
Personal Application (No fees or charges apply for personal information or amendment of personal information al	bout yourself)
Do you have any objections to being identified as the FOI applicant to any third parties 🗌 yes 🗴 no	
5. Personal information	
Please advise if you agree to delete from the scope of your request any personal information of individu positions, signatures, contact details and identifying matter. This removes the necessity to consult with thir personal information is contained in documents, the need to claim any exemption against release of personal reduces the amount of processing time required to deal with your request.	ials, i.e. names, d parties whose onal information
NOTE: We will still need to consult third parties in relation to any commercial/business information containe	d in documents.
I do not require any "personal information" as part of my request and understand that such information from any documents released.	n will be deleted
6. Form of access required	
I wish to inspect document(s)	
I require a copy of the document(s) X yes no	
I require access in another form 🛛 yes 🕺 no (specify)	
- · · · ·	

## **FOI Applications**

- Please provide sufficient information to enable the correct document(s) to be identified. Details can be provided on a separate sheet if necessary.
- The Department may request proof of your identity.

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- If you are seeking access to a document(s) on behalf of another person, the Department will require written authorisation.
- Your application will be dealt with as soon as practicable (and, in any case, within 45 days) after it is received.
- Further information can be obtained from the Resources Safety FOI Coordinator on 9358 8156. The Freedom of Information Act is available from the State Law Publisher, 10 William Street, Perth (08 9321 7688). The Act and other information on Freedom of Information, can be viewed online at the Office of the Information Commissioner's website, www.foi.wa.gov.au.

## 8. Fees and charges

### Application fee

- The application fee for non-personal information is \$30.00, as prescribed by the regulations. A cheque/money order/cash for the appropriate amount must accompany the application.
- No application fee is payable for personal information relating to the applicant S16 [1] [d] refers.

Attached is a cheque/cash/credit card details to the amount of \$30.00 to cover the application fee. I understand that before I obtain access to a document I may be required to pay processing charges in respect of this application and that if this amount is more than \$25.00 I will be supplied with a statement of charges and given 30 days to advise if I wish to continue with my access request. (In certain cases a reduction in fees and charges may apply. If you consider you are entitled to a reduction, please submit a request with copies of supporting documentation.)

Applicant's signature

Date 🚺	9 /	0	6	/	0	9	
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## 9: Suggestions on how to frame the scope of an access request for Dangerous Goods Storage Licence (DGS) documents

DGS licence files are not publicly available and the FOI process is used to seek access to documents which allows access requests to be considered whilst providing third parties with the right to comment on release of documents.

Often applicants are not aware of what documents are in our possession but under the provisions of the Act relating to how a valid application is submitted, an applicant has an obligation to give enough information to enable the requested documents to be identified. The legislative intent of the Act depends on a properly agreed and defined scope. In terms of the provisions of the FOI Act we are required under legislation to deal with exactly those documents an applicant has requested, we have no discretionary powers to deviate from this without first obtaining agreement from the applicant, even if we believe some documents would not be of interest.

In most cases DGS licence applicants would not wish access to documents that relate to e.g. fire extinguishers, placarding requirements, changes of ownership name, requests for payment of licence fees etc. As Resources Safety has only limited resources to deal with requests from consultants for access to dangerous goods storage licence documents we have to reduce the amount of work required whilst still providing you with documents that will be of assistance. We are not able to deal with open ended requests for documents, especially if there are a lot of documents on a particular file.

The types of documents contained on dangerous goods licence files generally comprise the following:

- the current and historical copies of licences
- applications for licence to store flammable liquids/dangerous goods
- inspection reports with orders relating to underground tanks
- inspection reports with orders relating to fuel pumps
- site plans
- correspondence relating to submission and receipt of documentation
- correspondence relating to changes of ownership name
- correspondence relating to licence application/transfer fees
- correspondence relating to submission and granting of licences
- correspondence requesting administrative documentation be provided
- inspection reports with orders relating to fire extinguishers
- inspection reports with orders relating to the storage of LP gas
- inspection reports with orders relating to signage
- documentation relating to installation of LP gas

Below is an example of the wording used in requests that meet FOI Act requirements whilst also providing you with the information you seek. Many regular clients have setup application template letters for use by their staff with standard paragraphs, i.e. "We request copies of the following documents, together with any records of spills or accidents relating to dangerous goods storage at the site located at Site Address & DGS number if available". Then cut and past from the above list provided, those documents you require.

**NOTE:** You will need to keep in mind we are not necessarily able to deal with requests that include all the categories listed above. There are extensive, specific legislative processes we are required to follow prior to deciding on release of documents and we have limited resources to do it so we can only deal with those documents of particular interest to you. Please note that if access requests are too large and/or ill-defined the Act does allow us to refuse to deal with the request.



Government of Western Australia Department of Mines and Petroleum Resources Safety

Your Ref: Our Ref: Enquiries: Email: Facsimile:

08/09-344:A1068/2009/01 Ruth Pawson ruth.pawson@dmp.wa.gov.au 9358 8000

Ms S Betti Environmental Scientist GHD Pty Ltd PO Box 3106 PERTH WA 6832

CIRCU	- PE Ulatio	RTH N
	- 6 JUL 2009	
( R E F /	CEIVI ILE NO	ED)

## Dear Ms Betti

# NOTICE OF DECISION UNDER S30 FREEDOM OF INFORMATION ACT 1992 (the Act)

Your application under the Act sought access to Dangerous Goods Storage (DGS) licence documents for Lot 32 Fairway Drive, Djugan, Broome and Lot 120 Locke Street, Bilinggurr, Broome WA.

- 1. On the information you provided, a search of our records has failed to locate any documentation containing the information you seek. Under s26 of the Act, the failure of the Department to locate any documents after a diligent search is deemed as a refusal to grant access.
- Consequently, it was decided on 2 July 2009 by Zohural Hoque A/FOI Coordinator, Resources Safety (delegated decision maker by a general directive for the Director General as provided under s.100 (1) (b) of the Act) that you may not have access to these documents as the Department has no record of any such documentation.
- 3. Location descriptors provided by applicants may not always match site location details in our database and we ask if possible applicants provide the DGS Licence number of the site of interest to them. However, we recognise this is not always possible and do all we reasonably can to search for the site from the information provided.
- 4. The lack of information held by the Department in relation to this property does not necessarily mean the property is not or has ever been a dangerous goods storage site. Accordingly, if you have any reason to suspect that the property is or may have been the subject of a DGS licence you may need to consider carrying out additional investigations relating to your historical review of the site.

2/...

5. If you wish to contest the decision to refuse access to the documents, you have a right to have the decision reviewed. Details of the review process are set out in the attached notes.

Please do not hesitate to contact me on telephone 9358 8160 should you require any further information or wish to discuss this matter.

Yours sincerely

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Ruth Pawson FOI OFFICER

2 July 2009

Enc. Notes

## NOTES

## REVIEW AND APPEAL PROCESS (UNDER THE FREEDOM OF INFORMATION ACT 1992)

## Internal Review (S.39-40 and 54)

If you are dissatisfied or aggrieved by certain decisions of an agency regarding access to documents or amendment of personal information, you can apply to the agency concerned for an internal review of its decision.

To apply for an internal review, you must write a letter or fill in an internal review application form and send the letter to, or lodge the form with, the agency which made the decision within 30 days after being given notice of the decision.

The application must give details of the decision you wish to have reviewed and give an address in Australia to which notices can be sent.

There is no right to an internal review of a decision made by a Minister or the principal officer of an agency.

There is no charge for an internal review of a decision.

## External Review by the Information Commissioner (S. 65-66)

If, after an internal review has been completed, you are still dissatisfied with the agency's decision, you can make a complaint to the Information Commissioner. The Information Commissioner may allow a complaint to be made even though an internal review has not been sought or has not been completed if you can show that there are good reasons why you should not apply for an internal review or why an internal review should not be completed.

A complaint must be made by letter to the Information Commissioner, Office of the Information Commissioner, PO Box Z5386, PERTH WA 6831. The letter must give details of the decision to which the complaint relates and give an address in Australia to which notices can be sent.

If you are seeking access to documents or amendment of personal information, your complaint must be lodged within 60 days after being given written notice of the decision.

If you are a third party to an application for access to personal or commercial or business information concerning yourself, your complaint must be lodged within 30 days after being given written notice of the decision.

As a general rule, each party to a complaint pays his/her own costs. However, the Information Commissioner may order a person to pay the costs of another party to a complaint in certain circumstances.

## Appeals to the Supreme Court (S.85)

The Commissioner may refer to the Supreme Court any question of law that arises in the course of dealing with a complaint. This may be done on the Commissioner's initiative or at the request of a party to the complaint. Parties to a complaint are generally responsible for their own costs.

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# Appendix H Site Photographs





Plate 1: Former Poultry Farm – Workshop Building Pads.



Plate 2: Former Poultry Farm – Unsealed Ground Surface.





Plate 3: Former Abattoir – Stock Yards.



Plate 4: Water Corporation Enclosure – Water Tank and Pumping Equipment.





Plate 5: Water Corporation Enclosure – Cement Tank Laydown Area.



**Plate 6:** Water Corporation Enclosure – Laydown Area.





Plate 7: Water Corporation Enclosure – Mulch Stockpiles.



Plate 8: Water Corporation Enclosure – Locked Gate and Fence Surrounding Enclosure.





Plate 9: Former Camel Lease – Water Tank and Wire Fence.



Plate 10: Former Camel Lease – Burnt Area.





Plate 11: Former Camel Lease – Dumped Tyres.



Plate 12: Buckleys Road.





Plate 13: Gas pipeline road.



Plate 14: Dumped rubbish along unsealed tracks.





Plate 15: Dumped rubbish along unsealed tracks.



Plate 16: Dumped rubbish along unsealed tracks.





Plate 17: Dumped rubbish along unsealed tracks.



Plate 18: Dumped rubbish along unsealed tracks.





Plate 19: Broome Waste Management Facility Fence.



# Appendix J Soil Laboratory Certificates of Analysis



Chemical Parameter										Samp	ole ID				
GHD Sample ID	Unite	DEC (2003)	DEC (2003)	DEC (2003)	DEC (2003)	CF 1	CF 2	CF 3	CF 4	CF 5	CF 6	CF 7	CF 8	CF 9	CF 10
Laboratory ID	Units	EIL	HIL-A	HIL-E	HIL-F	30/07/2009	30/07/2009	30/07/2009	30/07/2009	30/07/2009	30/07/2009	30/07/2009	30/07/2009	30/07/2009	30/07/2009
Sampling Date						095032C-001	095032C-002	095032C-003	095032C-004	095032C-005	095032C-006	095032C-007	095032C-008	095032C-009	095032C-010
Heavy Metals															
Arsenic	mg/kg	20	100	200	500	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Cadmium	mg/kg	3	20	40	100	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.3
Cobalt	mg/kg	50	100	200	500	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	mg/kg	50	210	-		10	10	7	8	10	9	7	8	6	9
Copper	mg/kg	60	1000	2000	5000	4	4	2	28	6	7	14	33	9	10
Lead	mg/kg	300	300	600	1500	9	6	2	2	3	3	4	3	3	3
Zinc	mg/kg	200	7000	14000	35,000	100	270	37	180	31	58	220	200	71	73
ТРН															
TPH C ₆ -C ₉	mg/kg	100	-	-		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
TPH C ₁₀ -C ₁₄	mg/kg	500	-	-		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
TPH C ₁₅ -C ₂₈	mg/kg	1000	90	180	450	<10	<10	<10	<10	<10	<10	<10	<10	330	<10
TPH C ₂₉ -C ₃₆	mg/kg	-	30	100	450	<20	<20	<20	<20	<20	<20	<20	<20	390	<20
Total TPH	mg/kg	-	-	-		<20	<20	<20	<20	<20	<20	<20	<20	720	<20
PAH															
Acenaphthene	mg/kg	-	-	-		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	-	-	-		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	10	21900	-	100000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	-	-	-		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b)fluoranthene	mg/kg	-	-	-		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	mg/kg	-	-	-		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	-	-	-		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	mg/kg	1	1	2	5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	-	-	-		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	-	-	-		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	10	2290	-	30100	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Fluorene	mg/kg	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	mg/kg	5	60	-	190	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	10	-	-	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	10	2310	-	54220	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nutrients															
Phosphorus	mg/kg	-	-	-	-	270	370	330	5800	610	610	2600	6100	2200	1700
Total Nitrogen	mg/kg	-	-	-		590	1700	1000	2600	500	670	1800	2300	1800	2000

Notes

< Indicates sample concentration below the laboratory limits of reporting.

- Indicates no criteria available

EIL - Ecological Investigation Level

HIL-A - Health Investigation Level for standard residential with garden/accessible soil. HIL-E - Health Investigation Level for parks, recreational open space and playing fields, includes secondary schools.

Shading	Indicates concentration above EIL
Shading	Indicates concentration above EIL and HIL-A
Shading	Indicates concentration above EIL, HIL-A and HIL-E
Shading	Indicates concentration above EIL, HIL-A, HIL-E and HIL-F

Guidelines are derived from the Department of Environment and Convervation (2003) "Assessment Levels for Soil, Sediment and Water"



# Appendix J Soil Laboratory Certificates of Analysis

* This document is in a draft and not a final issued form. The contents of this draft document including any opinions, conclusions or recommendations contained in or which may be implied from this document must not in any way whatsoever be relied upon. GHD reserves the right, at any time with or without notice, to amend, modify or retract any part or all of the draft document including any opinions, conclusions, or recommendations contained therein. Unauthorised use of this draft document in any form whatsoever is strictly prohibited. To the maximum extent permitted by law, GHD disclaims any responsibility for liability howsoever arising from or in connection with this draft document.

# Job No :095032Client:Coffey GeotechnicsAddress:89-91 Burswood RoadBURSWOOD WA 6100

Approved Checker Gabi Glur Approved Signatory Chris Munro

Contact:	Hamish Nelson
E-mail:	hamish_nelson@coffey.com
Client Reference:	GEOTPERT08647AB 120PERT-4688
Date Sampled:	30/07/2009
Date Received:	3/08/2009
Date Reported:	17/08/2009
Sampled By:	Client
Location:	Broome

Test Method: Soil /Sediment samples analysed on an as received basis and extracted with organic solvent and analysed by gas chromatography GC-FID using external standards in accordance with MPL WILAB 7. Results expressed on a dry weight basis.



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Date Printed 31/08/2009

Job No : 095032

095032-001-DUP

CF 1

Lab Id Units LQL	External Idents	TRH mg/kg 20	C6-C9 mg/kg 10	C10-C14 mg/kg 10	C15-C28 mg/kg 10	C29-C36 mg/kg 20	Surrogate % 1
095032-001	CF 1	<20	<10	<10	<10	<20	70
095032-002	CF 2	<20	<10	<10	<10	<20	74
095032-003	CF 3	<20	<10	<10	<10	<20	72
095032-004	CF 4	<20	<10	<10	<10	<20	77
095032-005	CF 5	<20	<10	<10	<10	<20	77
095032-006	CF 6	<20	<10	<10	<10	<20	70
095032-007	CF 7	<20	<10	<10	<10	<20	79
095032-008	CF 8	<20	<10	<10	<10	<20	82
095032-009	CF 9	720	<10	<10	330	390	81
095032-010	CF 10	<20	<10	<10	<10	<20	89

<10

<20

<10

<10

<20

72

## Broome North Job No : 095032B Client: Coffey Geotechnics Address: 89-91 Burswood Road BURSWOOD WA 6100

Approved Checker Gabi Glur Approved Signatory Emma Rowe

Contact:	Hamish Nelson
E-mail:	Hamish_Nelson@coffey.com
Fax:	9347 0099
Client Reference:	GEOTPERT08647AB 120 PERT-4688
Date Sampled:	30/07/2009
Date Received:	31/07/2009
Date Reported:	17/08/2009
Sampled By:	Client
Location	Broome

Test Method: Soil/Sediment samples analysed on an as received basis by gas chromatography GC-MS in accordance with MPL WILAB 16B. Results expressed on a dry weight basis.



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Date Printed 31/08/2009

Job No :	095032B									
Lab Id	Units	LQL	095032B-001	095032B-002	095032B-003	095032B-004	095032B-005	095032B-006	095032B-007	095032B-008
External Idents			<b>CF</b> 1	CF 2	CF 3	CF 4	CF 5	CF 6	CF 7	CF 8
Analyte										
Acenanhthene	ma/ka	0 1	<01	<01	<01	<01	<0.1	<0.1	<01	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	ma/ka	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	ma/ka	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b)fluoranthene	mg/kg	0.5	<0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	< 0.5
Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate Recovery	%	1	71	73	81	80	81	79	77	77

Job No :	095032B							
Lab Id	Units	LQL	095032B-009	095032B-010	095032B-001-DUP	QC Recovery%	Blank	
External Idents			CF 9	CF 10	CF 1			
Analyte								
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	99	<0.1	
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	106	<0.1	
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	98	<0.1	
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	110	<0.1	
Benzo(b)fluoranthene	mg/kg	0.5	<0.5	<0.5	<0.5	100	<0.5	
Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	<0.5	108	<0.5	
Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	<0.5	98	<0.5	
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	99	<0.1	
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	110	<0.1	
Dibenzo(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	<0.5	79	<0.5	
Fluoranthene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	100	<0.1	
Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5	<0.5	<0.5	87	<0.5	
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	106	<0.1	
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	103	<0.1	
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	106	<0.1	
Surrogate Recovery	%	1	80	86	78			

## Broome North Job No : 095032C Client: Coffey Geotechnics Address: 89-91 Burswood Road BURSWOOD WA 6100

Approved Checker Nelly Liusnaini Hislop Approved Signatory Ben Carpenter

Contact:	Hamish Nelson
E-mail:	Hamish_Nelson@coffey.com
Fax:	9347 0099
Client Reference:	GEOTPERT08647AB 120 PERT-4688
Date Sampled:	30/07/2009
Date Received:	3/08/2009
Date Reported:	12/08/2009
Sampled By:	Client
Location:	Broome
Test Method:	Soil/sediment particles less than 2mm analysed. Anions

est Method: Soil/sediment particles less than 2mm analysed. Anions and properties analysed on a 1:5 DI extract. Metals analysis by microwave digestion (USEPA 3051), followed by ICP/AAS analysis in accordance with MPL WILAB 6, 8, 10 and 17. Results expressed on a dry weight basis.

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Job No : 095032C

Lab Id Units LQL	External Idents	Description	As mg/kg 2	Cd mg/kg 0.1	Co mg/kg 1	Cr mg/kg 1	Cu mg/kg 1	Pb mg/kg 1	Zn mg/kg 1
095032C-001	CF 1	30/07/2009	<2	0.3	<1	10	4	9	100
095032C-002	CF 2	30/07/2009	<2	0.3	<1	10	4	6	270
095032C-003	CF 3	30/07/2009	<2	0.3	<1	7	2	2	37
095032C-004	CF 4	30/07/2009	<2	0.3	<1	8	28	2	180
095032C-005	CF 5	30/07/2009	<2	0.3	<1	10	6	3	31
095032C-006	CF 6	30/07/2009	<2	0.3	<1	9	7	3	58
095032C-007	CF 7	30/07/2009	<2	0.2	<1	7	14	4	220
095032C-008	CF 8	30/07/2009	<2	0.3	<1	8	33	3	200
095032C-009	CF 9	30/07/2009	<2	0.2	<1	6	9	3	71
095032C-010	CF 10	30/07/2009	<2	0.3	<1	9	10	3	73
095032C-001-DUP	CF 1	30/07/2009	<2	0.3	<1	9	5	10	100





ENVIRONMENTAL LABORATORIES

## Certificate of Analysis

MPL Laboratory - A division of Coffey Information. PO Box 4223 VICTORIA PARK WA 6979

### Attention: Sarah Abbott

Project	09ENME0024432
Client Reference	095032D
	095032D
Order Number	03221
Received Date	05/08/2009 08:30:00 AM

Customer Sample ID Sample Matrix Labmark Sample No. Date Sampled Metals			CF1 SOIL 1662250 30/07/2009	CF2 SOIL 1662251 30/07/2009	CF3 SOIL 1662252 30/07/2009	CF4 SOIL 1662253 30/07/2009	CF5 SOIL 1662254 30/07/2009
Test/Reference	PQL	Unit					
3200 Total Metals in Soil by ICP/AES Phosphorus	5	mg/kg	270	370	330	5800	610
Inorganics Test/Reference	PQL	Unit					
4941 Total Nitrogen in Soil by Calc Total Nitrogen	10	mg N/kg	590	1700	1000	2600	500
Miscellaneous Test/Reference	PQL	Unit					
5000 Moisture Content % Moisture	1	%	<1	<1	<1	1	<1
Customer Sample ID Sample Matrix Labmark Sample No. Date Sampled			CF6 SOIL 1662255 30/07/2009	CF7 SOIL 1662256 30/07/2009	CF8 SOIL 1662257 30/07/2009	CF9 SOIL 1662258 30/07/2009	CF10 SOIL 1662259 30/07/2009
Metals Test/Reference	PQL	Unit					
3200 Total Metals in Soil by ICP/AES Phosphorus	5	mg/kg	610	2600	6100	2200	1700
Inorganics Test/Reference	PQL	Unit					
4941 Total Nitrogen in Soil by Calc							

Total Nitrogen	10	mg N/kg	670	1800	2300	1800	2000
Miscellaneous							
Test/Reference	PQL	Unit					
5000 Moisture Content							
% Moisture	1	%	1	1	1	1	1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Analysed
3200 Total Metals in Soil by ICP/AES	Melbourne 1645	07/08/2009	10/08/2009
4941 Total Nitrogen in Soil by Calc	Melbourne 1645	N/A	11/08/2009
5000 Moisture Content	Melbourne 1645	N/A	06/08/2009

First Reported: 11 August 2009 Date Printed: 11 August 2009 Labmark 1868 Dandenong Rd Clayton VIC Australia 3168 30 008 127 802 Telephone: (03) 9538 2277 Facsimile: (03) 9538 2278 Page 1 of 3 Final Report Number : 417792



## Labmark Internal Quality Control Review

### General

- 1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
- 2. Matrix spike recoveries are calculated on an 'As Received' basis; the parent sample result is moisture corrected after the % recovery is determined.
- 3. Proficiency trial results are available on request.
- 4. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
- 5. Results are uncorrected for matrix spike or surrogate recoveries.
- 6. Test samples duplicated or spiked, are for this job only and are identified in the following QC report.
- 7. SVOC analyses on waters are performed on homogenized, unfiltered sample, unless noted otherwise.
- 8. When individual results are qualified in the body of a report, refer to the qualifier descriptions that follow.
- 9. Samples were analysed on an as received basis.
- 10. This report replaces any interim results previously issued.

### **Holding Times**

Please refer to 'Sampling and Preservation Chart for Soils & Waters' for holding times. (LM-FOR-ADM-020)

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgement. If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitability qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as an RPD

## **Quality Control Results**

#### Laboratory: EN_METALS

Sample, Test, Result Reference	Units	Result 1			Acceptance	Pass Limits	Qualifying Codes
1665768 [ Method Blank ]			Į		Limito	Linito	00000
3200 Total Metals in Soil by ICP/AES							
Phosphorus	mg/kg	<5			< 5	Pass	
1663564 [ Duplicate of 1662250 ]			•				
3200 Total Metals in Soil by ICP/AES			Result 2	RPD			
Phosphorus	mg/kg	340	270	23	0-30 %	Pass	
Laboratory: EN_WATERS				•			
Sample Test Result Reference	Linito	Booult 1			Acceptance	Pass	Qualifying
	Units	Result I			Limits	Limits	Codes
1664803 [ Method Blank ]							
4300 Anions in Soil by IC							
Bromide (Soluble)	mg/kg	<2			< 2	Pass	
Chloride (Soluble)	mg/kg	<2			< 2	Pass	
Fluoride (Soluble)	mg/kg	<2			< 2	Pass	
Nitrate (Soluble)	mg/kg	<2			< 2	Pass	
Nitrite (Soluble)	mg/kg	<2			< 2	Pass	
Orthophosphorus (Soluble)	mg/kg	<2			< 2	Pass	
Sulphate (Soluble)	mg/kg	<2			< 2	Pass	
1664805 [ Laboratory Control Sample ]			-				
4300 Anions in Soil by IC	_	-	Expected Value	Percent Recovery			
Bromide (Soluble)	mg/kg	520	500.0	104	75-125 %	Pass	
Chloride (Soluble)	mg/kg	530	500.0	107	75-125 %	Pass	
Fluoride (Soluble)	mg/kg	530	500.0	107	75-125 %	Pass	
Nitrate (Soluble)	mg/kg	590	500.0	118	75-125 %	Pass	
Nitrite (Soluble)	mg/kg	490	500.0	98	75-125 %	Pass	
Orthophosphorus (Soluble)	mg/kg	500	500.0	100	75-125 %	Pass	
Sulphate (Soluble)	mg/kg	520	500.0	103	75-125 %	Pass	



### Laboratory: EN_WATERS

Ormale Test Devill Defenses	11-11-11-1	Described			Acceptance	Pass	Qualifying
Sample, Test, Result Reference	Units	Result 1			Limits	Limits	Codes
1663566 [ Spike of 1662251 ]						•	
4300 Anions in Soil by IC			Spike Value	Percent Recovery			
Nitrate (Soluble)	mg/kg	570	500.0	114	75-125 %	Pass	
Nitrite (Soluble)	mg/kg	500	500.0	99	75-125 %	Pass	
1663567 [ Spike of 1662251 ]						•	
4540 TKN in Soil by Titration	_		Spike Value	Percent Recovery		_	
Total Kjeldahl Nitrogen	mg/kg	2600	10.0	87	70-130 %	Pass	

### Sample Integrity

Custody Seals Intact (if used)	No
Attempt to Chill was evident	No
Samples correctly preserved	N/A
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	No
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

## Authorised By

Client Services Officer
Senior Analyst - Metals
Senior Analyst - Waters

#### Laboratory Manager

David Elliott

Laboratory Manager - Melbourne

Davit Ilton .

Accreditation Number: 1645 Accreditation Number: 1645

#### Final Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

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The samples were not collected by Laboratory staff.



# Appendix K Preliminary Conceptual Site Model





## GHD

GHD House, 239 Adelaide Tce. Perth, WA 6004 P.O. Box Y3106, Perth WA 6832 T: 61 8 6222 8222 F: 61 8 6222 8555 E: permail@ghd.com.au

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## **Document Status**

Rev	Author	Reviewer		Approved for Issue			
No.	Additor	Name	Signature	Name	Signature	Date	
DraftA	A. Betti	S. Staaden	*	S. Staaden	*	17/9/09	
DraftB	A. Betti	S. Staaden	*	S. Staaden	*	31/8/09	
Rev0	A. Betti	S. Staaden	*	A. Napier	*	2/10/09	

* Indicates signed copy on file.