

Metal Recycling Facility  
Development, 45 and 23-43  
Tattersall Road, Kings Park

*Soil and Water Management Plan for  
Excavations*

Sell & Parker Pty Ltd

May 2016

0313442

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Metal Recycling Facility Development,  
45 and 23-43 Tattersall Road,  
Kings Park  
*Soil and Water Management Plan for  
Excavations*

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Environmental Resources Management Australia Pty Ltd Quality System

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# 1 INTRODUCTION

## 1.1 BACKGROUND

Sell & Parker was granted consent on 12<sup>th</sup> Nov 2015 for Development Application (DA) SSD-5041 for expansion of its current site at 45 Tattersall Road (Lot 5 /DP 7086) to include the neighbouring site 23-43 Tattersall Road (Lot 2, DP550 522). The site location is shown on *Figure 1 of Annex A*.

The proposed development includes excavation works related to expansion of the existing stormwater retention basin and installation of stormwater drainage infrastructure. As a result of the historical usage of 45 Tattersall Road, soil quality in the area of the retention basin may have been affected by hydrocarbons, metals and other chemicals present in the water draining into the basin. *Figure 2 of Annex A* shows the current site layout with the proposed drainage infrastructure concept.

## 1.2 OBJECTIVE OF THE REPORT

The purpose of this document is to comply with Condition B13 of the Conditions of Consent, which reads:

### ***Contamination***

*B13. Prior to commencing any excavation works, the Applicant shall:*

- a) identify all potential contaminants that could be disturbed, mobilised and discharged to receiving waters;*
- b) detail the procedures for testing, classifying, handling, storing and disposing of contaminated water, soils and/or groundwater encountered in excavations, in particular during excavation of the stormwater detention basin; and*
- c) detail the measures for periodically testing surface water run-off that may accumulate in excavations, and the procedures for off-site disposal of contaminated water.*

## IDENTIFICATION OF POTENTIAL CONTAMINANTS

Information on potential contaminants is available from a Phase 1 Preliminary Environmental Assessment (ERM, 2014) and a site investigation in 1995 carried out by ADI. The latter report is not available to ERM, and the information relies upon previous reporting of it in the Environmental Impact Statement for the development (ERM, 1999).

45 Tattersall Road is currently occupied by Sell & Parker's existing metal recycling site, which has been in operation since 1997. Previously the property has been used as a saw mill and timber mill from 1962, prior to which it was farmland and a dwelling (ERM, 1999).

ADI (1995a and 1995b) undertook soil investigation on the site, analysing samples for a range of metal contaminants, asbestos, polycyclic aromatic hydrocarbons (PAH) and pesticides. Concentrations of these contaminants were found to be below detection and below the current guidelines (NEPM, 1999) for soils for commercial/industrial land use (ERM, 2014).

ERM (2014) indicates three areas of the site which may contain contaminated soils, possibly connected with zinc impacts from the sawmill or the former underground storage tanks. Sell & Parker believed that these areas had been capped with a clay based fill and covered by concrete hardstand. ERM understands that the soils are not located in an area that is proposed to be disturbed by redevelopment works and as such, they are not considered to require management controls provided they are not disturbed by the works. The areas are shown on *Figure 3 of Annex A* (approximate locations).

ADI (1995b) reports the removal and validation of three underground storage tanks (USTs) previously located on-site at 45 Tattersall Road. Samples from UST excavations were tested for petroleum hydrocarbons (TRH), benzene, toluene, ethylbenzene and xylene (together BTEX). No other USTs are believed to exist at the property.

Since 1995, the metal recycling operations have the potential to have affected soils and groundwater on-site. The best evidence for the most likely contaminants is considered to be provided by the composition of stormwater held in the retention basin, which provides for a good database of chemicals present in the run-off from the site. *Table 2.1* below lists contaminants potentially present in site soils and groundwater. The area considered potentially affected is shown in *Figure 3 of Annex A*.

23-43 Tattersall Road is occupied by Dexion, who lease the property from Sell & Parker. Dexion manufactures pallet racking, industrial and office storage equipment. ERM (2014) identified a concrete lined, bunded wash down area, used for washing down painting equipment, with underground sump in the south eastern portion of the property.

Further information provided by Dexion has confirmed that the sump is concrete lined and contains wash down water comprising of water and phosphate based detergent, which is used to clean spray nozzles and risers associated with pre-treatment for painting. The sump holds approximately 16,000 L. This area was identified by ERM (2014) as the only potential location on the Dexion site where management controls for excavated soils during redevelopment would be necessary, however ERM understands that demolition and excavation of this facility is not proposed as part of the development works on the Dexion site. Its location is shown on *Figure 3*.

**Table 2.1** *Contaminants Potentially Present in Soils and Water*

Metals	Aluminium, Arsenic, Antimony, Barium, Boron, Cadmium, Chromium, Copper, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Rubidium, Strontium, Tin, Zinc
Oils and fuel	Total Recoverable Hydrocarbons (TRH), polycyclic aromatic hydrocarbons (PAH), BTEX
Other	Perfluorooctane sulphonate (PFOS) Perfluorooctanoic acid (PFOA), phosphates, nitrates

### 3.1 SOIL SAMPLING FOR WASTE CLASSIFICATION

#### 3.1.1 Sampling Procedure

Soil sampling will be conducted in accordance with the *NSW EPA (1995) Sampling Design Guidelines* and Australian Standard AS4482.1-2005 *Guide to the investigation and sampling of sites with potentially contaminated soil*.

Samples of soil for off-site disposal to a licensed landfill site must be sampled for analysis to permit classification in accordance with the NSW EPA Guidelines for Waste Classification: Part 1 Classifying Waste (2014). All soils to be disposed off site require classification regardless of the excavation location.

Soil samples shall be obtained initially at a rate of 1 sample per 25m<sup>3</sup> of soil for disposal. Reduction in the rate of sampling may be possible where consistent results are reported. Soil samples shall be selected to be representative of the material to be disposed of, and shall be taken into clean laboratory supplied containers. Filled sample containers shall be transported to a NATA accredited laboratory.

Soils shall be visually inspected for the presence of asbestos, and if suspect asbestos containing materials are identified, these shall be submitted for laboratory analysis to identify asbestos presence.

Analysis shall initially be undertaken for the list of analytes provided in Table 3.1 below. The full details of the required analysis can be obtained in Table 1 of NSW EPA Waste Classification Guidelines: Part 1.

**Table 3.1 Soil analysis for waste classification (total soil)**

Metals	Arsenic, Cadmium, Chromium (VI), Lead, Mercury, Nickel
Oils and fuel	Total Recoverable Hydrocarbons (TRH) C6-C9 and C10-C36, polycyclic aromatic hydrocarbons (sum of USEPA 16 PAH), BTEX
Other	PCBs, organochlorine pesticides, organophosphorus pesticides, volatile organic compounds

If required, TCLP analysis of samples shall also be completed in accordance with the requirements of the NSW Waste Classification Guidelines.

### 3.1.2 *Classification and Disposal*

Soils for disposal shall be classified on the basis of the inspection and sampling above. Classified soils shall be transported in accordance with NSW regulatory requirements to an appropriately licensed site.

Disposal dockets shall be obtained from the laboratory and records kept by Sell & Parker.

## 3.2 *EXCAVATION AND STOCKPILE MANAGEMENT AND SOILS HANDLING*

Excavations in the areas identified in *Figure 3* shall be managed to prevent spreading of potential contamination onto site roads or into drainage and to minimise dust generation. The following management measures will apply in addition to the Erosion and Sediment Control plan required for the development overall. The area for contamination-related management controls may be amended if results from soil analyses indicate greater or lesser extent of contamination.

- Site induction for workers undertaking excavation shall include training on potential contamination, including health and safety risks and controls to minimise exposure, and environmental management procedures.
- Excavations shall be taped off or otherwise segregated to prevent entry of unauthorised personnel and vehicles
- Temporary wheel wash shall be established for vehicles leaving the excavation
- Excavations shall be contained or bunded to prevent soils from washing out into general site drainage.
- Stormwater shall be diverted around the excavation to the extent practicable.
- Exposed soil shall be damped down to control dust if necessary.
- Vehicles transporting soils off-site shall be covered.

Stockpiles of soils from the areas identified in *Figure 3* (whether stockpiled for reuse or disposal) shall be managed such that:

- Soils shall be stockpiled in bunded or otherwise contained locations to prevent soils washing off into general site drainage.
- Soils shall be stockpiled inside the excavation area, or alternatively on hardstanding or impermeable liner to prevent contamination of soils in other areas.



- Stockpiles shall be damped or covered to minimise dust generation if necessary.
- Soils showing visible evidence of potential contamination, and/or odorous soils shall be stockpiled separately from soils that do not appear to be contaminated.

### 3.3 SOIL SAMPLING TO VALIDATE EXCAVATIONS

#### 3.3.1 *Sampling Procedure*

Following excavation works in the areas identified in *Figure 3*, and any other excavations where contamination is identified, the base and sides of the excavation shall be sampled to assess the significance of any remaining impact.

Soil sampling will be conducted in accordance with the *NSW EPA (1995) Sampling Design Guidelines* and Australian Standard AS4482.1-2005 *Guide to the investigation and sampling of sites with potentially contaminated soil*.

Excavations will be sampled at a rate of one sample every 5 linear metres for wall samples and one sample per 25 m<sup>2</sup> are for excavation bases. A minimum of two soil samples will be collected from the base of each excavation and one sample from each of the excavation walls.

In addition, excavation walls greater than 1m deep will be sampled at minimum 1m vertical intervals.

Duplicate samples for quality assurance shall be taken at a rate of 1 inter-laboratory duplicate and 1 intra-laboratory duplicate per 10 primary samples.

Samples shall be transported in cooled containers under chain of custody procedures. Samples shall be analysed by NATA accredited laboratories and limits of reporting shall be below the acceptability criteria listed in *Table 3.2* below.

#### 3.3.2 *Acceptability Criteria*

Samples for validation shall be sampled for the following list of analytes. The acceptability criteria are the NEPM (1999) criteria for commercial/industrial use. Health-based criteria are selected (not ecologically based criteria) because the site will be predominantly hard-standing and exposure to ecological receptors will not be possible. Acceptability criteria for petroleum hydrocarbons are based on direct contact exposure (ie not vapour intrusion) because ERM understands building will not be present in the excavation areas. Should buildings be planned for construction on the area being validated, HSL-D criteria for vapour intrusion shall be applied.

**Table 3.2**      *Analysis and Acceptability Criteria for Validation Samples*

<b>Analyte</b>	<b>Acceptability Criteria (NEPM 1999 HIL-D / HSL-D) (mg/kg)</b>
Arsenic	3000
Boron	300,000
Cadmium	900
Chromium (VI)	3600
Copper	240,000
Lead	1500
Manganese	60000
Mercury (total)	730
Nickel	6000
Zinc	400,000
Carcinogenic PAHs (as BaP TEQ)  (benzo(a)anthracene,      benzo(a)pyrene, benzo(b+j)fluoranthene, benzo(g,h,i)perylene,      chrysene, dibenzo(a,h)anthracene,      indeno(1,2,3- c,d)pyrene)	40
Total PAHs (sum of USEPA 16)	4000
Benzene	430
Toluene	99,000
Ethylbenzene	27,000
Xylenes	81,000
Naphthalene	11,000
TRH C6-C10	26,000
TRH >C6-C16	20,000
TRH >C16-C34	27,000

Analyte	Acceptability Criteria (NEPM 1999 HIL-D / HSL-D) (mg/kg)
TRH>C34-C40	38,000
Asbestos (visual inspection)	No visible asbestos
PFOS / PFOA	Not detected at LOR 0.005

In the event that PFOS, PFOA, 6:2 FTS or 8:2 FTS are detected, soil samples may be analysed using Australian Standard Leaching Procedure (AS 1997). The soil shall be acceptable if the sum of the above is equal or less than 1µg/L (Enrinks 2016).

### 3.4 *MANAGEMENT OF WATER IN EXCAVATIONS*

These measures shall apply to excavations in the areas identified in *Figure 3* and to any other areas that are identified as potentially contaminated. These measures shall apply in addition to the to the Erosion and Sediment Control plan required for the development overall.

Stormwater shall be prevented from running into excavations from outside the excavation area by bunding or other suitable measures.

Water that collects in excavations shall not be permitted to discharge into stormwater drainage, or otherwise exit the site into a watercourse, unless analysis demonstrates that it meets the acceptability criteria for release to stormwater (*Table 3.3* below).

Water collecting in excavations that is not suitable for discharge to stormwater shall be removed by tankering off-site to appropriate licensed disposal, discharged to sewer under a trade waste agreement, or treated on-site such that the criteria for discharge are achieved.

### 3.5 *WATER SAMPLING FOR DISPOSAL*

#### 3.5.1 *Sampling procedure*

Grab samples shall be obtained from water in excavations in accordance with AS5667.1 (1998) *Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*. Samples of water where discharge to the stormwater system is proposed shall be filtered for metals analysis.

Samples shall be taken prior to each discharge / disposal pumping event such that the acceptability of each batch of water pumped to discharge is demonstrated.

Samples shall be taken into clean laboratory supplied containers appropriate for the analysis, and transported in cooled containers under chain of custody procedures. Samples shall be analysed by a NATA accredited laboratory.

### 3.5.2 *Acceptability Criteria for Discharge*

The acceptability criteria in *Table 3.3* below apply to water discharged to the stormwater drainage or direct to surface water. For waters discharged to sewer, or tankered to off-site disposal, criteria shall be as agreed with Sydney Water or the waste disposal contractor.

**Table 3.3** *Acceptability Criteria for discharge to stormwater / surface water*

Analyte	Units	LOR	Acceptability Criteria (note metals criteria apply to filtered samples)
Oil and Grease	mg/L	5	5
pH	pH units		7-8
TSS	mg/L	5	10
Total P	mg/L	0.01	0.2
Total N	mg/L	0.5	0.5
PFOA	µg/L	0.002	0.05
PFOS	µg/L	0.002	0.05
Benzene	µg/L	1	1
Xylene (o)	µg/L	2	1
BTEX	µg/L	1	1
Total Petroleum Hydrocarbons (C6-C36)	µg/L	50	50
Naphthalene	µg/L	1	16
Aluminium	µg/L	10	55
Antimony	µg/L	1	9
Arsenic	µg/L	1	13
Barium	µg/L	1	100
Boron	µg/L	1	370
Cadmium	µg/L	0.1	1
Chromium (total)	µg/L	1	50
Copper	µg/L	1	50

Analyte	Units	LOR	Acceptability Criteria (note metals criteria apply to filtered samples)
Iron	µg/L	50	300
Lead	µg/l	1	34
Lithium	µg/l	1	10
Manganese	µg/L	1	200
Mercury	µg/L	0.1	0.6
Molybdenum	µg/L	1	1
Nickel	µg/L	1	29
Rubidium	µg/L	1	5
Strontium	µg/L	1	250
Tin	µg/L	1	3
Zinc	µg/L	5	50

1. Acceptability criteria are identical to those in the Stormwater Monitoring Plan.

**REFERENCES**

ADI Services (1995a), *Environmental Site Investigation for 45-47 Tattersall Road, Blacktown, NSW*, 3 November 1995

ADI Services (1995b), *Stage 2 Environmental Site Investigation, 45-47 Tattersall Road, Blacktown, NSW* 8 December 1995

AS5667.1 1998 *Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples.*

AS4482.1-2005 *Guide to the investigation and sampling of sites with potentially contaminated soil.*

Enrisky (2016) *Proposed Decision Tree for Prioritising Site Potentially Contaminated with PFAS*, 25 Feb 2016 for NSW EPA.

Environmental Resources Management Australia Pty Ltd (ERM), 1999, *Metal Recycling Facility at 45 Tattersall Road Kings Park, Environmental Impact Statement*, ERM, December 1999.

Environmental Resources Management Australia Pty Ltd (ERM), 2014, *Metal Recycling Facility at 45 Tattersall Road Kings Park, Phase I Environmental Site Assessment*, ERM, July 2014

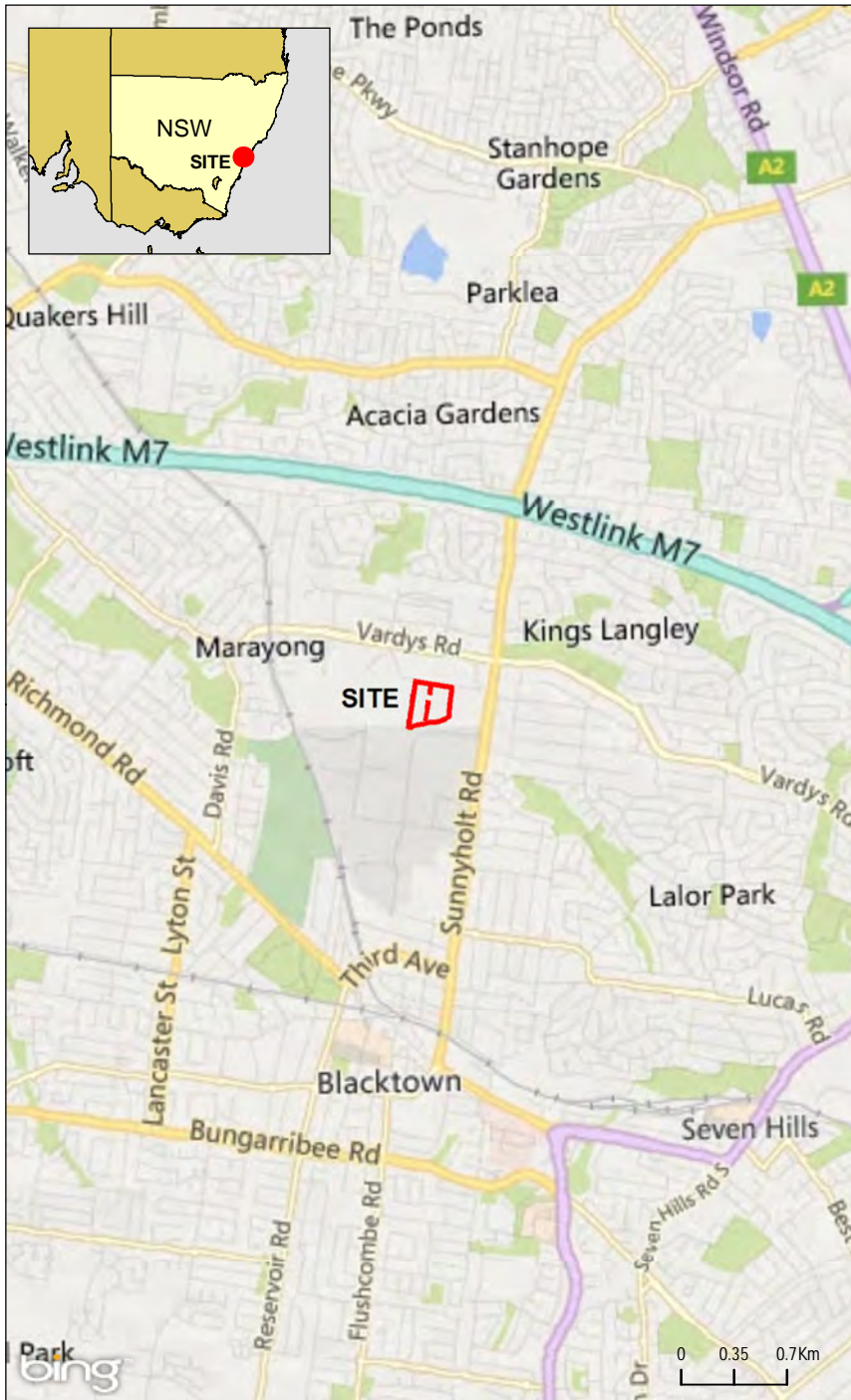
NEPM (1999) *National Environmental Protection (Assessment of Site Contamination) Measure* as amended 2013

NSW EPA (1995) *Sampling Design Guidelines*

NSW EPA (2014) *Guidelines for Waste Classification: Part 1 Classifying Waste.*

Annex A

Figures



Legend

Site Boundary

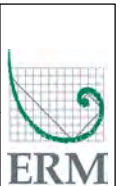
Source:  
nearmap imagery date  
5 May 2015



Client:	Sell & Parker
Drawing No:	0313442s_CMP_G001_R0.mxd
Date:	03/05/2016
Drawn By:	GC
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Figure 1 - Site Location

Soil and Water Management Plan for Excavations  
45 Tattersalls Road, Kings Park, NSW  
Environmental Resources Management ANZ  
Auckland, Brisbane, Canberra, Christchurch,  
Melbourne, Newcastle, Perth, Port Macquarie, Sydney







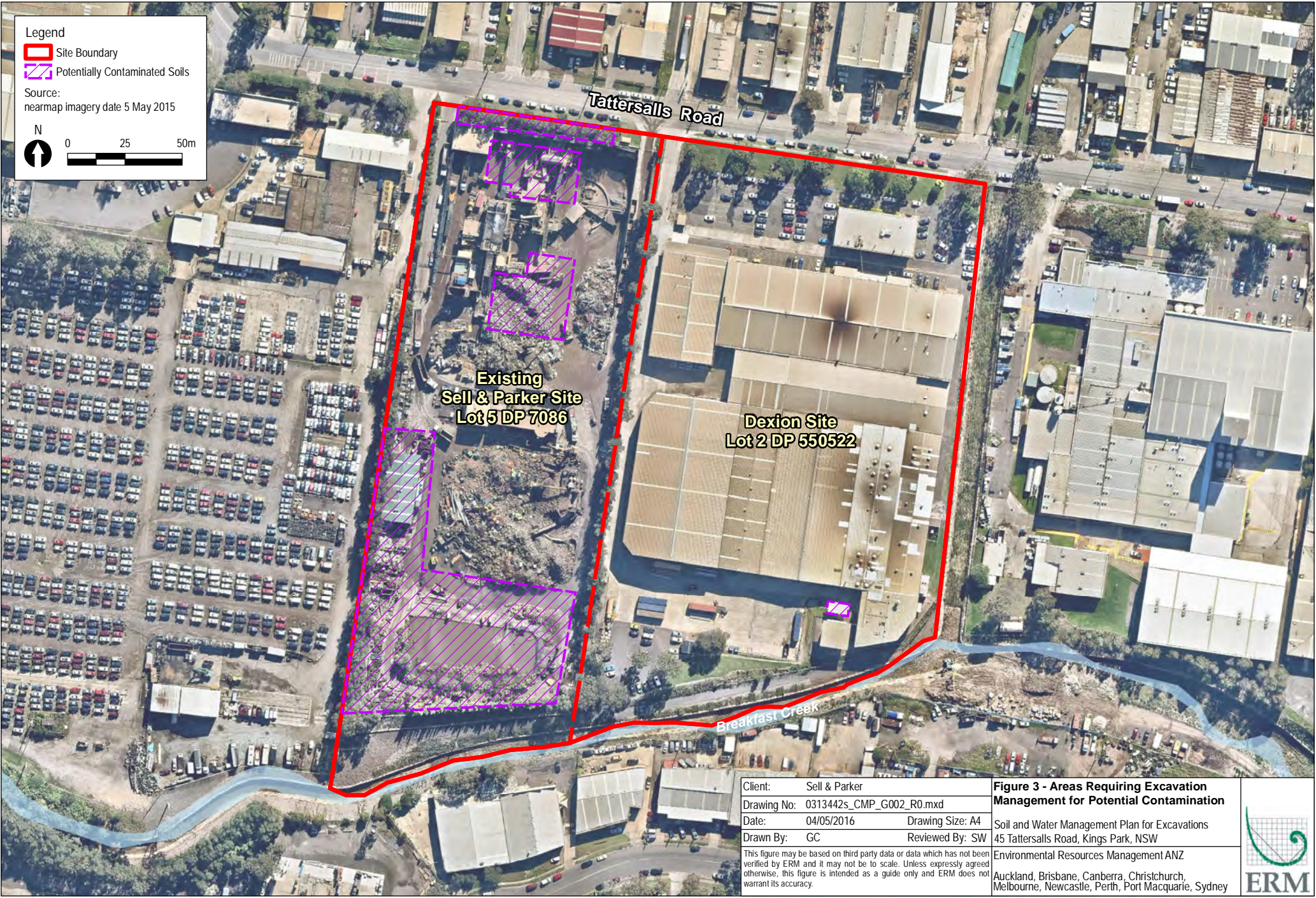
Drainage Areas	
Rooftop Drainage (Clean)	9,747.94 sqm
Hardstand Drainage (Clean)	7,120.95 sqm
Contaminated Drainage	785.70 sqm
Intermediate/Dirty Drainage	37659.47 sqm

- Legend**
- Existing Structure to Remain
  - Rooftop Drainage (Clean)
  - Discharge Locations
  - 'Dirty' Drainage (Dish Drain)
  - Existing Structure to be Removed
  - Hardstand Drainage (Clean)
  - Rain Water Tank
  - Clean Drainage (Underground - No Grates)
  - Contaminated Drainage (Pump Out/Trade Waste)
  - Ecoceptor (Primary Treatment)
  - Proposed New Structure
  - Intermediate/Dirty Drainage
  - Stormceptor (Secondary Treatment)
  - Hydrosystem - 1500 (Tertiary Treatment)

Source:  
 Algyo Zappia & Associates Pty Ltd,  
 P4144, 18/05/15.

Drawing Not to Scale

Client: Sell & Parker Pty Ltd	<b>Figure 2 - Proposed Site Layout</b>  Soil and Water Management Plan for Excavations 45 Tattersalls Road, Kings Park, NSW  Environmental Resources Management ANZ  Auckland, Brisbane, Canberra, Christchurch, Melbourne, Newcastle, Perth, Port Macquarie, Sydney	
Drawing No: 0313447s_CMP_C001_R0.cdr		
Date: 03/05/2016		
Drawn by: GC		



**Legend**

- Site Boundary
- Potentially Contaminated Soils

Source:  
nearmap imagery date 5 May 2015

N  
↑  
 0      25      50m

Client:	Sell & Parker
Drawing No:	0313442s_CMP_G002_R0.mxd
Date:	04/05/2016
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**Figure 3 - Areas Requiring Excavation Management for Potential Contamination**

Soil and Water Management Plan for Excavations  
 45 Tattersalls Road, Kings Park, NSW

Environmental Resources Management ANZ  
 Auckland, Brisbane, Canberra, Christchurch,  
 Melbourne, Newcastle, Perth, Port Macquarie, Sydney



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