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Mortdale Recycling Facility  
20 Hearne St, Mortdale  
State Significant Development Application  
Soil and Water Assessment

Report Number 610.14692-R4-V2.0

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Hearne Street Pty Ltd

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# Mortdale Recycling Facility

## 20 Hearne St, Mortdale

### State Significant Development Application

### Soil and Water Assessment

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#### DOCUMENT CONTROL

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- Appendix B    Existing Stormwater Drainage Plan
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- Appendix D    Proposed Erosion and Sediment Control Plan for Development
- Appendix E    Proposed Coolfog System for Dust Control

# 1 INTRODUCTION

SLR Consulting Australia Pty Ltd (SLR) was engaged by APP on behalf of its client Hearne Street Pty Ltd to conduct a Soil and Water assessment to support a State Significant Development Application in relation to the recycling facility at 20 Hearne St, Mortdale (the Site). The assessment is required to accompany an Environmental Impact Study (EIS) to be submitted to the Department of Planning and Environment for the increase in operating capacity and building amendments.

## 1.1 Site Location and Description

The site at 20 Hearne Street Mortdale is occupied and owned by Mortdale Recycling Pty Ltd and is an existing waste storage and processing facility that accepts general non-putrescible solid waste materials from domestic, municipal, commercial industrial and construction and demolition sources for the purpose of resource recovery. The site is legally identified as Lot 102 on DP 585775, 20 Hearne Street, Mortdale, New South Wales and falls within the Hurstville City Council area. The locality of the Recycling Facility at Mortdale is shown in **Figure 1**.

Waste streams received by the facility include:

- Wood Waste;
- Non Chemical manufacturing waste (metal, timber, paper, ceramics, plastics, thermosets and composites);
- Asphalt waste;
- Soils;
- Paper and cardboard;
- Glass, plastic, rubber, plasterboard, ceramics, bricks, concrete or metal;
- Household waste from municipal clean-up that does not contain food waste;
- Office and packaging waste that is not contaminated or mixed with any other type of waste;
- Building and demolition waste; and
- Virgin excavated natural material.

The site's current infrastructure consists of a number of buildings including a site office with amenities, a single weighbridge and a main shed with an attached ancillary building. The existing site plan is shown in **Figure 2**.

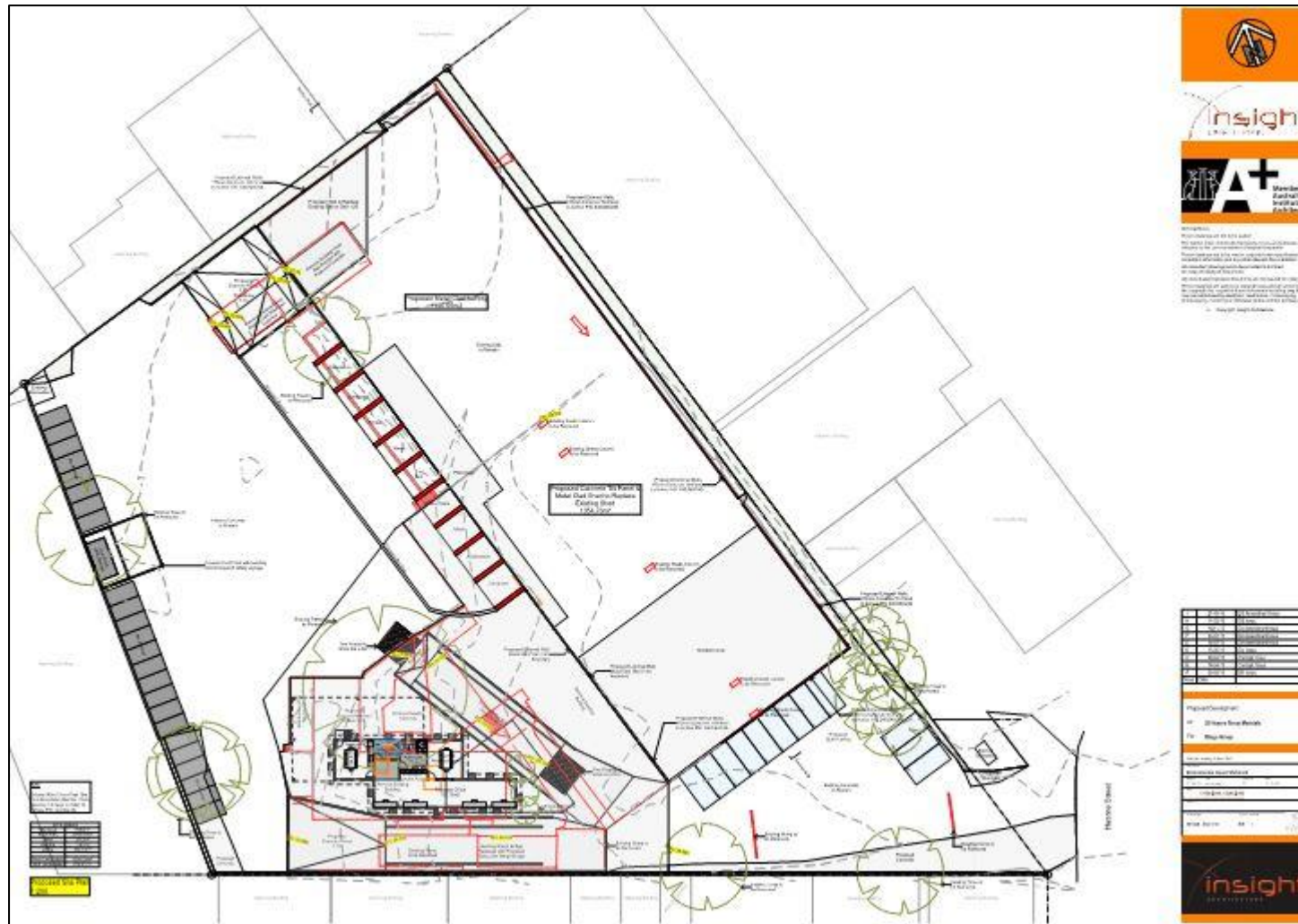


**Figure 1** Locality Plan





**Figure 2 Existing Site Plan**





## 1.2 Project Description

The proponent seeks to increase its maximum annual tonnage of general non-putrescible solid waste material from 30 000 tonnes to 300 000 tonnes per annum (tpa). Waste streams currently received by the facility will not alter, only the quantity received.

None of the following waste streams will be accepted on site:

- Asbestos;
- Liquid Wastes;
- Putrescible Wastes;
- Flammable Materials;
- Hazardous Wastes; and
- Radioactive Wastes.

Future development of the site as part of this project will include the following:

- Demolition of existing structures and earthworks as detailed on the proposed demolition plan including:
  - A 1354m<sup>2</sup> metal clad shed
  - A truck wash bay
  - An office and amenities building
  - A concrete ramp
  - Concrete pavement in poor condition
  - Removal of an existing weigh bridge
  - Removal of existing landscaping and several trees across the site
- Construction of new shed and awning with a combined area of 2551.28m<sup>2</sup> and a ridge height of 14 metres from the existing ground level. The shed and awning will house all processing operations including:
  - A processing area containing the following equipment:
    - Volvo ECR145C Excavator
    - Nissan Forklift
    - Volvo EC140C Excavator with Magnet Plant No. 909
    - Volvo L110F Wheel Loader
    - ASC Model 120 Diesel Industrial Sweeper
    - Liebherr LH22M Hydraulic Excavator
    - Komatsu 3.5 tonne Forklift Model: FD35AT-17
    - Hydraulic 900mm Magnet on Plant No. 737
    - In line screening and processing plant containing finger screens, magnets, de-stoner, picking station and associated conveyors
  - Loading, unloading and manoeuvring areas capable of accommodating up to a 15 metre articulated vehicle
  - Six (6) Material Storage Bays
- Installation of two new 20 metre weighbridges

- Provision of dedicated bin storage areas along the south western property boundary
- Installation of a refuelling point and diesel fuel storage (28 000 litres) along the south western property boundary
- Construction of an ancillary office building and staff amenities
- Construction of concrete ramps and associated retaining walls
- Reinstatement of landscaped areas
- Installation of pollution control equipment to mitigate stormwater and dust impacts

The proposed site plan is shown in **Figure 3**.

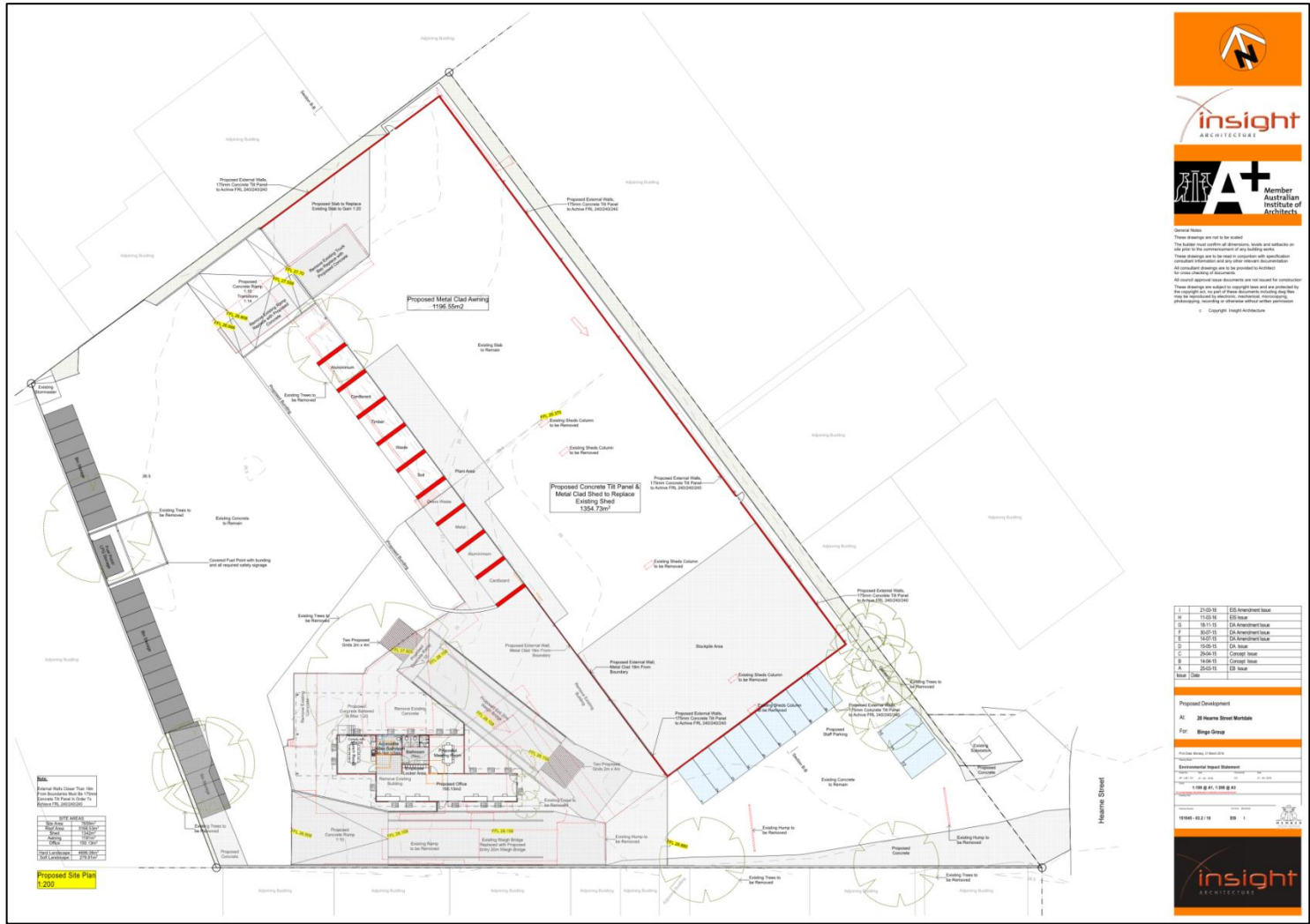
Proposed site operations include the delivery of all waste streams via the driveway crossing with Hearne Street, where they will be weighed on arrival on the 'southern' weigh bridge. The contents of trucks are also visually inspected at this point by the weigh bridge operator. Trucks will then enter into the covered shed / awning and unload. Trucks are offloaded by either tipping or through bins being tipped to remove contents wholly within the covered shed. The load is to again be inspected on the tipping floor during and after unloading to determine waste acceptability.

Covered bins containing wastes may also be temporarily stored in the designated bin storage area and moved to the processing area when operations permit processing. An example of this would involve construction waste being received outside of permitted processing hours. Under such circumstances, the bin would be covered and held in the designated bin storage area until such time as it can be moved into the shed and tipped for processing.

From time to time small quantities of unacceptable wastes, hidden within the bulk of the waste load, may be discovered. These wastes are set aside and stored in lidded bins to be transported and disposed of lawfully. Putrescible wastes, which can be food for birds and vermin, are collected and stored in vermin proof containers until lawful disposal can occur off site.

A dust suppression system, Coolfog, will be implemented onsite as part of future upgrades within the proposed sorting warehouse. The design is based on installing Coolfog lines overhead in the Warehouse, around the doorways and sprinklers across the yard. A summary of this system is provided in **Appendix E**. Water for this system will be sourced from the new 45 000L rainwater tank.

Figure 3 Proposed Site Plan



## **1.3 Purpose and Scope of Soil and Water Assessment**

### **1.3.1 Purpose**

This report addresses the Environmental Impact Assessment requirements (i.e. Protection of the Environment Operations Act 1997 (POEO Act)) associated with the land and water to support a State Significant Development Application for the recycling facility at 20 Hearne Street, Mortdale.

### **1.3.2 Scope**

The site is currently surfaced with hardstand and minimal ground works will be required as part of the proposed development. Therefore, the focus of this assessment is on surface water. A Preliminary Contaminated Land Investigation has been conducted for the site and has been reported separately in 610.14692-R17-V1.0 Phase 1 Contaminated Site Investigation, 20 Hearne Street, Mortdale, NSW, dated 14 April 2016.

The proposed scope of work included:

- Literature review;
- Review and description of the existing soil and water environment within the site and surrounding area / catchment;
- Description of existing soil and water management onsite in relation to potable water, surface water, leachate, wastewater, fuel and chemicals;
- Stormwater assessment to assess the performance of the existing and proposed stormwater management system;
- Assessment of potential soil and water impacts and recommendation of measures to mitigate the identified impacts; and
- Assessment of potential cumulative soil and water impacts.

## **1.4 Potential Impacts**

The key parts of this Project which have the potential to impact on the soil and water and environment are as follows:

- Water quality impacts associated with stormwater runoff;
- Water quality or soil quality impacts as a result of fuel and chemical spills; and
- Increased potable water usage.

## **1.5 Planning Context**

The following relevant legislation, policies and guidelines were considered as part of this Soil and Water Assessment (SWA):

- Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (2000)
- Water Management Act (2000) and Water Act (1912)
- Greater Metropolitan Region Unregulated River Water Sources (2011)
- Protection of the Environment Operations Act (1997)
- Managing Urban Stormwater: Soils & Construction (NSW Government, 2004)
- State Environmental Planning Policy (Exempt and Complying Development Codes) 2008

- State Environmental Planning Policy No.55 – Remediation of Land
- National Environmental Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) April 2011, Schedule B2, Guideline on Site Characterisation (hereafter referred to as the Amendment 1 NEPM 2013).
- National Water Quality Management Strategy, Department of Environment, Australian Government, 1992
- Available at <http://www.comlaw.gov.au/Details/F2013C00288/Download>. Last viewed on 28 June 2013.
- NSW State Rivers and Estuaries Policy, NSW Government 1993
- State Water Management Outcomes Plan (WM Act, 2000)
- Hurstville Local Environmental Plan 1994
- Georges River Regional Environmental Plan

## 2 EXISTING ENVIRONMENT

### 2.1 General description

The Site is located in an industrial area of relatively flat terrain. It is located on an irregularly shaped parcel of land approximately 100 m by 70 m in the north-south and east-west directions respectively. The ground elevation is modified to suit operations on site and it ranges from approximately 20 – 30 m within 500 m of the site.

The site description is summarised in **Table 1**.

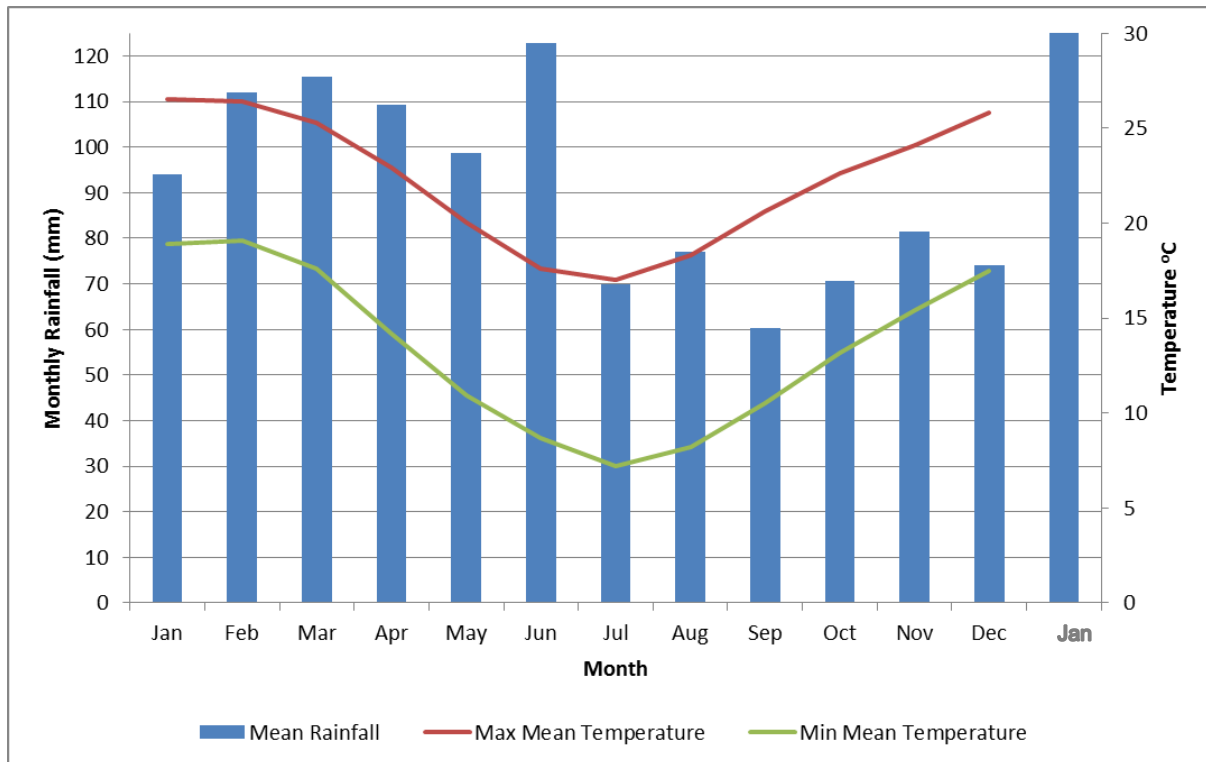
**Table 1 Mortdale facility site description**

Components	Description
Catchment and receiving watercourses	Peakhurst Industrial Area catchment and associated drainage network discharges to Lime Kiln Bay. Lime Kiln Bay is Hurstville City's largest sub-catchment of the Lower Georges River. The Georges River catchment covers an area of approximately 960 km <sup>2</sup> . Land use within the catchment includes industrial, agricultural, quarrying and mining while approximately 45% remains in natural or near natural condition.
Site buildings and surface	The site is surfaced with hardstand and contains a warehouse/shed with two adjoining buildings, one other building and a wash bay.

### 2.2 Climate

A summary of the mean rainfall and temperature statistics for the local area, obtained from the Bureau of Meteorology climate station at Sydney Airport (Site Number 066037) was used for this assessment. Data shown in **Figure 4** was available between 1929 and 2015 for rainfall and 1939 and 2015 for temperature.

**Figure 4 Local rainfall and temperature data summary**



## 2.3 Geology

The Geological Survey of NSW Sydney 1:250 000 Geological Series Sheet 9130 (Edition 1) 1983 indicates that the site is underlain by the Triassic Hawkesbury Sandstone formations which comprise medium to coarse grained quartz sandstones with some shale and laminate lenses.

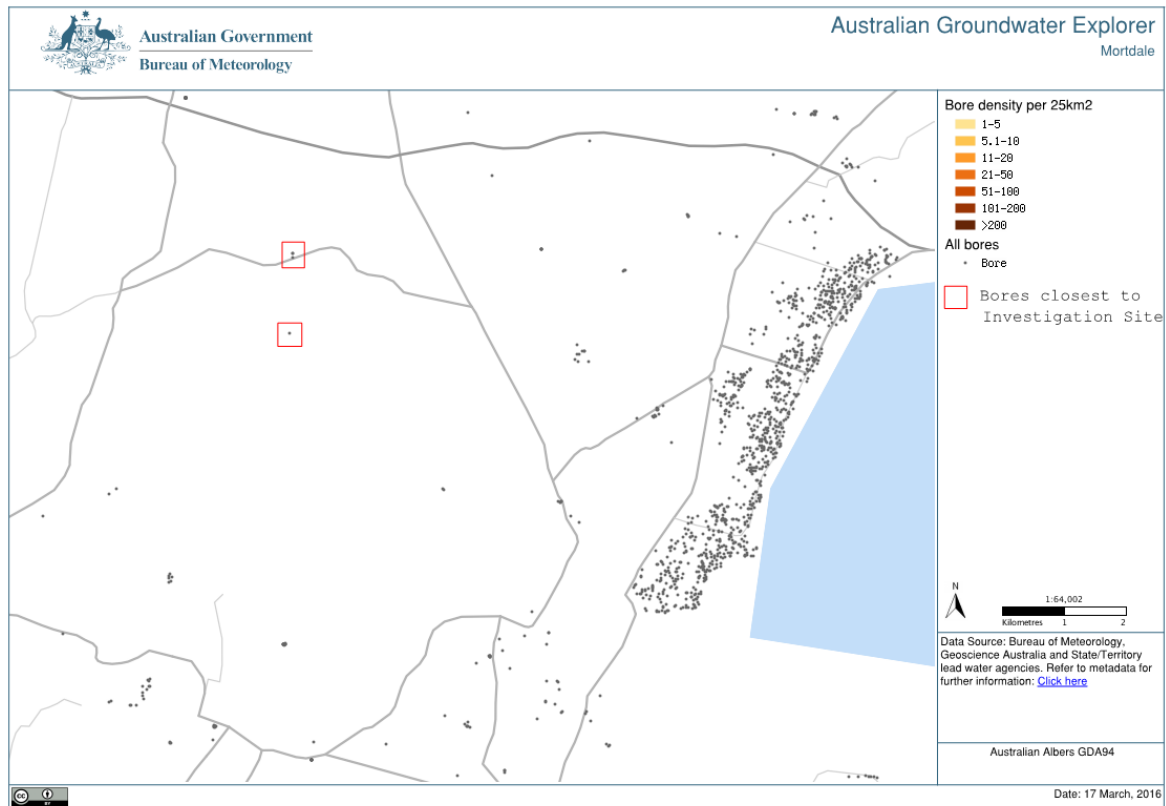
## 2.4 Hydrogeology

The Commonwealth of Australia, 1:5 000 000 Hydrogeology Map of Australia developed in 1987 indicates the Site falls within an area consisting of extensive aquifers from the Triassic Period of low-moderate productivity and is on the boundary between fresh and saline groundwater.

A search of the NSW Department of Primary Industries real-time groundwater data ([www.realtimedata.water.nsw.gov.au](http://www.realtimedata.water.nsw.gov.au)) conducted on 18 February 2016 did not reveal any real-time monitoring groundwater bores in the vicinity of the site. A search of the Australian Government Bureau of Meteorology ([www.bom.gov.au/water/groundwater](http://www.bom.gov.au/water/groundwater)) indicated there were a couple of shallow monitoring bores within 1km of the site but no information on water level or contaminant levels were available, refer to **Figure 5**.



**Figure 5 Surrounding Groundwater Bores**



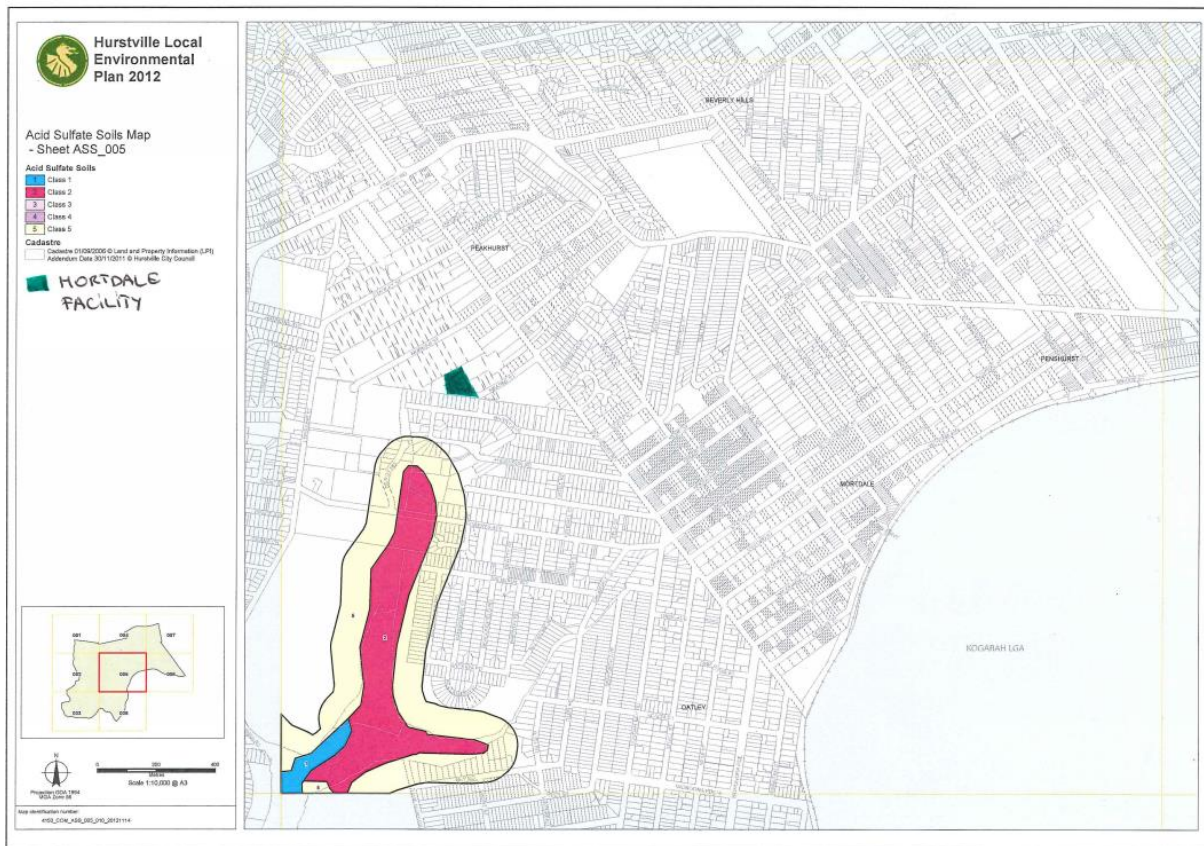
## 2.5 Soils

No intrusive investigations were undertaken as part of this investigation. Therefore the underlying soils were unable to be characterised.

The facility has an impervious surface and ground cover should not be disturbed by core operations at the facility (i.e. storing and processing waste material).

A review of Council's Acid Sulfate Soil (ASS) map indicates that ASS is unlikely to be present on-site, refer to **Figure 6**.

**Figure 6 Acid Sulfate Soil Risk**



## 2.6 Flooding

A review of the Georges River Floodplain Risk Management Study and Plan (Bewsher Consulting, 2004) indicates that the Site is not affected by Main Stream Flooding associated with the nearest watercourses including the Georges River, Salt Pan Creek or Lime Kiln Bay for the Probable Maximum Flood (PMF) event.

SLR reviewed the Draft Hurstville Overland Flood Study flood mapping (SMEC, 2015) to assess overland flooding at the site. Overland flooding is the inundation of normally dry land by local runoff rather than overbank discharge from a stream, river, estuary, lake or dam.

The flood mapping indicates that some minor overland flooding will occur within the Site during a 100 year ARI event, however the Site is not located within the main overland flood flow path. Extracts of the overland flow flood mapping are provided in **Appendix A**.

## 2.7 Local catchment

### 2.7.1 Drainage

The Mortdale facility is located within the Peakhurst Industrial Area surface water catchment. The catchment drains through the Hurstville Golf Course stormwater harvesting system to supply the golf courses irrigation system with excess flows discharged directly to Lime Kiln Bay.

**Figure 7** outlines the Peakhurst Industrial Area catchment and associated drainage network discharging to Lime Kiln Bay.



**Figure 7 Local Catchment**



### **2.7.2 Water quality**

Hurstville City Council (Council) has worked with the Cooks River Community (including other councils, Government Departments, residents and community groups) to develop strategies for urban water management, including the RiverHealth program which included sampling of Lime Kiln Bay between 2009 and 2013 in Spring and Autumn each year. The RiverHealth program produces a report card indicating waterway health. The results are summarised below:

- B (good) in 2013
- D- (poor) in 2012
- F+ (poor) in 2011
- F (poor) in 2010
- E (poor) in 2009

### **2.8 Waste Process and Storage**

All waste will be stored and processed in the proposed processing building or in covered bins. All processing activities will take place in a covered environment.

### 3 EXISTING SOIL AND WATER MANAGEMENT SYSTEM

#### 3.1 Potable Water

Potable water is currently used to supply internal amenity water and external water supply for dust suppression.

Sydney Water bills were reviewed for the Site between the period of 8 October 2014 and 7 April 2015 for potable water use. The bills indicate that 1,689 KL of water was supplied during this six month period. Therefore it is estimated that approximately 3,400 KL of water would be used annually.

No rainwater or stormwater harvesting is currently undertaken to supplement potable water use at the Site.

Based upon the predicted annual potable water usage and the predicted annual wastewater discharge (refer to Section 3.2 it is estimated that approximately 700 KL/year of water is currently used externally (i.e. does not discharge to public sewer).

#### 3.2 Wastewater Management

Wastewater from site amenities is currently discharged to the public sewer network.

It is understood that the existing but currently non-operational wash bay facility is no longer connected.

If the wash bay facility is made operational, then wastewater will be discharged to the public sewer under the licence conditions of a trade waste agreement and associated pre-treatment requirements.

Sydney Water bills were reviewed for the Site between the period of 8 October 2014 and 7 April 2015 for wastewater disposal. The bills indicate that 1,345 KL of wastewater was discharged during this six month period. Therefore it is estimated that 2,700 KL of wastewater would be discharged annually.

#### 3.3 Stormwater Management

The existing stormwater network for the site is outlined in drawings prepared by Grinsell & Johns Pty Ltd (**Appendix B**). The drawing shows that stormwater generated on site drains towards the north-west corner.

Stormwater is piped through a propriety stormwater treatment device (1200 mm diameter Rocla's *First Defence* device – refer to **Figure 8**) before discharging offsite via a 525 mm diameter pipe running south westerly.

A 150 mm high bund in the north eastern corner (refer to **Appendix B**), also confines the stormwater flows upstream of the outlet pit ensuring flows are directed through the proprietary treatment device. Once the depth of stormwater rises to 150 mm, stormwater overflows the bund and is directed south easterly through the easement between buildings to the east of the site.

Information obtained from Rocla's website (Rocla, 2015) indicates that the treatment device's primary treatment target is to trap sediment and free oils and the secondary treatment target is to trap floating gross pollutants and particulate bound nutrients. The pollutant capture zones are presented in **Figure 8** below. As detailed in **Appendix B** the device provides an additional 600 mm of depth to increase sediment storage zone capacity to 1.5m<sup>3</sup>. The devices internal bypass "prevents high flow re-suspension and washout" (Rocla, 2006b).

**Figure 8** Rocla *First Defense* Vortex Separator

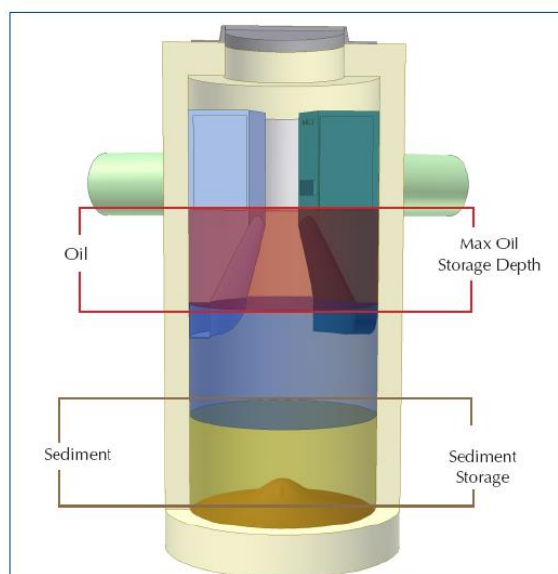


Image extracted from Rocla (2006)

### 3.4 Fuel and Chemical Management

Diesel is stored within a self bunded mobile 28,000 L fuel tank. The fuel tank is currently located undercover in the disused wash bay. Other substances (e.g. hydraulic fluid and oils) are stored in bunded drums or containers of 220 litres or less.

Operational areas of the site are entirely covered in concrete hardstand.