Landcom

Edmondson Park, Precinct 3, Lot 3

Remedial Action Plan
Campbelltown Road, Edmondson Park NSW

16 February 2023

63325/ 149,764 (Rev 0)

JBS&G

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Abbreviations

Term	Definition
ACM	Asbestos Containing Material
AF/FA	Asbestos Fines/Fibrous Asbestos
AHD	Australian Height Datum
AMP	Asbestos Management Plan
ASS	Acid sulfate soil
B(a)P	Benzo(a)pyrene
Bgs	Below Ground Surface
BOM	Bureau of Meteorology
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
CEMP	Construction Environmental Management Plan
COPC	Contaminants of Potential Concern
CSM	Conceptual Site Model
DA	Development Application
DGI	Data Gap Investigation
DP	Deposited Plan
DQIs	Data Quality Indicators
DQOs	Data Quality Objectives
DSI	Detailed Site Investigation
EPA	Environment Protection Authority
EP&A	Environmental Planning and Assessment Regulation 2000
EIL/ESL	Ecological Investigation/Screening Level
GSW	General Solid Waste
ha	Hectare
HIL/HSL	Health Investigation/Screening Levels
JBS&G	JBS&G Australia Pty Ltd
LAA	Licensed Asbestos Assessor
LEP	Local Environmental Plan
LOR	Limit of Reporting
NATA	National Association of Testing Authority
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NSW	New South Wales
OCPs	Organochlorine Pesticide
OEH	NSW Office of Environment and Heritage (includes EPA)
PAHs	Polycyclic Aromatic Hydrocarbons
PARCCS	Precision, accuracy, representativeness, comparability, completeness and sensitivity
PASS	Potential Acid Sulfate Soils
PCBs	Polychlorinated Biphenyls
POEO Act	Protection of the Environment Operations Act 1997
QA/QC	Quality Assurance/Quality Control
RAP	Remedial Action Plan
RPD	Relative Percent Difference
SAQP	Sampling Analysis and Quality Plan
SEPP-RH	State Environmental Planning Policy (Resilience and Hazards) 2021
SWNSW	SafeWork NSW
TCLP	Toxicity Characteristic Leachate Procedure
TRH	Total Recoverable Hydrocarbons
VENM	Virgin Excavated Natural Material

1. Introduction

1.1 Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Landcom (the client) to provide environmental consultancy services for the combined contamination and geotechnical assessment for a portion of Precinct 3 of the Edmondson Park development site, located at Campbelltown Road, Edmondson Park, NSW (the site) as shown in **Figure 1**. The site is legally identified as Lots 5 and Part Lots 2 & 3 on DP1272931, totalling approximately 17.91 hectares (ha).

This site forms part of a broader land parcel formerly part of the Ingleburn Defence Site (IDS), Edmondson Park South within the Liverpool City Council local government area. The broader land parcel has previously been the subject of several environmental assessments, remediation and validation activities and a subsequent site audits (Coffey 2009[1]; AECOM 2009[2] & AECOM 2011[3]).

This report has been prepared to support a development application (DA) for the proposed subdivision of the 'investigation area' for which the concept plan indicates land will be developed for a proposed public open space landuse, excluding the areas identified for general residential lots and road reserve areas, as shown on **Figure 2**, with an approximate investigation area of 6.65 ha.

JBS&G has previously completed a number of staged site investigations, including a Detailed Site Investigation (DSI) (JBS&G 2021[4]), an additional DSI (JBS&G 2023a[5]) and a subsequent DSI Lot 3 Addendum (JBS&G 2023b[6]) which identified a number of issues of concern that will require management such that the investigation area can be considered suitable for the proposed land uses. Within the current Investigation Area, these included:

- Lead in soil, restricted to the fill material identified at one location (DG05_0-0.2, as shown on **Figure 4**), with concentrations exceeding the adopted health and ecological investigation criteria;
- The potential for ground surface areas impacted with asbestos containing material (ACM) as previously identified across the broader site. Whilst inspections have not previously identified surficial ACM within the investigation area boundaries, given the footprint is highly vegetated, there remains the potential for ACM fragments to be present given the consistent historical site use, as was observed in the adjacent non vegetated areas of the adjacent Lot 5. Limited anthropogenic material e.g., bricks, was also observed on the surface and within the fill, often associated with increased risk of further asbestos impacts;
- Stockpiles of fly tipped fill material, identified in the southern portion of the investigation area, that will require further assessment to confirm the material is considered suitable for beneficial reuse in accordance with NSW EPA guidance; and

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1 *Department of Defence Non-Statutory Site Audit Report and Site Audit Statements Defence Ingleburn Site Ingleburn NSW*. Mr Tony Scott NSW EPA Accredited Site Auditor of Coffey Environmental, ref: ENVILCOV00208AB, July 2009 (Coffey 2009)

2 *Site Audit Statement (and Report) - Defence Ingleburn Site Campbelltown Road, Ingleburn NSW*. AECOM Australia Pty Ltd, D1056701, 07 December 2009 (AECOM 2009)

3 *Site Audit Report – Defence Ingleburn Site, Campbelltown Road, Ingleburn, NSW*. AECOM Australia Pty Ltd, 60152865, 25 July 2011 (AECOM 2011).

4 *Detailed Site Investigation, Lot 5, Precinct 3 Edmondson Park Campbelltown Road, Edmondson Park, NSW*. JBS&G Australia Pty Ltd, 6 July 2021 (JBS&G 2021)

5 *Edmondson Park, Precinct 3, Lot 3 – Detailed Site Investigation, Campbelltown Road, Edmondson Park*, JBS&G Australia Pty Ltd, 63325/148,860 Rev 0, 20 January 2023 (JBS&G 2023a)

6 *Addendum DSI – Additional Investigation Open Space Land Use - Precinct 3, Edmondson Park, NSW*. JBS&G Australia Pty Ltd, 63325/149,643 (Rev A), 30 January 2023 (JBS&G 2023b)

- The potential presence of below ground ACM containing infrastructure as previously encountered across built up sections of the IDS, including redundant ACM fire hydrant/waterpipes, Telstra Pits, etc.

In accordance with the requirements of *State Environmental Planning Policy (Resilience and Hazards) 2021* (SEPP R&H, 2021), for the investigation area to be made suitable for the proposed land use, soil contaminated or otherwise aesthetically impacted with lead and asbestos will require remediation and/or management. The development site is considered a workplace under the *NSW Work Health and Safety Regulation* (WHS 2017) and, as such, asbestos containing soils or ACM on the ground surface at the site where present, will also require management to address work, health and safety (WHS) obligations.

This document presents a Remedial Action Plan (RAP) that outlines the principles of remedial/validation works required for the investigation area, that when completed, will make and demonstrate that the investigation area has been made suitable for the intended land use.

This RAP has been prepared with reference to relevant guidelines made or endorsed by the NSW Environment Protection Authority (EPA) inclusive of NEPC (2013[7]) and EPA (2020[8]), EPA (2017[9]), EPA (2022[10]) and SEPP R&H (2021).

1.2 Objectives

The objective of this RAP is to document the procedures and standards to be followed in order to remove the potential contamination risks for the proposed development such that the investigation area can be made suitable for the intended open space land use, consistent with the requirements of 'Chapter 4 Remediation of Land' in SEPP R&H 2021.

[7] *National Environment Protection (Assessment of Site Contamination) Measure, Amendment No 1 (2013)*. National Environment Protection Council (NEPC 2013)

[8] *Consultants Reporting on Contaminated Land – Contaminated Land Guidelines.* NSW EPA 2020 (EPA 2020)

[9] *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme (3rd Edition*). NSW Environment Protection Authority 2017 (EPA 2017)

[10] *Environment Protection Authority – Sampling Design Part 1 – Application – Contaminated Land Guidelines*. Environment Protection Authority, August 2022 (EPA 2022)

2. Site Condition and Surrounding Environment

2.1 Site Investigation Area Identification and Details

The site location is shown on **Figure 1**. The extent of the investigation area and associated cadastral boundaries are shown on **Figure 2**. The investigation area details are summarised in **Table 2.1** and described in detail in the following sections.

Table 2.1: Summary Investigation Area Details

Lot/Deposited Plan (DP)	Parts Lot 3 & Lot 5 DP1272931	
Address	Campbelltown Road, Edmondson Park	
Local Government Authority	Liverpool City Council	
Approximate MGA Coordinates (GDA94-MGA56)	East: 301605.858 North: 6238642.289	
Site Zoning (State Environmental Planning Policy (Precincts—Western Parkland City) 2021)	Part Lot 3 RE1: Public Recreation SP2: Infrastructure (Classified Road & Substation)	Part Lot 5 RE1: Public Recreation
Current Use	Vacant Land	
Previous Use	Former Ingleburn Defence Site	
Site Area	Approximately 6.65 ha	

2.2 Site Description

Detailed inspections of the investigation area were completed by JBS&G's trained and experienced environmental consultants on 17 August, 17-19 and 28 October and 21 December 2022. Observations of the investigation area conditions were reported in JBS&G (2023a) and JBS&G (2023b). Relevant details have been abstracted from the reports and are presented following.

The investigation area was formerly part of the Ingleburn Defence Site (IDS), and is located to the north of Campbelltown Road and the east of Zouch Road. The investigation area, being part lot 3 and the north-western part of Lot 5, is an irregular shaped parcel of land of which the northern extent is bound by vacant and vegetated land comprising the Edmondson Regional Park to the north and Zouch Road and an off-site electrical substation to the west. The southern investigation area boundary comprises Campbelltown Road and to the eastern boundary, the residual parts of Precinct 3, comprising the remainder Lot 5, being the area proposed for development as residential uses and associated roadways.

The investigation area was vacant and covered by dense vegetation including overgrown grass, shrubs and trees. Four vegetated stockpiles of material were identified in the southern portion of the investigation area, as shown on **Figure 2**. These stockpiles were identified to be between approximately 1 m and 3 m in height and range in estimated volume between approximately 100 m^3 and 180 m^3. In addition, three stockpiles of fly tipped wastes were observed in the north and north-west of the investigation area. These stockpiles were observed to contain building and green wastes. The locations of these stockpiles are presented on **Figure 2**, with their volumes estimated to range between approximately 2 m^3 and 16 m^3.

Across the investigation area, a range of residual building footprints were observed to remain as exposed concrete and tiled pads. In addition, concrete pathways remained in the proximity of these former structures. Asphalt paved roadways were also located on site, with a large hardstand area identified in the location of the former Petrol Oil and Lubricant (POL) depot along the western boundary, adjacent to the northern extent of the off-site electrical substation (**Figure 2**).

Remnants of services infrastructure were identified across the investigation area, including fire hydrants and associated hose mounts. Telegraph poles were identified parallel to roadways throughout the investigation area and in areas where historical buildings were formerly located. Remnant garden beds and retaining walls were identified to generally be of concrete, brick and/or

rock materials and were observed adjacent to remaining road pavements and historical building footprints. No standing or flowing water was observed across the investigation area at the time of inspections.

Vanguard Park was observed as a manicured lawn area in the south-west corner of the investigation area. This open space area was fenced off from public use at the time of the investigation. Fences with locked access gates extended along the southern and western extent of the investigation area. The northern and eastern boundaries of the site are not indicated on the ground within Precinct 3.

2.3 Surrounding Land Use

The surrounding land-uses of the investigation area are detailed below:

- **North**: vegetated areas of the Edmondson Regional Park and Landcom Lot 2, including the former Ingleburn Defence Site parade ground;
- **East**: Remainder of Lot 5, identified as vacant land proposed for future residential development, with MacDonald Rd and a new residential estate beyond;
- **South**: Campbelltown Rd with new residential developments and associated recreational open space / community facilities beyond. Road widening works and infrastructure improvements have recently been completed, or were in progress along Campbelltown Road; and
- **West**: An electrical substation compound in the south-west, outside the investigation area with the Zouch Rd corridor to the west of the this infrastructure. Vanguard Park manicured areas and garden beds was identified in the south-western corner of the investigation area. Beyond the road is a continuation of the Edmondson Regional Park in the north of the site with a Jehovah's Witness Church compound to the west of the balance of the investigation area.

2.4 Regional Topography and Hydrology

Review of the regional topographic information from NSW Spatial Services (Spatial Services, 2022[11]) indicated that the site is located within a gently undulating regional landscape with Zouch Road located close to a north-west to south-east orientated ridgeline. The investigation area lies at an elevation of between approximately 66 m Australian Height Datum (AHD) at the northeast site extent, and approximately 84 m AHD at the most western extent of the investigation area. The overall slope of the investigation area was towards the central east of the investigation area and towards the north. The topography drained towards an unnamed drainage line in the centre of the investigation area.

As discussed in **Section 2.1**, the investigation area was predominately surfaced with grass or shrub/tree cover, whereby it is anticipated surface water generated during periods of rainfall is likely to result in infiltration into the ground surface. In periods of heavy or prolonged rainfall, excess water is likely to result in overland flow toward the internal drainage lines within the investigation area. Some redundant street guttering and associated stormwater drainage infrastructure may remain, otherwise it is anticipated that drainage will occur in line with the investigation area topography, following which the water would flow toward the more central surface water drainage features within the Edmondson Regional Park.

This drainage line extends away from the investigation area in a north-east direction through the Regional Park and around the north of the Edmondson Park Town Centre. Regionally, this surface water feature continues through a series of formed channels in Glenfield toward Glenfield Creek

[11] *NSW Spatial Services, Department of Finance, Services & Innovation – NSW Elevation and Depth Contours*, accessed 25 August 2022, (Spatial Services, 2022)

located approximately 4 km to the north-east of the investigation area. This creek intersects with the Georges River approximately 6 km to the east of the investigation area.

2.5 Regional Geology and Soils

Review of the Penrith 1:100 000 Geological Series Sheet 9030, NSW Department of Mineral Resources, 1991 indicated the investigation area is underlain by shale, carbonaceous claystone, claystone, laminate, fine to medium-grained lithic sandstone, rare coal and tuff of the Wianamatta Group.

Reference to the online eSPADE 2.2 tool hosted by the NSW Office of Environment and Heritage (OEH 2020[12]) indicates that the investigation area is present within the Blacktown soil landscape. The Blacktown landscape generally comprises gently undulating rises on Wianamatta Group shales. Local relief to 30 m and slopes usually >5% are expected with broad rounded crests and ridges with gently inclined slopes. Natural vegetation is typically charactered as (cleared) Eucalypt woodland and tall open-forest (dry sclerophyll forest). The Blacktown soil profile is typically shallow to moderately deep (>100 cm) hard setting mottled texture contrast soils, red and brown podzolic soils on crests grading to yellow podzolic soils on lower slopes and in drainage lines. It is characterised by limitations including localised seasonal waterlogging, localised water erosion hazard, moderately reactive highly plastic subsoil, localised surface movement potential.

Details of historical subsurface investigation observations are summarised in relevant portions of **Section 3**.

2.6 Acid Sulfate Soils

Based on a review of the NSW Office of Environment and Heritage (OEH) Acid Sulfate Soils Risk database (2011 Revision[13]) there is "no known occurrence" of acid sulfate soils (ASS) identified within the investigation area or the surrounding areas.

Based on the investigation area's setting, and review of the available data sources, there is no appreciable risk of the presence of natural ASS or potential acid sulfate soils (PASS) at the investigation area and on this basis, there is no further requirement for consideration of ASS conditions and/or management of such during future ground disturbance activities.

2.7 Regional Hydrogeology

A search of the registered groundwater bores identified 1 bore within 1.5 km of the investigation area. The bore record did not include information relation to bores within this area. Within 2 km of the investigation area an additional 5 bores were identified. The relevant information from the 6 wells is summarised in **Table 2.2**.

Table 2.2: Registered Groundwater Bore Search Summary

Bore ID	Use	Standing Water Level (m bgs)	Depth (m)	Distance from Investigation Area & Direction	Lithology
GW115531	-	-	222	0.85 km northwest	-
GW105200	Domestic	13	303	1.65 km northwest	0-0.3m: Topsoil 0.3-1.5m: Clay 1.5-86m: Shale 86-298m: Sandstone 298-303m: Slate
GW111677	Monitoring	-	300	1.65 km southwest	0-89m: Shale 89-300m: Sandstone

[12] *ESPADE 2.2*. https://www.environment.nsw.gov.au/eSpade2Webapp NSW Office of Planning, Industry & Environment accessed 22 August 2022, (DPIE 2022).

[13] OEH (2021) eSPADE 2.1 *NSW Soil and Land Information. NSW Office of Environment and Heritage*, Accessed 22 August 2022 http://www.environment.nsw.gov.au/eSpade2Webapp

Bore ID	Use	Standing Water Level (m bgs)	Depth (m)	Distance from Investigation Area & Direction	Lithology
GW111676	Monitoring	-	150	1.7 km southwest	0-91m: Shale 91-150m: Sandstone
GW111675	Monitoring	-	84	1.75 km southwest	0-84m: Shale
GW113061	Monitoring	-	8.5	1.9 km southwest	0-1m: Soil 1-7m: Clay 7-8.5m: Shale

Based on the geological conditions, groundwater at the investigation area is expected to occur within the shale bedrock underlying the investigation area at variable depths, typically associated with changes in permeability at the soil-rock interface and within faults/fractures in the shale bedrock. Given the residence time and rock formation conditions, groundwater within these profiles is anticipated to be saline and non-potable. The potential for groundwater movement is likely to be low given the low permeability of the clay and shale profile.

It is anticipated that regional groundwater flow will occur towards the east-north-east and the unnamed drainage lines extending toward Glenfield ultimately moving toward the Georges River over 6 km to the east of the investigation area.

Based on review of eSPADE 2.2, the investigation area exists within the Upper South Creek Variant A Hydrogeological Landscape. Aquifers in this landscape are reportedly characterised as follows:

- Unconfined in unconsolidated alluvial sediments;
- unconfined to semi-confined along structures (bedding, joints, faults) in the fractured bedrock;
- Lateral flow occurs through alluvial sediments on slopes and plains;
- Local perching above clay-rich layers (seasonal);
- Hydraulic conductivity is moderate: 10^{-2} to 10 m/day;
- Hydraulic transmissivity if low to moderate: <2 – 20 m^2/day;
- Hydraulic gradient is gentle: <10 %;
- Groundwater is generally brackish 1.6 – >4.8 dS/m; and
- Depth to groundwater is between 2 and 6 m bgl.

Details of historical subsurface investigation observations are summarised in relevant portions of **Section 3**.

2.8 Meteorology

A review of average climatic data for the nearest Bureau of Meteorology monitoring location Bankstown Airport (BOM, 2022[14]) indicates the investigation area is located within the following meteorological setting:

- Average minimum temperatures vary from 5.2° C in July to 18.3° C in January;
- Average maximum temperatures vary from 17.4° C in July to 28.5° C in January;
- The average annual rainfall is approximately 868 mm with rainfall greater than 1 mm occurring on an average of 82.2 days per year; and

[14] *Commonwealth of Australia, 2022 Bureau of Meteorology*, http://www.bom.gov.au/climate/averages/tables/cw_066137.shtml prepared on 22 August 2022 (BOM, 2022)

- Monthly rainfall varies from 43.9 mm in July to 115 mm in March with the wettest periods occurring on average in January, February and March.

3. Site History Summary and Previous Site Investigations

As noted in **Section 1**, a range of historical environmental site investigations have previously been undertaken across the site as part of the former IDS, with more recent targeted investigation activities also completed within the subject site on behalf of Landcom. A summary of historical site use information, in addition to up to date statutory searches are discussed in the following sections.

3.1 Available Historical Documents

The following previous site assessment reports provided by Landcom to JBS&G were reviewed for this project:

- *Preliminary Geotechnical and Contamination Review, Ingleburn Defence Site*. Dames and Moore, Ref: 12343-063-070 January 1999 (D&M 1999)
- *Department of Defence Non-Statutory Site Audit Report and Site Audit Statements Defence Ingleburn Site Ingleburn NSW*. Mr Tony Scott NSW EPA Accredited Site Auditor of Coffey Environmental, ref: ENVILCOV00208AB, July 2009 (Coffey 2009);
- *Site Audit Statement (and Report) - Defence Ingleburn Site Campbelltown Road, Ingleburn NSW*. AECOM Australia Pty Ltd, D1056701, 07 December 2009 (AECOM 2009)
- *Ingleburn Defence Site Stage 3 Remediation Works Validation Report*. ERM 13 July 2011, ref: 0113181RP07_Final (ERM 2011a).
- *Development Environmental Management Plan – Ingleburn Defence Site*. ERM July 2011, ref: 0113181RP08_final (ERM 2011b).
- *Site Audit Statement (and Report) – Defence Ingleburn Site, Campbelltown Road, Ingleburn, NSW*. AECOM Australia Pty Ltd, 60152865, 25 July 2011 (AECOM 2011).
- *Clearance Certificate for Asbestos Removal, Old Nissen Hut Behind Ingleburn Heritage Military Precinct, Campbelltown Road, Edmondson Park, NSW 2174*. Safe Work & Environments Pty Ltd, 27 November 2012 (SWE 2012a).
- *Preliminary Asbestos Assessment, Ingleburn Military Heritage Precinct, Ingleburn, NSW*. Safe Work & Environments Pty Ltd, 7 December 2012 (SWE 2012b).
- *Clearance Certificate for Asbestos Removal Work, Ingleburn Military Heritage Precinct, Ingleburn, NSW*. Safe Work & Environments Pty Ltd, 11 December 2012 (SWE 2012c).
- *Detailed Site Investigation, Lot 5, Precinct 3 Edmondson Park Campbelltown Road, Edmondson Park, NSW*. JBS&G Australia Pty Ltd, 6 July 2021 (JBS&G 2021).
- *Detailed Site Investigation, Precinct 3, Lot 5 Edmondson Park Campbelltown Road, Edmondson Park*. JBS&G Australia Pty Ltd, 20 January 2023. Ref: 63325/ 148,860 (Rev 0) (JBS&G 2023a).
- *Addendum DSI – Additional Investigation Open Space Land use - Precinct 3, Edmondson Park, NSW*. JBS&G Australia Pty Ltd, 30 January 2023. Ref: JBS&G 63325/ 149,576 (Rev A) (JBS&G 2023b).

The site audit reports (Coffey 2009, AECOM 2009, and AECOM 2011) each provide a summary of the findings of the previous investigations completed by various other parties across the investigation area, inclusive of site investigation plans and summary analytical tables documenting assessment results. The Site Audit Reports provide an independent assessment by the auditor of the conduct of the investigation, results and conclusions with regard to their suitability and adequacy to meet the guidance provided by the NSW Environment Protection Authority (EPA) as in force at the time of the audit statement preparation. As such, some of the detailed information included in the original

reports reviewed by the auditor is not available for JBS&G review, however a broad understanding of site conditions has been obtained.

Copies of sample locations plans specific to each relevant report and applicable historical results from the 2008, 2011, 2021 and 2023 investigations presented in **Appendix A** for reference.

3.2 Historical Site Assessment Activities Overview

Broadly, an initial stage of site investigation/assessment activities was undertaken on behalf of the Department of Defence (DoD) that were commenced in approximately 1998 and completed around 2011. This comprised investigations of areas of the site that were considered to represent a high risk of contamination and included areas:

- Where underground storage tanks (USTs) and associated infrastructure was known to occur, or have previously occurred;
- That had been used for the storage of hazardous chemicals;
- That had been used for military training; and/or
- That had been subject to known filling or otherwise burial of waste.

Works were carried out by mainly by URS Australia Pty Ltd (URS) with the first stage of investigations resulting in a number of areas being remediated and validated as suitable for a range of potential urban redevelopment uses, depending upon the area of the site. The works completed during this first stage of the investigation were the subject of the Coffey (2009) site audit.

A second stage of site investigations was carried out by SKM Australia (SKM) between around 2008 and 2009 and comprised assessment of the balance of the IDS, including areas generally considered to have a lower risk of site contamination as a result of activities completed at the site.

The works completed during this second stage of investigation were combined with those completed in first stage to support a site RAP, prepared by Ryall Environmental Pty Ltd (RE) in 2009 (not available to JBS&G for review at the time of writing). It is understood that Frank Mohan of AECOM as an accredited Site Auditor, completed a site audit of works up to and inclusive of implementation of the RAP in 2009.

DoD commissioned Environmental Resources Management Australia (ERM) as validation environmental consultants and Synergy Resource Management (Synergy) in approximately 2010 to 2011 to undertake Stage 3 site remediation works and associated validation assessments associated with implementation of the RE (2009) RAP and document works undertaken to make the site suitable for the proposed future mix of landuses under the Landcom Concept Plan, as shown in **Appendix A1**. These works, undertaken broadly across the IDS included:

- Removal and off-site disposal of fly-tipped and identified buried waste materials;
- Building demolition and associated removal of hazardous building materials (lead and/or asbestos);
- Excavation and off-site disposal of a small number of surface soil contamination hotspots;
- Decommissioning and removal of USTs and associated infrastructure in addition to excavation and on-site treatment/off-site disposal of hydrocarbon impacted soil and rock;
- Reinstatement of resulting excavations via backfill with validated fill material or regrading and contouring of ground levels to facilitate surface water drainage.

AECOM (2011) documents the site audit prepared following the Stage 3 remediation works within the proposed Precinct 3 footprint. Upon completion of these works, AECOM agreed with ERM's conclusions that the various areas of the site could be considered suitable for the proposed land

uses, subject to ongoing implementation of a Development Environmental Management Plan (DEMP, ERM 2011b) that would apply until the completion of the proposed development works. This was designed to address the residual risk associated with unexpected finds and/or unexploded ordnance (UXO) as may be encountered during earthworks associated with the future development activities.

Subsequent to transfer of the site from the DoD to Landcom, various activities are documented to have been undertaken across portions of the IDS, including within the assessment site, including the removal of hazardous building materials from former buildings (including the Mess Hall and Lecture Theatre Area and Nissen Hut prior to demolition of these structures (as documented in the SWE advices of 2012).

Specific discussion of the outcomes of various reports are further detailed in the following sections.

3.3 Review of Historical Reports

3.3.1 D&M (1999) Preliminary Contamination Review

This assessment, prepared for DoD included a review of conditions associated with a 308 ha site known as the IDS which had been occupied by DoD since 1939 and primarily used as an infantry training camp. The objective of the review was to identify major constraints to future redevelopment and to provide a sound basis for planning of future intrusive site investigations.

D&M identified that in 1999, the current assessment site and immediate surrounds site was defined by Defence as Blocks D, E and F. The Block F infrastructure was still in use, being occupied by the Army Second Training Group, whilst the balance of current assessment site and immediate surrounds was vacant.

D&M reported the following historical land use details with regard to the IDS. Prior to 1939, the site was reported to have been a mixed of densely timbered land and rural uses, typically dairy farming. The IDS was initially established as a World War II (WWII) training and embarkation camp in October 1939, which resulted in the construction of 139 buildings across the IDS. It was reported that training activities included basic fitness, weapons and transport operations, officer training and conscript basic training.

Whilst the IDS was mostly used for infantry training, other units including artillery, engineers, transport, signals, anti-aircraft artillery, medical, services, works and ordnance were also present in some form across the IDS site.

Post WWII and prior to the Korean War (1951-54) parts of the site were reportedly leased to local farmers. During the Korean War the site was used as a major training centre after the re-introduction of National Service. Sports ovals, vehicle parking areas and larger buildings were generally constructed at IDS by 1959. Following the abolition of National Service in 1972 operations at the site were scaled down, but the majority of facilities remained active to some extent until the 1990s. Block F (Bardia Barracks area) in addition to Blocks D and E being the areas east of Zouch Rd and north of Campbelltown Rd were the headquarters of the Army Second Training Group since 1973 and so were some of the last active camp areas.

D&M review of historical imagery indicated that large blocks of barracks buildings had been constructed across Block F prior to 1947, comprising a standardized plan of parallel accommodation huts flanking central open areas. The northern most portion of the current assessment site and immediate surrounds, comprised an area of exposed/disturbed ground surrounded by vacant grassed areas. By 1961, the majority of site features north of Campbelltown Road were consistent with the 1990s layout, with collections of buildings (likely mess halls) having been constructed during the period since the late 1940s. This included the construction of the parade ground paved area and associated vehicle access roads.

By 1999, it was reported that the majority of former buildings across the broader site had been removed, with the remainder still occupied either by military units or by civilian tenants and there were many areas where illegal fly tipping had occurred.

D&M identified that potential areas of impact or activities that may have caused impacts across the IDS (incorporating the current assessment site and immediate surrounds) comprised:

- Unidentified buried waste and buried objects across the main site area;
- Unexploded ordnance (UXO);
- Small arms range (remote from the current assessment site and immediate surrounds);
- Maintenance compounds, fuel stores and workshops (including various USTs)
- Transformers and switch gear;
- The poisons shed south of Block I (remote from the current assessment site and immediate surrounds);
- The margins surrounding former site buildings that may have been impacted by lead paint particulates;
- The nursery/ground maintenance compound (remote from the current assessment site and immediate surrounds);
- Site area road margins, fence lines, parade grounds and ovals; and
- Fly tipped material around the site.

On the basis of information from one interviewee, D&M identified that historical burial of waste (landfilling) may potentially have been completed in the area to the north of Block F. The nature of the material was not known but it may have comprised general refuse from the nearby barracks. The experience of the author indicated that "localised burial of waste would probably have been conducted at locations around the site on an ad-hoc basis. Such burial is particularly likely to have occurred in raised and graded areas such as the ovals, parade grounds and some of the transport compounds".

It was expected that UXO issues on the remainder of the site, beyond the direct training areas would be limited to isolated imported artefacts.

Within the current assessment site and immediate surrounds, Block F had a Transport Compound close to the Zouch Rd boundary with a footprint of 0.39 Ha. Likely impacts if present, were expected to be associated with USTs, use of petroleum hydrocarbons, solvents and metals. The USTs would have contained diesel for motor transport or fuel oil for boilers and/or backup generators. Block F was reported to have 3 USTs, two for petrol and 1 for boiler fuel. There was a suggestion that there was also 1 boiler fuel UST within the Block D portion of the site, whilst the Block B UST infrastructure was identified to be located well to the east of the current assessment site and immediate surrounds boundary.

In addition to the transport compounds, electrical transformer units were also identified as having the potential for localised soil impacts from Total Recoverable Hydrocarbons (TRH) (and Polychlorinated Biphenyls (PCBs)) as a result of past oil spills. PCBs were reported to typically have been replaced in transformer units at the site in the late 1970s.

The D&M limited site investigation included within the current investigation area and immediate surrounds comprised one test pit (TP7) to the east of the parade ground and one testpit (TP6) in the eastern portion of the investigation area, as seen on D&M (1999) **Figure 3**, in **Appendix A2**. Several intermittent drainage channels were shown on the site plans commencing in the current assessment site and immediate surrounds and extending to the north and east respectively.

Plans provided in D&M (1999) also indicated the potential for a large incinerator to have previously been located to the north-east of Block D in the northern section of the current assessment site and immediate surrounds.

The limited subsurface investigation works documented in D&M (1999) were reported to have encountered shallow fill material at sampling locations, or alternatively clayey sand/sandy clay topsoil. The surface soils were underlain by red/orange/brown clay to depths of 0.6-1.2 m below ground surface (bgs), becoming white/grey clay from approximately 0.6 m to 1.2 – 3.0 m bgs, which was in turn underlain by shale. Some perched seepage was encountered in excavations/boreholes within the broader IDS, present within soil/fill or otherwise groundwater seepage occurred in shale, stabilizing at depths of 5.1 to 8.5 m bgs. Groundwater was expected to flow toward the east.

3.3.2 Coffey (2009) Site Audit Report

The Coffey (2009) document comprised a non-statutory audit of investigation, remediation and validation activities of limited areas of the IDS considered in D&M (1999) to have a high risk of site contamination based on historical activities. The site audit was designed to determine the nature and extent of contamination and the appropriateness of an investigation/remedial action plan.

Within the current assessment site and immediate surrounds, these high risk areas comprised:

- Block B UST area - approximately 4 m by 8 m; and
- Block F UST area – approximately 20 m and 23 m.

In addition, JBS&G also note that the SAR documented that others had completed investigation of the Sporting Field Area, situated to the north of the current assessment site and immediate surrounds, along the Zouch Rd boundary, which had been identified as a potential historical waste burial area. It was further noted that potential USTs associated with fuel storage on Kelly Road within Block F, identified as an anomaly by geophysics survey, were beyond the scope of this 2009 audit.

For the two areas above where USTs were positively identified, the USTs and associated infrastructure fill were reported to have been removed. All associated hydrocarbon impacted soil was reported to have been removed and the excavations also validated via sample collection and analysis for contaminants of concern by URS in 2003. In Block F, the hydrocarbon impact was reported to have been removed to the extent practicable as limited by the reach of the excavator, with residual soil impact remaining at the base of the excavation. The excavated material was stockpiled adjacent to each UST location and left for future assessment. Excavations were backfilled with validated stockpile backfill sand and fill material excavated from the sports field portion of the IDS (to the north of the current assessment site and immediate surrounds).

Groundwater in Block F UST area was reported to have been assessed via installation of 2 monitoring wells – one downgradient of the excavation and one through the excavation beneath the former tankpit. Significant groundwater impact was reported to not have been identified in proximity to the Block F USTs via installation of monitoring wells and subsequent analysis of collected groundwater samples.

A copy of **Figure 20B** from the Coffee (2009) Site Audit Report has been included in **Appendix A3**, showing the locations of validation samples and monitoring wells installed for the validation purposes.

At the time of the audit, features including septic tanks, pits/sumps, oil/water separators, oil drums, etc had not been removed from the IDS site and it was recommended that they should be. Further characterisation of residual hydrocarbon impact at the base of Block F excavations was also required to establish the requirements for ongoing management of the residual contamination impact.

Assessment of risk from potential asbestos containing materials across the IDS was also considered warranted by the auditor. This included high risk areas – margins of existing and previously demolished buildings, underground services and areas of fill, building rubble and waste disposal. Pieces of suspected ACM were reported to have been observed in large amounts of rubbish associated with the Block F transport compound.

Based on the auditor's review of the various reports issued by URS on the investigation, remediation and validation works completed on the high risk areas, the auditor considered that the limited areas described in the reports had been appropriately remediated and validated. However, it was acknowledged that the areas actually validated by URS were limited in extent and did not necessarily represent the whole of the sub-site in which the high risk area was located. Consequently, the auditor listed additional issues that required addressing in the sub-site where investigation, remediation and validation of high risk areas had occurred.

The issues identified in Coffey (2009) with regard to the current assessment site and immediate surrounds, or parts thereof, that required further assessment and audit included:

- Validation of impacted soil from around removed USTs including clarification of the location of stockpiled materials;
- Further assessment of residual contamination at depth in the Block F UST areas;
- Assessment of potential groundwater impact in and down gradient of UST areas; and
- An assessment for a potential UST at a fuel store on Kelly Road in Block F.

The auditor (Coffey 2009) listed outstanding possible issues for consideration during future audits, mainly related the limited areas that had been addressed in the Coffey (2009) audit not being adequate to provide a sign off of the Site as a whole. The copy of **Figure 2** from the Site Audit Report (Coffey 2009) is included at **Appendix A3** indicates the spatial extent of the IDS covered by the Coffey (2009) audit.

3.3.3 AECOM (2009) Site Audit Report

The AECOM (2009) site audit comprised an audit of investigations, remediation and validation reports completed by URS, SKM and others as completed between 2003 and 2009, as well as reviews of the Coffey (2009) audit and of the RAP (RE 2009). Figures showing the Stage II Environmental Assessment Investigation Areas has been included in **Appendix A4**. The site was reported to comprise a total footprint of 311 Ha, which for the purposes of the site assessment activities were divided by SKM during the Stage 2 investigation works into the proposed land use zones. The current assessment site and immediate surrounds fell within areas identified as areas Liverpool Council public recreational area (LRP1 comprising 10 ha), Liverpool Council residential developing communities (LRDC1, 10.7 ha) and Liverpool special uses (LSU1, 6.5 ha).

The audit report identified that significant intrusive investigation works were completed for each proposed land use area, including:

- Review of previous reports and historical aerial photographs to support the design of a site specific investigation methodology;
- Visual survey of site areas to assess potential for contamination indications, including fly tipped waste, fill areas, surface staining, etc;
- Implementation of a field investigation program, including surface and subsurface soil sampling using a drill rig or test pits and groundwater monitoring wells and subsequent laboratory analysis of samples for contaminants of potential concern;

- Assessment of the resulting data against NSW EPA endorsed land use criteria (NEPC 1999[15] and NSW EPA 1994[16]) for the proposed future land use scenario;
- Preparation of a characterisation report documenting the extent of contamination concerns, identification of potential management strategies and nominated clear conclusions on the suitability of each area for the proposed land use.

This audit report identified that Blocks D, E and F, formerly known as the Bardia Barracks were some of the first areas constructed in 1939. The barracks were used for sleeping, ablutions, mess halls, administration/offices, stores, transport compounds, recreation facilities and training.

In addition to the above, several issues identified in Coffey (2009) as issues requiring further assessment/consideration have also been addressed to the satisfaction of AECOM, including:

- The geophysical anomaly identified at the Block F fuel store (Kelly Rd) was likely associated with buried concrete, with no UST or conditions of concern identified;
- The RAP (RE 2009) has documented the requirements for further groundwater monitoring and assessment of residual soil impacts at the base of the Block F UST tankpit;
- Former material stockpiles associated with UST removal works had been validated and the materials removed or reinstated;
- Assessment of the potential for significant and/or widespread contamination from demolition of buildings containing hazardous materials and/or fly tipping, etc has not identified a significant issue, RAP documented procedures for the removal of fly tipped material during site works; and
- A site wide groundwater investigation was completed to close out the potential risks to human health and/or the environment from groundwater contaminant migration.

The types of contamination identified in the subsequent RAP to require further remediation and/or management comprised (across the broader IDS site):

- Fly tipped waste;
- Fragments of bonded and friable asbestos/ACM in surface soils;
- Heavy metal, PAH and petroleum (TPH) contamination in soils; and
- TPH contamination in groundwater in the vicinity of several former USTs (including Block F).

The RAP also identified the need for development and implementation of a Development Environmental Management Plan (DEMP) to manage the possible identification of small scale unexpected features as may be encountered between completed sampling locations given the long history of use by DoD. It was noted that inground features including asphaltic concrete pavements, sewerage systems, septic tanks, grease pits etc were only required to be removed during remedial works if it was required to access contaminated materials, otherwise such items would typically be removed during future development works.

The AECOM SAS (AECOM 2009) comprising a Part B SAS, certified that:

- “the nature and extent of the contamination HAS been appropriately determined; and
- the remedial action plan IS appropriate for the purpose stated above; and

[15] *National Environment Protection (Assessment of Site Contamination) Measure* NEPC (1999)
[16] *Guidelines for Assessing Service Station Sites, sensitive land use criteria for TPH and BTEX* (NSW EPA 1994)

- Provided the site is remediated in accordance with the RAP (RE 2009), the site CAN BE MADE SUITABLE for the following uses:
    - Residential with accessible soil, including gardens (less than 10 % fruit and vegetable contributed to intake) excluding poultry;
    - Day care centre, preschool, primary school;
    - Residential with minimal opportunity for soil access, including units;
    - Secondary school;
    - Park, recreational open space, playing field;
    - Commercial/industrial; and
    - National Park/Nature Reserve".

It is noted that the AECOM (2009) SAS did not certify that the Site was suitable for any particular use, only that it could be made suitable, provided certain conditions (i.e. implementation and compliance with the requirements of the RAP (RE 2009)) were met.

In his overall comments, the auditor generally concurred with the conclusions presented in the investigation, remediation and validation reports reviewed and with those in the previous site audit report (Coffey 2009) and the RAP (RE 2009). The auditor also concurred with the recommendations in those documents and noted that some of the issues raised in the Coffey (2009) audit report had not been addressed during the more recent 'Stage 2' investigation works, and so were required to be addressed during future remediation and validation works to be conducted at the Site.

3.3.4 AECOM (2011) Site Audit Report

The AECOM (2011) site audit comprised an independent audit of investigation, remediation and validation works referred to as Stage 3 works undertaken at the IDS site as undertaken by ERM as consultant, Synergy as remediation contractor and G-tek Australia Pty Ltd (G-tek) as unexploded ordnance (UXO) contractor respectively . The current assessment site falls entirely within the site extent the subject of this audit. Figures showing the Stage 3 Environmental Assessment Investigation Areas has been included in **Appendix A5.** The objective of the audit was to review the Stage 3 validation documentation and establish whether the IDS could be considered suitable for the various proposed land use scenarios as defined by the adopted masterplan land use zones.

The Stage 2 works as discussed in the AECOM (2009) audit included a largely systematic sampling and analysis program across the IDS site. These works identified a number of contamination 'hotspots', primarily comprising surface and near surface fill/soils impacted with heavy metals (lead and arsenic), TPH and/or ACM which required additional assessment and/or remediation. The remedial actions, in addition to clean up of identified fly tipped waste, further investigation of groundwater conditions and works to address any additional areas of concern (unexpected finds as may have been identified during the balance of the remediation works) were documented in this audit report.

The ERM works were undertaken during the period 2010 and 2011. The data gap investigation works included delineation of various identified soil 'hotspots' and groundwater monitoring to assess potential TPH impact associated with the Block F UST area, which included the installation of three additional downgradient monitoring wells given the existing wells were reported to be blocked.

The groundwater assessment downgradient of the Block F USTs did not identify residual hydrocarbon concentrations in groundwater and as such, ERM considered no further management/remediation was required with regard to groundwater in this portion of the site. In addition, it was reported that the original tankpit excavation was reopened and extended to identify the extent of the original excavation. Hard sandstone bedrock was encountered at depths of

approximately 2 m below ground surface. Based on ERM notation of anthropogenic inclusions in the previous tankpit reinstatement material, the excavation spoil was disposed of from the site following successful validation of the new, extended tankpit margins (25 m by 10 m by 2 m).

The hotspot investigation activities identified ACM fragment contamination conditions in the northern portion of the current assessment site (to the east of the parade ground) that required remediation. Whilst previously suspected ACM hotspots were not confirmed via delineation sampling and so no further actions were required.

A number of former sumps were removed from the Block F Transport Compound. These were reported to include 6 potential sumps/interceptor pits, the contents of which were pumped into drums for off-site disposal prior to excavation and removal of the infrastructure.

In addition, where buildings were demolished during the project works, ERM environmental staff and an occupational hygienist completed visual inspections of the resulting ground surface to assess the potential for contamination of the surface soils as a result of demolition activities. These works included manual removal of hazardous materials (ACM), clearance inspections, demolition of the building and then scraping of surface soils within the former building footprint and a 2 m zone surrounding the footprint, to generate a stockpile that was then removed from site. Where appropriate, validation sampling was completed. The extent of these locations are further documented in detailed plans from ERM included in **Appendix A5**.

It was reported that during removal of fly tipped waste in the drainage line down gradient of the parade ground, ACM fragments were identified and a subsequent surface scrape revealed significant quantities of material buried at this location, which extended beneath the creek channel. It is noted that validation samples did identify trace levels of friable asbestos fibres, less than the reporting limit at a number of locations within this excavation that remained on site at the completion of works.

The IDS ERM Stage 3 validation report was considered by the AECOM (2009) audit report to have documented works completed to close out identified data gaps. The auditor confirmed that based upon validation results, remediated areas had been completed in accordance with the requirements of the RAP (RE 2009), the groundwater conditions in the vicinity of the former USTs were considered to not be significantly impacted with regard to future residential land uses and that the balance of soils at the site were considered suitable for the proposed land uses.

However, with regard to the historical use of site and its overall size, the auditor noted that the potential remained for unexpected finds of either military origin, or contamination that may remain at the site that may be identified during future development works and as such a DEMP should be implemented.

The auditor concluded that based upon the outcomes of the review, the IDS had been remediated and validated to a standard suitable for the land use specified in the current Liverpool LEPs as well as for unrestricted uses, subject to implementation of the EMPs relevant to various portions of the site.

3.3.5 JBS&G (2021) Detailed Site Investigation

JBS&G was engaged by Landcom (the client) to complete a Due Diligence Data Gap Investigation for of Lot 5 within the Precinct 3 portion of the Landcom Edmondson Park property, located at Campbelltown Road, Edmondson Park. Landcom intend to divest proposed Lot 5 to facilitate proposed residential development works. A previous desktop evaluation of potential contamination status undertaken by JBS&G identified a number of data gaps within the existing assessment reports that resulted in uncertainty with regard to requirements for management of potential contamination at the investigation area. As such, targeted investigation was proposed to provide Landcom and potential purchasers with additional information to support transaction negotiations.

While it is noted that the JBS&G (2021) investigation was competed adjacent to the area of proposed open space land use, given the previous barracks use extended across both areas, the identified impacts, particularly in relation to ACM are relevant in development of the Conceptual Site Model for the current investigation area.

The scope of works included a more detailed review of historical development records and investigation area inspection to map areas for potential investigation of contamination issues, primarily related to ACM, buried waste, fly tipped stockpiles and per- and poly fluoroalkyl substances (PFAS) impacts to guide a subsequent intrusive investigation and laboratory analysis program. Given the limited timeframe for the investigation, groundwater assessment for PFAS was limited to sampling of existing viable monitoring wells identified upgradient of the investigation area as historically installed for assessment of the former Block F USTs. Given the associated depot was a potential AEC for historical use of PFAS, this was considered a suitable assessment strategy in addition to assessment of soil conditions within the investigation area. The outcomes of the assessment were to include preparation of an updated Conceptual Site Model (CSM) as part of the assessment report providing updated guidance on potential contamination issues requiring management prior to, or during redevelopment of the investigation area.

In addition to documenting residual site infrastructure features, the field investigation activities included the installation of testpits at targeted judgemental locations (as shown in **Figure 4**, **Appendix A6**). Fill material was identified across the investigation area to a depth of between approximately
0.05 m and 0.6 m bgs across 44 testpits. A total of 30 soil samples were collected and analysed for asbestos in soil (WA 500 ml) and PFAS in addition to 5 fragments for asbestos ID. One water sample was obtained for PFAS in groundwater in addition to pH, electrical conductivity and total dissolved solids (TDS).

While not within the current investigation are, bonded ACM was observed on the ground surface at scattered locations across the investigation area including at FRAG01 (TP30), FRAG02, FRAG06 (TP13) and FRAG08 (TP40), TP24/TP36 and TP37. ACM fragments were identified in fill material at three sampling locations, TP25_0.2-0.3, TP06_0.2-0.3 and TP42_0-0.1, with asbestos quantification identifying concentrations of bonded ACM in fill exceeding the adopted assessment criteria at two locations (TP25 and TP42) as shown in **Figure 4, Appendix A6**.

Limited anthropogenic material including bricks, was also observed on the surface and within the fill, often associated with further asbestos impacts. Additionally, an ACM pipe, recognised to be associated with the fire hydrant, was identified in situ in the central east of the investigation area (associated with JBS&G TP35, **Figure 4, Appendix A6**) and a Telstra Pit containing ACM was also seen in the south-west section of the site close to the Heritage Precinct. The potential historical extent of the fire hydrant lines across at the investigation area, including within the Investigation Area are presented on **Figure 2**.

Laboratory results reported the absence of asbestos as asbestos fines (AF) or friable asbestos (FA) at or above the reporting limit of 0.001% w/w or the presence of respirable fibres within samples scheduled for laboratory analysis. On this basis, the impacts at the investigation area are currently classed as non-friable (ie. Bonded ACM) impacts.

No other indications of significant or gross contamination in fill soils across the investigation area, inclusive of staining, odorous soil conditions, or other visual impacts were identified during the investigation.

Laboratory analysis of representative soil samples for PFAS compounds as contaminants of potential concern did not identify the presence of contaminant concentrations above the laboratory limit of reporting (LOR), being less than the adopted health and/or ecological based assessment criteria appropriate for residential land use scenarios. Further, limited groundwater analysis downgradient

of former fuel infrastructure locations upgradient of the site did not identify PFAS impacts in groundwater. On this basis, there was considered to not be significant health or ecological based risks from PFAS impacts with regard to future investigation area development proposals.

The investigation area assessment activities were reported to have confirmed the presence of residual ACM impacts associated with former infrastructure including, limited Telstra pits, underground pipework and fragments/sheeting associated with remnants of former buildings. Whilst there was no evidence of significant widespread impacted soil volumes at the investigation area, it should be anticipated that future site development earthworks may identify further isolated areas of ground surface impacts and fill material containing ACM. The reported locations and interpreted extent of ACM on the ground surface and ACM contaminated soil identified by this investigation is shown in **Figure 5, Appendix A6.**

As such, it was recommended that an appropriate investigation area management plan, including an interim AMP and development RAP be prepared to address procedures for management of occupational exposures and contamination risks such that upon the completion of works the investigation area may be confirmed as suitable for the proposed urban uses.

3.3.6 JBS&G 2023a Detailed Site Investigation

JBS&G Australia Pty Ltd (JBS&G) was engaged by Landcom (the client) to provide environmental consultancy services for the combined contamination and geotechnical assessment for a portion of Precinct 3 of the Edmondson Park development site, located at Campbelltown Road, Edmondson Park, NSW.

Given the age of previous investigations and removal of previous structures and spoil since, the current contamination status of the investigation area was considered to require further assessment to enable conclusions to be drawn on suitability for the current development proposal such that the subdivision consent may be granted.

The detailed site investigation included the completion of 24 soil testpits and associated sampling to facilitate analysis of selected representative soil samples for a broad range of Contaminants of Potential Concern (COPCs) identified in the CSM including heavy metals, Polycyclic Aromatic Hydrocarbons (PAHs), TRH, Benzene, Toluene, Ethylbenzene and Xylene (BTEX), Organochlorine Phosphates (OCPs), PCBs, PFAS and asbestos. With consideration to the adopted assessment criteria, the following conditions were identified that require further consideration from a health and/or ecological risk viewpoint with regard to the suitability of the investigation area for the proposed land use:

- Identification of one location (DG05_0_0.1) where lead in surface fill material concentrations exceeded the adopted health and ecological investigation criteria; and
- During the inspection of the investigation area, no surficial ACM was observed. Given that the investigation area was observed to be highly vegetated, there is a potential of ACM fragments to be present given the consistent historical site use, as was observed in the adjacent non vegetated areas of Lot 5. Limited anthropogenic material e.g., bricks, was also observed on the surface and within the fill, often associated with further asbestos impacts.
- Laboratory analysis of representative soil samples for PFAS compounds as contaminants of potential concern did not identify the presence of elevated contaminant concentrations with regard to the adopted health and/or ecological based site assessment criteria appropriate for open space landuse scenario.

Remaining infrastructure associated with former use of the investigation area, including inground water hydrant infrastructure, roadways, stormwater, Telstra Pits etc will also require decommissioning works and removal during site preparation activities to ensure that no minor areas of inground impact occur within these areas of the investigation area. Given the identification of

ACM associated with this infrastructure in the adjacent lot, there is a potential that this will be identified and will require decommissioning and removal under an AMP/RAP.

It is considered that the site the investigation area is readily able to be made suitable for the proposed open space and less sensitive supporting land uses subject to preparation and successful implementation of an appropriate remedial action plan (RAP) to address the areas of concern as outlined above. The reported location of lead in soil by this investigation is shown in **Figure 4, Appendix A7**.

Based on the conclusions of the investigation it was recommended that management of the identified lead in fill material and high potential for asbestos contamination in relation to development of the investigation area is undertaken via preparation and implementation of a RAP, with appropriate site management procedures to be implemented via preparation and implementation of an AMP/asbestos register to ensure occupational exposure risks are appropriately managed during any/all activities that result in ground surface disturbance; and development of a construction environmental management plan (CEMP) to incorporate an unexpected finds protocol (UFP) to address any unexpected contamination conditions encountered during development of the investigation area.

3.3.7 JBS&G 2023b Addendum DSI

Subsequent to completion of the DSI (JBS&G 2023a), further investigation was completed in the vicinity of the lead hotspot, DG05 (**Figure 4**) to further evaluate the extent of lead in soil impacts.

The additional site investigation works included intrusive delineation investigations at 8 locations, at distances of approximately 5 m and 10 m spacing surrounding lead exceedance impacted soil at location DG05, analysis of selected soil samples for potential contaminants of concern (COPCs) as identified in the Conceptual Site Model (CSM) presented in JBS&G (2023) including heavy metals, total recoverable hydrocarbons (TRH), polycyclic aromatic hydrocarbons (PAHs), benzene, toluene, ethylbenzene and xylenes (BTEX), organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs) and asbestos; and preparation of an addendum DSI letter documenting the findings.

No observations of odorous and/or stained conditions and no visible indicators of asbestos in soil were identified, albeit noting the density vegetative ground cover may have obscured the potential for observation of building/demolition waste, including paint chips, lead flashing and/or asbestos/ACM on the ground surface.

Laboratory analysis of representative samples from the additional delineation sampling locations did not identify the presence of lead in soil contamination conditions in exceedance of the adopted site assessment criteria and as such it was considered that the additional investigation had confirmed delineation of the identified lead in soil contaminated fill material in this area of the site that will require management/ remediation to make the site suitable for the proposed works. Based upon assessment activities, the estimated extent of contaminated lead in fill material impacts within the site is shown in **Figure 5, Attachment A8**.

Assessment of the total and TCLP lead concentrations in analysed samples as presented in JBS&G (2023b), the lead contaminated material requiring management/remediation was classified under the NSW EPA (2014) waste guidelines as Restricted Solid Waste (RSW) for the purposes of off-site disposal.

4. Contamination Status Conceptual Site Model

4.1 Contamination Issues

Completion of the site assessment activities have identified contamination issues requiring management to comprise a limited area of lead in soil impacts assumed to be associated with historical investigation area development, demolition and/or imported fill material at the investigation area. In addition, the potential remains that areas of ACM in/or surface soil may be encountered during/following vegetation management that will require management during investigation area preparation works. Further, there are a number of material stockpiles located at the investigation area that will require further assessment to verify the suitability of the material for beneficial reuse during development works (or off-site removal).

The occurrence of lead in soil and potential for ACM impacts will require the implementation of exposure controls under relevant Work Health and Safety Act/WHS regulations during and following ground disturbance activities to ensure that the heavy metals exceedances in addition to ACM are addressed such that upon completion of remediation/redevelopment works there are no ongoing management requirements to worker health and safety. The material will also require consideration in future development planning with regard to material handling/off-site disposal.

No other contamination issues have been identified at the development site which warrant remediation to make the development site suitable for the proposed land uses.

4.1.1 Lead in soil

During previous investigation activities, lead in near surface fill material was identified at one location in exceedance of the adopted criteria at location DG05_0-0.1 as shown on **Figure 4**. The lead concentrations were reported to be less than the adopted criteria in the underlying natural clay sample (DG05_0.2-0.3) and in the delineation test pits as completed on a 5 m spacing from DG05 (JBS&G 2023b), thereby delineating the extent of the identified impact as shown in **Figure 5**.

Based on the investigation results, it is anticipated that the extent of remediation works comprise approximately 100 m^2, with the vertical extent of the identified impact restricted to the fill material within the top 0.2 m profile, resulting in approximately 20 m^3 material requiring removal.

Assessment of the total and TCLP lead concentrations in analysed samples as presented in JBS&G (2023b), the lead contaminated material requiring management/remediation was classified under the NSW EPA (2014) waste guidelines as Restricted Solid Waste (RSW) for the purposes of off-site disposal.

4.1.2 Bonded ACM on the Ground Surface

The JBS&G (2021 and 2022) investigation works within the current Investigation Area did not identify the presence of ACM on the ground surface or within surface fill material. However, given the previous identification of such materials across the broader Precinct 3 footprint and the dense nature of the current vegetation cover, historical presence during demolition activities, and the observed presence of scattered construction/demolition waste across the ground surface, there is an elevated risk such conditions may occur between the recent sampling locations.

As such, it should be presumed that the final extent of ACM impacts on the ground surface and within surface soil will be confirmed upon completion of the investigation area clearance activities, whereby inspection of the ground surface following removal of all existing infrastructure and vegetation will allow for the identification of the extent of ACM on the ground surface and subsequent management.

There is the potential that additional bonded asbestos/ACM in fill material may be identified following vegetation removal and during bulk earthworks across the investigation area. If identified, these should be managed in accordance with the unexpected finds protocol, as detailed in **Section 7**.

4.1.3 Bonded ACM Containing Infrastructure

Remaining infrastructure associated with former use of the investigation area, including inground water hydrant infrastructure, roadways, stormwater, Telstra Pits etc will also require decommissioning works and removal during investigation area preparation activities to ensure that no minor areas of inground impact occur within these portions of the investigation area. Given the identification of ACM associated with this infrastructure in the adjacent lot, there is a potential that this will be identified within the current investigation area that will require decommissioning and removal under appropriate management controls.

Similar to the potential for ground surface ACM fragments, there is the potential that further ACM containing infrastructure will be identified following demolition and vegetation clearance works at the investigation area. As such, in addition to allowances for removal of the ACM infrastructure noted above, a contingency for removal of additional infrastructure should be planned for.

4.1.4 Potential Aesthetic Issues

Based on the proposed land uses, and with consideration of the observations made during the investigation area assessment:

- No chemically stained or otherwise discoloured soils were observed;
- No large quantities of inert refuse and/or unsightly refuse were identified; and
- No potentially offensive odours in soil were identified.

As noted in the sections above, there remains the potential that ACM impacts will be encountered on the ground surface and/or within surface soils at the investigation area. In accordance with the NSW EPA guidelines, visible asbestos must not occur within the top 100 mm surface soils upon completion of development works, given the aesthetic concerns regarding exposure to ACM. As such, where identified, surface ACM and near surface fill containing low concentrations of ACM, will require management/remediation to close out aesthetic requirements.

Apart from the potential for ACM, other aesthetic concerns requiring to be addressed at the investigation area are expected to include residual structure footprints for removal. Removal of these residual materials is required to validate that there are no potential asbestos impacts underlying them.

4.2 Human and Ecological Receptors

The primary human receptors of concern are future users of public domain areas within the investigation area. Other potential receptors will include construction workers during the site redevelopment, and potential future sub-surface intrusive / maintenance workers.

The primary ecological receptors of concern represent current site flora and fauna, albeit, asbestos does not present a concern with regard to ecological receptors.

4.2.1 Potential Exposure Pathways

Based on the known lead in soil contaminants and potential asbestos/ACM impacts identified as discussed above, the exposure pathways for the investigation area comprise the potential for inhalation of airborne asbestos fibres and/or impacted lead containing dust particles in addition to ingestion and dermal exposure to lead contaminated soil during site redevelopment activities associated with inground disturbance.

4.2.2 Preferential Pathways

For the purpose of this assessment, preferential pathways have been identified as natural and/or man-made pathways that result in the preferential migration of COPC as either liquids or gasses.

Man-made preferential pathways may be present throughout the investigation area, generally associated with remnant sub-surface services/infrastructure at the site and disturbed natural / fill materials beneath existing ground surface, and at near surface depths over the remainder of the investigation area. Fill materials are anticipated to have a higher permeability than the underlying natural soil and/or bedrock.

Natural preferential pathways are likely limited to natural lithological boundaries, such as between more porous soils and weathered/residual bedrock, where infiltrating groundwater is vertically confined and begins to migrate laterally, and surface water drainage features.

4.3 Data Gaps

Based on the environmental assessment works undertaken, there is considered to be sufficient data to inform this RAP. Notwithstanding, there are a number of issues that will require further assessment/validation during investigation area preparation/remediation works, such that potential contamination conditions may be appropriately addressed prior to commencement of bulk earthworks. These are discussed further following:

- limited sampling of identified fly tipping/remnant stockpiles as present at the investigation area has not identified contamination concerns to date, further validation of these materials will be required to confirm their suitability for beneficial reuse at the site as per the requirements of EPA (2022) minimum sampling density;
- the extensive nature of current investigation area vegetation has limited the opportunity to identify the extent of ACM fragments on the ground surface. As such, during vegetation clearance activities, further inspection of the investigation area ground surface will be required to assess the extent of fragment impacts across the investigation area;
- Asbestos containing infrastructure has been identified in the form of an asbestos pipe associated with the fire hydrant network and in ground Telstra pits within the broader Precinct 3 site. The potential remains for further inground asbestos containing infrastructure to be identified during demolition of remnant road networks, vegetation clearance and potentially initial earthworks at the investigation area, which will require implementation of appropriate controls to remove the infrastructure and assessment/validation of the surrounding soil to demonstrate the absence of associated soil impacts.

In addition to the above, should unexpected/additional environmental impact be suspected/ identified during remedial activities and/or subsequent earthworks, a range of remediation options are available for the investigation area as detailed in **Section 5**, with a contingency plan and unexpected finds protocol outlined in **Section 7.1**. Where additional impact is identified, these options may be re-evaluated to determine the most appropriate option for the impacted media.

5. Remedial Options Evaluation

5.1 Remediation Objectives

The remediation objective is to remove potentially unacceptable risks posed to human health due to the occurrence of lead contamination in soils, potential for ACM infrastructure and ACM aesthetic concerns, such that the development site is made suitable for the proposed use. It is a further objective to ensure the suitable management ACM impacted soils and construction materials such that they do not present a WHS risk during works and/or are present within surface soils upon completion of development activities.

It Is a further objective to undertake remediation works in a manner which is consistent with applicable regulatory requirements.

5.2 Remedial Options

5.2.1 EPA (2017) Guidance

The approach adopted in this RAP is consistent with the preferred hierarchy of options for site clean-up and/or management provided in the ASC NEPM, which are listed as follows:

- On-site treatment so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level;
- Off-site treatment of excavated soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level, after which the soil is returned to the investigation area; or

if the above are not practicable,

- consolidation and isolation of the soil on-site by containment within a properly designed barrier; and
- removal of contaminated soil to an approved site or facility, followed where necessary, by replacement with appropriate material;

or

- where the assessment indicates remediation would have no net environmental benefit or would have a net adverse environmental effect, implementation of an appropriate management strategy.

In addition, it is also a requirement that remediation should not proceed in the event that it is likely to cause a greater adverse effect than leaving the investigation area undisturbed. In addition, where there are large quantities of soil with low levels of contamination, alternative strategies are required to be considered or developed (EPA 2017). In addition, sustainability should be considered by the consultant when deciding which remediation option to choose, in terms of achieving an appropriate balance between the benefits and effects of undertaking the option. For example, where there are large quantities of soil with low levels of contamination, alternative strategies are required to be considered or developed (EPA 2017).

Consideration of each of the available options is presented in **Table 5.1**, considering the proposed future redevelopment scheme details.

5.2.2 WA DoH (2009) Guidance

Western Australia Department of Health (WA DoH (2009[17])) provides specific guidance on the remediation and management of asbestos impacts and is referred to in the ASC NEPM. WA DoH (2009) note the following considerations as important when assessing the acceptability of any remediation:

- Minimisation of public risk;
- Minimisation of contaminated soil disturbance; and
- Minimisation of contaminated material/soil moved to landfill.

Consideration of the WA DOH (2009) guidance is presented in **Table 5.1**, considering the proposed future reuse of the investigation area. It is further noted that JBS&G undertook a review of the recently updated version of WA DoH (2009) (as dated 2021), which has not been endorsed by the NSW EPA and it is noted that no material change to the guidance as relevant to the investigation area assessment/ remediation works has been identified within the updated documentation. Further, consideration has been given to the NSW EPA Policy position with regard to the remediation of asbestos in soil (NSW EPA 2022[18]) in evaluation of remedial/management options.

[17] WA DOH (2009) *Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia*. Government of Western Australia Department of Health May 2009.

[18] *Position statement — WA guidelines for the assessment, remediation and management of asbestos contaminated sites (https://www.epa.nsw.gov.au/your-environment/contaminated-land/other-contamination-issues/managing-asbestos-in-and-on-land/position-statement-wa-managment-of-asbestos-sites)* accessed 20 January 2023.

Table 5.1: Remedial Options Assessment

Option 1: On-site treatment of the soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level.	<u>Asbestos Impacted Soil/Surface ACM</u> There is no available technology that provides for the destruction of asbestos in soil impacts. Treatment of ACM in soil impacts/on the ground surface can under certain conditions, comprise the successful physical separation of ACM from soil (ie. emu picking), thereby allowing for the discrete disposal of collected ACM fragments and retention of remediated soil within the investigation area. On-site treatment (i.e. picking of ACM fragments) as per the current NSW EPA position is limited to bonded ACM on the ground surfaces and shallow soils (<100 mm) to address ACM impacts associated with poor/incomplete demolition of former asbestos structures. Given the scale of the site and nature of historical demolition activities, this is considered a feasible option to address such impacts. However, fill material present at depths greater than 100 mm below ground level, cannot be treated in this manner under the current NSW EPA policy and as such, Option 1 is not appropriate for these materials.	<u>Asbestos</u> Ground surface and top 100mm profile – **Preferred Option**. Deeper fill profile – not a suitable option.
	<u>Heavy Metals (Lead) Impacted Soil</u> No available technology to economically remove or destroy lead impacted soil based on the small volume of impacted material.	<u>Heavy Metals (Lead)</u> Not a suitable option
Option 2: Off-site treatment of excavated soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level, after which the soil is returned to the investigation area.	<u>Asbestos Impacted Soil/Surface ACM</u> Under NSW EPA policy, this option it is not considered to be a permissible option for ACM impacted soils.	<u>Asbestos</u> Not a suitable option.
	<u>Heavy Metal (Lead) Impacted Soil</u> No available technology to economically remove or destroy lead impacted soil based on the small volume of impacted material.	<u>Heavy Metals (Lead)</u> Not a suitable option

Option 3: Removal of contaminated soil to an approved site or facility, followed where necessary by replacement with clean fill.	<u>Asbestos Impacted Soil/Surface ACM</u> For subsurface ACM impacted material, excavation and off-site disposal is a permissible management method under the current NSW EPA policy. There are currently suitably licensed waste facilities in the Sydney Metropolitan region capable of accepting asbestos contaminated soils. Offsite disposal of ACM impacted/contaminated soils is likely the fastest method of remediation, and removes the requirement for ongoing management of the investigation area under the contaminated land management framework. However, there are significant costs associated with disposal as a result of the NSW Waste Levy. In addition, consideration may be required as to the need to import suitable material to establish development levels, adding costs and vehicle movements during works. For surface and near surface impacted material, adoption of excavation and off-site disposal is considered likely a much more expensive option, given the volume of material required to be disposed of to landfill, when compared to the physical separation of ACM fragments and their off-site disposal. As such, where Option 1 may be implemented, this is preferred to excavation and off-site disposal of impacted soils. However, where ACM cannot be successfully physically separated, Option 3 will comprise a contingency remedial option for further evaluation.	<u>Asbestos</u> Ground surface and top 100mm profile – feasible but non-preferred option. Deeper fill profile – **Preferred Option.**
	<u>Heavy Metals (Lead) Impacted Soil</u> There are currently suitably licensed waste facilities in the region capable of accepting lead impacted soils. Given the relatively minor amount of lead contaminated soils identified, this option is likely the fastest and most cost-effective and environmentally suitable method of remediating the lead contaminated material.	<u>Heavy Metals (Lead)</u> **Preferred Option**

Option 4: Consolidation and isolation of the soil on-site by containment within a properly designed barrier.	<u>Asbestos Impacted Soil/Surface ACM</u> ACM contaminated/impacted soils are readily able to be consolidated and contained within the extent of the investigation area under a suitable permanent physical barrier (cap) which would remove the future exposure pathways between the contaminated soil and site users/workers. Such works are permissible under the current NSW EPA policy. However, this would encumber the containment cell location with ongoing management requirements as the suitability of the investigation area will be dependent upon maintaining the barrier. Containment of contaminated soil would require the potential exposure to contamination to be managed by the implementation of a passive AMP/ Environment Management Plan (EMP). There must be acceptance by the ultimate custodian of the land (potentially council/NSW OEH NPWS that future controls will be implemented. Further, the AMP/EMP would require to be noted on future Section 10.7 Planning Certificates. Potential areas within the investigation area may comprise road reserves and/or areas of public open space, subject to agreement by council/OEH NPWS that they would accept of land with such encumbrances. As such, whilst this option is permissible and practically achievable, it is considered to be less feasible for the current known extent of contamination. However, should larger quantities be encountered during works, on-site containment may be a viable contingency requiring further consideration and consultation with the final end custodian.	<u>Asbestos</u> Not a favourable option, however a potential contingency should conditions necessitate one.
	<u>Heavy Metal (Lead) Impacted Soils</u> Potential exists for identified lead impacted material located across the investigation area to remain in-situ or relocated within the investigation area where it could be capped and contained under a EMP. However, with regard to the identified volume of contaminated material, the costs associated with implementation of an ongoing management strategy, including the relocation and capping of the contaminated material are considered to not make this option economically viable.	<u>Heavy Metals (Lead)</u> Not a Preferred Option

5.3 Preferred Remedial Strategy

A number of suitable remedial options have been outlined in **Table 5.1**. Based on the evaluation, it is considered that the remedial strategy for the identified lead in soil impact where identified at the investigation area is:

- Excavation and off-site disposal to an approved site or facility. The current estimated remedial extents are shown on **Figure 5.**
- Validation of the walls and floors of the resulting excavations; and
- Reshaping using investigation area soils, or alternatively if required, placement of imported (and validated) material to reinstate these excavations.

If additional testing to determine potential for re-use within the investigation area indicates that the identified stockpiles are unable to be retained within the investigation area, the remedial strategy for this material is off-site disposal to an approved site or facility. If identified, bonded ACM fragments on the ground surface are preferred to be remediated via emu picking with the surface soils validated as suitable for use either in-situ or alternatively reused elsewhere within the investigation area as part of the bulk earthworks program. The collected ACM will be the subject of off-site disposal to a NSW EPA licensed facility. Should the surface soil material be considered unsuitable to be retained within the investigation area (for reasons other than contamination), consideration to off-site disposal is appropriate.

The preferred remedial strategy for ACM impacted non-surface fill material, where identified at the investigation area is:

- Excavation of ACM impacted soils present to depths greater than 100 mm below ground level and subsequent offsite disposal to landfill/licensed waste facility.
- Validation of the walls and floors of the resulting excavations; and
- Reshaping using investigation area soils, or alternatively if required, placement of imported (and validated) material to reinstate these excavations.

Given it will be required to ensure the surface 100 mm of soils in the final finished development will be free of visible asbestos from an aesthetic view point and the asbestos impacts will require management to address WHS obligations, inclusion of implementation of exposure controls during and following ground disturbance activities is necessary. As such, it is anticipated that surface soils will be validated as free of visible asbestos during the emu-picking program as the investigation area is cleared. Following completion of the remediation phase works, the subdivision construction works including associated following which bulk excavation works will provide for the movement of material as required to achieve development levels. It is expected that an Unexpected Finds Protocol will apply subsequent to completion of the remediation works, such that should small scale issues be identified during subdivision works, appropriate processes will be available to contractors to resolve any potential risks from asbestos or other contaminants of concern.

In addition to addressing ACM impacted/contaminated soil, ACM containing infrastructure, including the fire hydrant pipe work and Telstra pit(s), as potential sources of ACM impact, will require removal.

6. Remediation Action Plan

6.1 Remediation Objectives

The remedial objective is to remove potentially unacceptable risks and/or aesthetic concerns posed to human health due to the occurrence of lead in soil impact and the high potential for ACM contaminated/impacted soils and associated sources of ACM in remaining infrastructure, such that the development site is made suitable for the proposed use.

It is a further objective to undertake remediation works in a manner which is consistent with applicable regulatory requirements.

6.2 Extent of Remediation / Management

Based on the findings of the previous investigations (**Section 3**) and the contamination status (**Section 4**), the extent of remediation to be undertaken within the development site has been estimated as follows and is shown on **Figure 5**:

- DG05: the identified lead in soil impacted soils are limited to the fill materials, comprising approximately 0 to 0.2 m bgs surrounding DG05. The lateral extent has been delineated to the north, east, west and south to a distance of approximately 5 m from original test pit location. This results in an estimated area of approximately 100 m^2. Based on the existing investigation data, the lead in soil contamination extends to the depth of fill (which will be verified during the validation remediation works, as detailed in **Section 8.3**), the preliminary estimated volume of lead contaminated soils is approximately 20 m^3.
- It is noted that fragments of ACM have been identified in areas of the broader Precinct 3 site in isolated locations at the surface and within shallow fill materials. Whilst specific occurrences have not been identified to date within the Investigation Area, it is considered likely that bonded ACM fragment impacts will be encountered during/following vegetation clearance and investigation area preparation activities within the investigation area and will require management.
- Remaining infrastructure associated with former use of the investigation area, including inground water hydrant infrastructure, roadways, stormwater, Telstra Pits etc will also require decommissioning and removal during investigation area preparation activities to ensure that no minor areas of inground impact occur within these portions of the investigation area. Given the identification of ACM associated with this infrastructure in the adjacent lot, there is a potential that this will be identified and will require decommissioning and removal. The extent of the materials requiring removal will be verified during the validation remediation works.

6.3 Regulatory and Planning Requirements

6.3.1 Assessment of Remediation-Specific Development Consent Requirements

The investigation area is proposed to be redeveloped as described in **Section 1.3**. The development site is subject to the provisions of the *State Environmental Planning Policy (Resilience and Hazards) 2021* and as such remediation of the investigation area is required to make it suitable for the proposed development, as identified in **Section 6.1**.

Under SEPP R&H 2021, where remediation work is not defined as 'category 1' remediation work, it is by default 'category 2' remediation work. Under the policy, remediation work can be undertaken without consent of the Consent Authority where the remediation work is categorised as 'category 2'.

Under Chapter 4, section 4.11 of SEPP R&H 2021, the remediation works are considered to be Category 2 Remediation Works as per the meaning provided in SEPP R&H 2021 and will not require specific development consent under the *Environmental Planning and Assessment Act 1997*.

It is understood that remediation works are planned to occur ancillary to redevelopment of the development site as part of the DA.

Remediation works are able to be undertaken separately to redevelopment of the investigation area. In this scenario, notification will be required to be given to Liverpool Council at least 30 days prior to commencement of Category 2 remediation works providing the council with the information needed to verify the work is not Category 1 by reference to the following criteria:

- The work is not designated development under schedule 3 of the Environmental Planning and Assessment Regulation 2000 (EPA&A Regulation) or under a planning instrument;
- The work proposed is not on land identified as critical habitat under the Biodiversity Conservation Act 2016;
- The remediation work is not likely to have a significant effect on threatened species, populations, ecological communities or their habitats;
- The work is not proposed in an area or zone identified in a planning instrument as being an area of environmental significance such as scenic areas or wetlands; and/or
- The work does not require consent under another SEPP or regional environmental plan.

In addition, the notification will also include relevant contact details and a proposed remediation schedule. Notice is also required to be given to the council within 30 days of remediation works completion.

6.3.2 Designated Development Triggers

Designated Development is identified as development which is high-impact or located in or near an environmentally sensitive area. An assessment has been undertaken against Part 1, Clause 15 of Schedule 3 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation).

Under the EP&A Regulation, contaminated soil remediation work is considered Designated Development where it satisfies any of the triggers presented in **Table 6.1**. An assessment has been undertaken in **Table 6.1** and the contaminated soil remediation work is not Designated Development.

Table 6.1: EP&A Regulation Designed Development

Sub-clause	Criterion	Assessment
Contaminated soil treatment works (being works for on-site or off-site treatment of contaminated soil, including incineration or storage of contaminated soil, but excluding excavation for treatment at another site)—		
(a)	that treat or store contaminated soil not originating from the site on which the development is proposed to be carried out and are located— within 100 metres of a natural waterbody or wetland, or in an area of high watertable or highly permeable soils, or within a drinking water catchment, or on land that slopes at more than 6 degrees to the horizontal, or on a floodplain, or within 100 metres of a dwelling not associated with the development, or	Not satisfied – no treatment or storage of contaminated soil not originating from the site is proposed under this remediation plan.
(b)	that treat more than 1,000 cubic metres per year of contaminated soil not originating from the site on which the development is located, or	Not satisfied – no treatment of contaminated soil not originating from the site is proposed under this remediation plan.

Sub-clause	Criterion	Assessment
(c)	that treat contaminated soil originating exclusively from the site on which the development is located and— incinerate more than 1,000 cubic metres per year of contaminated soil, or treat otherwise than by incineration and store more than 30,000 cubic metres of contaminated soil, or disturb more than an aggregate area of 3 hectares of contaminated soil.	Not satisfied – treatment of contaminated soil originating from the site is proposed, however: No incineration is proposed to be undertaken, No treatment and storage, other than by incineration, is proposed to be undertaken; and Disturbance of contaminated soil is proposed to be undertaken on an area of less than a total size of 3 hectares.

6.3.3 General Regulatory and Planning Requirements

A brief review of potentially applicable legislation and associated guidelines is provided following.

Protection of the Environment Operations Act 1997

All potential discharges from the investigation area during remediation works will require to be maintained below applicable assessment criteria / threshold guidelines during the remediation works. This would apply to potential emissions in air, water and discharges to groundwater. Levels of discharges are typically assessed at a boundary.

Under the *Protection of the Environment Operations Act 1997* (POEO Act), activities relating to the remediation of contamination may potentially be considered Scheduled Activities and require to be licensed. The proposed remediation is considered not to comprise a Scheduled Activity based on review of the two potentially applicable sections (15 and 15A).

The proposed remediation/validation activities are considered not to comprise a 'Scheduled Activity' to be licensed under the Protection of the Environment Operation Act 1997 based on the following:

- Section 15:
  - It is not proposed to incinerate soil as part of the remediation works;
  - It is not proposed to 'treat and store more than 30 000 m^3 of contaminated soils' as part of the remediation works; and
  - It is not proposed to disturb more than an aggregate area of 3 hectares of contaminated soil.
- Section 15A:
  - It is not proposed to treat more than 100 ML of groundwater per year.

Water Management Act 2000

Remediation works are not anticipated to be captured by the Water Management Act 2000.

Protection of the Environment Operations (Waste) Regulation 2014

The regulations make requirements relating to non-licensed waste activities and waste transporting. The proposed lead in soil removal works within the investigation area will not require to be licensed. There is the potential for asbestos to require removal from the investigation area. Section 48 of the regulation requires that wastes are stored in an environmentally safe manner. It also stipulates that vehicles used to transport waste must be covered when loaded.

This regulation also details additional tracking requirements for vehicles carrying Special (Asbestos) waste. The requirements for the transportation of asbestos waste include:

- Bonded asbestos material must be securely packaged at all times;
- Friable asbestos material must be kept in a sealed container;
- Asbestos-contaminated soils must be wetted down; and

- All asbestos waste must be transported in a covered, leak-proof vehicle.

The transporter of asbestos waste must cause the following information to be given to the EPA prior to the transportation of asbestos waste loads:

- Source site details including address, name and contact details;
- Date of proposed transportation commencement;
- Name, address and contact details of disposal site; and
- Approximate weight of each class of asbestos in each load.

The transporter of asbestos waste must ensure the following information is given to the disposal site before or at delivery:

- Unique consignment code issued by EPA in relation to that load; and
- Any other information specified in the Asbestos and Waste Tyres Guidelines (EPA 2015).

The requirements relating to the off-site disposal of asbestos waste are as follows:

- Asbestos waste in any form must be disposed of only at a landfill site that may lawfully receive the waste,
- When asbestos waste is delivered to a landfill site, the occupier of the landfill site must be informed by the person delivering the waste that the waste contains asbestos,
- When unloading and disposing of asbestos waste at a landfill site, the waste must be unloaded and disposed of in such a manner as to prevent the generation of dust or the stirring up of dust,
- Asbestos waste disposed of at a landfill site must be covered with virgin excavated natural material or other material as approved in the facility's environment protection licence.

Provision is provided in the Regulation and NSW EPA (2014) guidelines for the NSW EPA to approve the immobilisation of contaminants in waste. It is noted that no waste will be received at the investigation area during remediation works and only virgin excavated natural material (VENM), excavated natural material (ENM) or similar material the subject of a resource recovery exemption under the POEO Act/Regulation framework will be imported to the investigation area, if required.

Protection of the Environment Operations (Underground Storage Systems UPSS) Regulation 2019

No underground storage systems are known to exist within the investigation area.

Waste Classification Guidelines (NSW EPA 2014)

All wastes generated and proposed to be disposed off-site shall be assessed, classified and managed in accordance with this guideline.

Asbestos Removal Regulations and Codes of Practice

The removal and disposal of asbestos will be managed in accordance with the Work Health and Safety Act (2011) and Work Health and Safety Regulation (2017), the *Code of Practice How to Safely Remove Asbestos* (SWNSW 2019a), *Code of Practice How to Manage and Control Asbestos in the Workplace* (SWNSW 2019b), NSW SafeWork Guidelines, the NSW EPA (2014) *Waste Classification Guidelines*, and requirements under the *Protection of the Environment Operations (Waste) Regulation* (2014) for asbestos waste monitoring.

Excavation, on-site remediation and removal of asbestos impacted soils are required to be conducted by a Class B (Bonded) Asbestos Removal licensed contractor.

NSW Aquifer Interference Policy (NSW Office of Water 2012)

Groundwater underlying the investigation area will potentially be classified as an aquifer as per the policy. Remediation works are not anticipated to interfere with groundwater present at the investigation area.

Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997

Completion of the works presented in this RAP will not result in a 'Duty to Report' as defined in the guidelines.

Work Health and Safety Act 2011 No 10 and Work Health and Safety Regulation 2017

The information and data provided in this RAP should be considered by the Remediation Contractor in preparation of health and safety plans for the remedial works. The Remediation Contractor will require to be made aware that asbestos is present within soils proposed to be remediated at the investigation area.

6.4 Remediation Methodology

6.4.1 Lead in Soil Excavations

The following remedial works to remove lead contaminated fill material associated with DG05 shall be undertaken:

- The DG05 where lead in soil was identified to exceed the land use criteria, is to be located and marked out as per the lateral and vertical extents on **Figure 5** by the Environmental Consultant;
- The Remedial Contractor will commence excavation of the soils to the depth of lead impacted fill;
- Excavated soils will be placed directly into waiting trucks or, where temporary stockpiling is required, stockpiled in accordance with the requirements of stockpiling (**Section 6.5.4**);
- Excavation footprints are to be validated by the Environmental Consultant as per **Section 8**. Should validation fail, the failed walls and/or base of the excavation will be excavated a further 0.2 m in the direction of the failure and the validation process repeated until validation is achieved;
- The lateral and vertical extents of each excavation are to be surveyed for material volume reconciliation;
- The excavated contaminated material is to be removed off-site to a waste facility lawfully able to accept the classified waste;
- Once validation is achieved, the consultant will advise the contractor that the excavation area can be reinstated with validated investigation area won or imported soil (**Section 8.3.4**), or if reinstatement is not required for development levels, the area can be made safe; and
- All tipping/disposal dockets are to be retained by the Remediation Contractor for provision to JBS&G and inclusion in the validation report.

6.4.2 Bonded ACM on the Ground Surface

Where ACM fragments are identified during/following vegetation clearance, the Environmental Consultant and Remediation Contractor personnel will complete a detailed inspection of the ground surface in the vicinity of the finds to assess and document the extent of ACM impact. If identified, this will be managed as per the Unexpected Finds Protocol, as detailed in **Section 7**.

The procedures as outlined in **Section 6.5** will then be implemented with regard to establishment of required work zones etc, followed by emu picking of fragments by the Remediation Contractor, off-site removal of the ACM and validation of the ground surface by the Environmental Consultant. Following successful validation of the surface soils for the presence of asbestos, the validated soils are able to be retained anywhere within the investigation area without the requirement for further remediation or management, subject to implementation of the Unexpected Finds Protocol to ensure the appropriate management of any small scale unexpected conditions as may be identified during/following earthworks.

6.4.3 Bonded ACM Containing Infrastructure

As for the ACM surface fragments, where ACM infrastructure, including but not limited to pipe work, Telstra Pits, etc is identified during investigation area clearance and preparation works, appropriate management/removal controls will be implemented as outlined in **Section 6.5** with particular reference to **Section 6.5.9**. Subsequent to removal of the infrastructure, the Environmental Consultant will validate the ground surface/excavations to document the absence of asbestos/ACM in soil impacts such that exposure and environmental controls may be removed from the works area and sufficient information is available to demonstrate the suitability of the investigation area for the proposed public open space use.

6.4.4 Existing/Fly tipped Stockpiles

As identified in **Section 4.3**, there are a number of stockpiles present at the investigation area which have had limited assessment to date. Whilst this assessment has not identified the presence of conditions indicative of contamination, in accordance with the requirements of EPA (2022), further detailed assessment of the stockpiles is necessary to demonstrate the suitability of the material for beneficial reuse during development works.

It is anticipated that such sampling activities will be undertaken during the remedial phase works, with sampling representative of the stockpiled material analysed for all potential COPCs, as documented in **Table 8.3**, in addition to an aesthetics assessment with results compared to the adopted validation criteria.

Should the additional assessment identify the material as unsuitable, the material will be the subject of a waste classification assessment, followed by off-site disposal as waste to a suitably licensed facility. In such a situation, the resulting stockpile footprint will be the subject of a validation assessment consistent with the provisions outlined in **Section 6.4.2** with analysis for relevant COPCs to validate the surface soils.

6.5 General Remediation Requirements

6.5.1 General Asbestos Provisions

Given the scale of the investigation area and nature of anticipated ACM as may be encountered during works, it is anticipated that a Class B licensed asbestos removal contractor (Remediation Contractor) will be engaged to undertake the remediation works. Prior to investigation area establishment, it is anticipated the Remediation Contractor will prepare all required documentation in accordance with its asbestos removal licence and the proposed non-friable asbestos removal works, including, but not limited to:

- A SafeWork NSW permit to remove non-friable asbestos application;
- An Asbestos Removal Control Plan (ARCP); and
- Safe Work Method Statements (SWMS).

For each relevant works area, the Remediation Contractor will undertake the following:

- The non-friable asbestos/ACM removal area shall be marked out by the Remediation Contractor. Temporary fencing, or other easily recognisable barriers may be used to demarcate the proposed asbestos removal area. Given the size and complexity of the investigation area, it is anticipated that remediation areas will be identified and implemented on a progressive basis across the investigation area based on an overall program of exposure, management/remediation and clearance.
- The Remediation Contractor shall install asbestos warning signs to asbestos removal works boundaries for the duration of the asbestos removal works and until final clearance of the relevant area has been provided by the Asbestos Consultant.
- The Remediation Contractor shall be responsible for ensuring that any workers completing any asbestos related works are appropriately trained and have the appropriate levels of health monitoring as required and detailed in SWNSW (2019).
- A decontamination area shall be established for investigation area personnel to enter and exit the asbestos removal area. A similar plant/machinery decontamination area shall also be established as appropriate to enable decontamination of plant/machinery prior to exit from the works area.
- The Remediation Contractor shall ensure that sufficient asbestos related personal protective equipment (PPE), in addition to normal site PPE requirements, is available for all personnel for the duration of the proposed asbestos remediation works including:
    - Disposable coveralls must be worn (Type 5, Category 3 or better);
    - Disposable gloves – non disposable gloves must be cleaned within the decontamination unit;
    - P2 class respirator or higher – non disposable respirators must be cleaned in the decontamination area. Respirators should be issued for personal use only and shall be kept in a clean condition; and
    - Laceless steel capped rubber soled work shoes or gumboots.
- All disposable PPE shall be disposed as asbestos waste. Non-disposable PPE shall be cleaned and stored in accordance with the requirements of SWNSW (2019).
- Plant operators undertaking sub-surface intrusive works must close cabin doors and windows and set air conditioning to re circulate when operating within the asbestos work zone or alternatively, the plant must be fitted with HEPA filters to the air conditioner inlet vents to ensure a suitable air supply. Should plant operators need to leave the isolated cabin within the asbestos removal works zone, they will be required to don the PPE requirements as outlined above.

6.5.2 Asbestos Controls

Based on the available environmental data, portions of soil within the investigation area as defined in **Section 4.1** comprise soils contaminated by asbestos, and are provisionally classified as 'asbestos contaminated soils' until/unless deemed otherwise by further assessment.

Asbestos contaminated soil necessitating management for potential asbestos exposure is defined in *How to Manage and Control Asbestos in the Workplace Code of Practice* (SafeWork NSW 2019a[19]) as:

- Soil that contains visible asbestos as determined by a competent person; or

[19] *How to manage and control asbestos in the workplace - Code of Practice*, Safe Work NSW, 2019 (SWNSW 2019a)

- Soil that contains asbestos fibres at quantities exceeding trace levels (considered to be the analytical detection limit in lieu of alternate guidance) as reported by analysis undertaken in accordance with *AS4964:2004 Method for the qualitative identification of asbestos in bulk samples*.

Environmental, health and safety management requirements for the handling of these materials will be documented in an AMP to be prepared based on the requirements provided for asbestos-related works in SafeWork NSW (2019b[20]). This will include preparation of an asbestos register and associated asbestos removal control/management plan as outlined in SafeWork NSW (2019a and 2019b).

Where sampling and analysis of specific fill materials is completed in conjunction with inspection by a competent person, and the results indicate the material does not fall within the "asbestos contaminated soil" definition, the requirements for management of "asbestos contaminated soils" will not be required to be implemented.

For the purposes of remediation works within the investigation area, a competent person shall be considered to be a person who holds a tertiary degree in a science of engineering discipline, has experience in contaminated site assessment, has completed a WorkSafe approved Asbestos Removal Supervisor course.

6.5.3 Emu Picking of Surface Bonded ACM Fragments

The identified areas of bonded ACM fragment impacts will be designated by the Environmental Consultant and the Remedial Contractor will commence the Emu picking process which comprises raking the top 100 mm of soils with rakes and removing all visible ACM fragments. Inspection of material and collection of ACM fragments will be undertaken on a grid basis and at least two passes across the investigation area made with a 90^{o} direction change between each pass. This inspection shall continue until two passes are successfully completed with no asbestos being identified. During the detailed ground surface inspection, any occurrences of ACM identified to be present in quantities or conditions that are unable to be removed by hand shall be excavated via more rigorous hand excavation (e.g. shovels) where possible.

All removed ACM fragments and associated PPE shall be placed into 200 µm thickness plastic waste bags, labelled as 'Asbestos Waste'. Waste bags shall not be filled past 50% of their volume and bags shall be sealed via 'goose-neck' tie and securing with duct tape, or similar. ACM fragments will be the subject of off-site disposal as Special (Asbestos) Waste.

During the detailed investigation area ground surface inspection, any occurrences of ACM that is identified to be in quantities or conditions that are unable to be removed by hand shall be excavated via more rigorous hand excavation (e.g. shovels) where possible.

Once advised by the Remedial Contractor that Emu Picking has been completed within a relevant area, the Environmental Consultant will then validate the footprint as per the procedure presented in **Section 8**.

Following successful validation of the surface soils for the presence of asbestos, the validated soils are able to be retained anywhere within the investigation area without the requirement for further remediation or management.

6.5.4 Excavation Dewatering

Excavation dewatering is not anticipated to be required during works. Where substantial water ingress is observed during excavation dewatering, the Environmental Consultant is to advise of appropriate remediation and/or management requirements in relation to the water.

[20] *How to safely remove asbestos - Code of Practice*, Safe Work NSW, 2019 (SWNSW 2019b)

6.5.5 Waste Classification of Surplus Soils

Integral to the selected remedial strategy is the disposal of contaminated soils from the investigation area. All materials proposed to be excavated and disposed from the investigation area, require to be classified in accordance with NSW EPA (2014) Waste Classification Guidelines, or an appropriate exemption as created under the *Protection of the Environment Operations (Waste) Regulation 2014*.

The requirement for sampling and laboratory analysis of soils shall be determined based on material volume, consistency, and preliminary characterisation from existing investigation area data. The minimum sampling densities, with consideration to the requirements of EPA (2022) and ASC NEPM (Schedule B2, s.7.5.2) are provided in **Table 8.3**. Samples will require to be analysed for contaminants of potential concern (COPC), determined on the basis of review of the existing investigation area data. Where the potential contaminants within the subject soil are unable to be determined by review of the material's origin/character, a broad suite of analysis will be conducted on all samples.

Based on a review of the soil data set for the investigation area as summarised in **Appendix B**:

- Natural soils within the investigation area are potentially able to be classified as VENM;
- The majority of investigation area soils are considered likely able to be classified as general solid waste (GSW); and
- Soils which contain asbestos in any detectable concentration are additionally classified as Special (asbestos) waste.

There is further potential for surplus excavated material unable to be classified as VENM, other than asbestos impacted material, to be reclassified for potential beneficial re-use (CT1 recyclable, excavated natural material (ENM), etc.) subject to further waste classification assessments.

Waste classification reports are required to be prepared for all soils proposed to be disposed from the investigation area prior to their disposal. Material will require to be removed to a facility lawfully able to receive it, with transportation and disposal records required to be kept for review as part of the validation assessment and inclusion in the validation report (**Section 8.6**).

6.5.6 ACM Impacted Fill/Soil Excavations

Management of identified ACM impacted soils will proceed as follows:

- The preliminary extent of ACM impacted soils will be marked out by the Environmental Consultant, based on **Figure 5**;
- The Remedial Contractor will undertake a detailed inspection of the ground surface across the investigation area and remove all visible ACM fragments.
- The Remedial Contractor will commence excavation of the soils to the depth of ACM impacted fill;
- The Remedial Contractor will use appropriate tools/machinery (e.g. excavator / backhoe) to progressively excavate ACM impacted soils under the supervision of the Environmental Consultant, to the base of the impacted material profile;
- Excavated soils will be placed directly into waiting trucks or, where temporary stockpiling is required, stockpiled in accordance with the requirements of stockpiling (**Section 6.5.4**);
- The Environmental Consultant shall inspect the base and walls of excavations for visible ACM and conduct a validation assessment as per the procedure presented in **Section 8.3.1**. Excavation works will continue until such time as the side and base margins of the excavation are visually free of asbestos containing material. Excavation stability will be

monitored by the Remediation Contractor and appropriate measures implemented to ensure appropriate management of excavation stability at all times;

- Where impacted material is temporarily stockpiled outside of identified impacted areas and is placed on plastic or geofabric, a visual inspection only of the stockpile footprint will be required following loading into trucks for disposal. Where impacted material is temporarily placed on unsealed ground, the area is to be validated by JBS&G as per **Section 8.3.2**. Should validation fail, the failed base will be excavated a further 0.2 m in the direction of the failure and the validation process repeated until validation is successfully achieved; and
- The final site surface within the investigation area will also be required to be cleared of visible asbestos in accordance with the validation procedures in **Section 8**.
- Once validation is achieved, the consultant will advise the contractor that the excavation area can be reinstated with validation site won or imported soil (**Section 8.3.4**), or if reinstatement is not required for development levels, the area can be made safe.

The Remedial Contractor is responsible for ensuring that access to open excavations and exposed soils is controlled during works.

During all ACM impacted soil disturbance works, asbestos controls are required to be implemented as specified in **Section 6.4.3**.

6.5.7 Soil Importation

Prior to importation of all soil material, appropriate assessment of such materials must be completed to demonstrate the material is both fit for purpose and suitable from a contamination view point. In accordance with NSW EPA requirements, the extent of assessment will be determined by the type of material proposed to be imported.

Where material proposed to be imported is Virgin Excavated Natural Material (VENM), an assessment must demonstrate that the material is compliant with the definition of VENM as presented in the POEO Act 1997, adopting in the minimum requirements for characterisation of fill material as presented in the NSW EPA's Sampling Design Guidelines (EPA 2022).

Where material proposed to be imported has been characterised under the Resource Recovery Framework (Order/Exemption), the material must firstly be demonstrated by the supplier as suitable for use in accordance with the requirements of the Order via provision of a statement of compliance. Suitable materials are anticipated to comprise but will not necessarily be limited to: excavated natural material (ENM), recycled aggregate, basalt fines, compost, mixed organic waste, pasteurised garden organics and recovered fines, with reference to the list of current orders and exemptions on the NSW EPA website.

In addition to the testing completed by the supplier, given the low frequency of compliance testing required under these Exemptions, the specific material proposed to be imported will require an additional compliance assessment prior to approval to import. The additional assessment is required to ensure that the incoming material does not pose an unacceptable risk to human health and/or environment at the placement site and is therefore suitable for use. It is anticipated that such assessment activities will include visual inspections, representative sampling and laboratory analysis of material to demonstrate the material meets the requirements of this RAP. As for VENM assessments, it is considered suitable to define such requirements on a specific site basis given the potential variability of project site requirements.

All loads of imported materials are required to be inspected to ensure consistency with the documented condition of the proposed material. Loads identified to be non-conforming with the proposed materials are to be rejected and returned to the supplier, or otherwise disposed of at a lawful facility from site. Material tracking records in addition to the import assessment report are

required to be included in the final validation report for the investigation area. Further details of the required material tracking documentation for inclusion in the validation report is presented in **Section 6.5.5** and **Appendix C**. Assessment of imported soil shall be undertaken in accordance with the validation plan presented in **Section 8.3.5**.

6.5.8 Stockpile Management Procedures

The following section applies to general stockpile management procedures required to be implemented during all stockpiling. Where stockpiles are required to be kept on site for a period exceeding 24 hours, the following management protocols shall be implemented by the Remedial Contractor.

All materials stockpiled onsite will be managed by the Remedial Contractor. Minimum requirements for material tracking are provided in **Section 6.5.5**. Unique numbers will be provided for each stockpile, the source of the stockpile, its estimated volume, material characterisation and its location onsite (via global positioning satellite) recorded.

The following procedures will be implemented by the Remedial Contractor:

- No stockpiles of soil or other materials shall be placed on footpaths or nature strips unless prior Council approval has been obtained;
- All stockpiles of soil or other materials shall be placed away from overland flow paths, drainage lines, gutters or stormwater pits or inlets;
- All stockpiles of soil or other materials likely to generate dust or odours shall be covered with plastic or geofabric sheeting; and
- All stockpiles of contaminated soil shall be placed on plastic sheeting to limit cross contamination of the underlying soils and stored in a secure area.

6.5.9 ACM Containing Infrastructure Removal

Existing infrastructure including a Telstra pit and Fire Hydrant pipework has previously been identified as present insitu within the investigation area. It is noted that there is also the potential that further such infrastructure may remain insitu at the investigation area and be encountered during earthworks. To minimise the potential worker contamination exposure and migration risks associated with these materials, it is proposed to identify and remove this infrastructure as a discrete activity to the extent practicable. This will comprise implementation of the following procedure:

- the identified ACM materials will be tagged and their below ground entry/exit point locations recorded by a registered surveyor for identification following removal of above ground infrastructure;
- Airborne asbestos monitoring to be completed by the Asbestos Consultant for the duration of works and until a clearance certificate has been supplied. Daily results shall be displayed on the site noticeboard for the information of investigation area workers or be made available upon request.
- The infrastructure trench backfill material will be carefully excavated by the Remediation Contractor with the material temporarily stockpiled to the side of the excavation (on hardstand, were available). Care should be taken when excavating down to expose the asbestos cement pipe to avoid breakages to the asbestos cement during the excavation. The excavation should be adjacent the path of the pipe to minimise the potential for accidental damage. If possible, the asbestos cement pipe should be removed in whole sections between joins;

- In the event that the asbestos cement pipe is already damaged when exposed, or damaged during the removal works, there is the potential for asbestos fibres to contaminate the surrounding soils. In this instance, the broken fragments and surrounding soils should be excavated and also removed as asbestos waste.
- Removed sections of asbestos cement pipe shall be double wrapped in 200 µm thick plastic or placed in a lined skip bin for offsite disposal as Special (asbestos) Waste. Bags shall be filled to no more than 50% of capacity and contents shall be 'wetted' down before sealing. Bags shall be 'goose-neck' tied and sealed with suitable gaffe tape or similar. Asbestos waste bags shall be decontaminated prior to removal from investigation area and shall be labelled with appropriate asbestos warning labels indicating the waste bags contents.
- Following removal of the pipework, an inspection will be completed by the Environmental Consultant of the resulting trench base and sides to identify the potential presence of associated asbestos impacts within the soil. Where physical indicators of asbestos impact are not identified, the excavation will be the subject of validation sampling in accordance with the requirements of **Section 8**. Should visual indicators of asbestos impact remain, the excavation will be extended vertically and/or laterally to remove the impacted material, which will be stockpiled separately to the overburden, for subsequent waste classification assessment. Once the faces are assessed as visually clear, validation sampling will be undertaken.
- Where the ACM infrastructure extends beyond the investigation area boundary, the remaining exposed asbestos cement pipe end at the extent of the investigation area excavation/work area must be appropriately sealed and/or wrapped in plastic. The location of the remaining in situ asbestos cement pipe should be documented and included in the investigation area validation assessment report.
- Should the pipework excavation works identify the presence of more widespread asbestos impacted soil conditions, no attempt will be undertaken to discretely validate the trench, or chase out the complete extent of impact. The area unable to be validated as a trench will be reassigned as requiring implementation under the procedures outlined in **Section 6.4.3**.

6.5.10 Material Tracking

Movement of materials will be required within the investigation area and shall be subject to a material tracking plan. The tracking system is designed to track the quantity and character of materials from their arrival within the investigation area or point of generation within the investigation area, through temporary storage to final placement.

The system is detailed in **Appendix C**.

6.5.11 Site Disestablishment

On completion of the remediation works all plant/equipment and safety/environmental controls shall be removed from the investigation area by the Remedial Contractor. All equipment used during asbestos remediation works will need to be appropriately decontaminated or disposed of as asbestos waste by the Remedial Contractor, in accordance with Safe Work Australia (SWA 2020[21]), NSW EPA (2014) and relevant waste regulations.

6.6 Contingency Plan

Given the available site history information, consideration has been given to the potential for additional small scale issues that may arise during works (from a contamination viewpoint). Should further impacted material (i.e. not previously identified in historical investigations) be identified as

[21] *How to safely remove asbestos – Code of Practice*, Safe Work Australia, July 2020 (SWA 2020)

part of an Unexpected Find during construction works, the remedial options screening matrix in **Table 5.1** will be required to be reviewed.

Notwithstanding, due to the site history and relatively shallow depth of fill it is anticipated that any impacts will be associated with either buried ACM impacted material or other material of aesthetic concern, which based upon the extent of former excavations will be relatively isolated and could be appropriately managed through either on site treatment/management or controlled excavation and off-site disposal as discussed for various material types above.

6.7 Site Management Plans

6.7.1 Construction / Remediation Environmental Management Plan

Management procedures specific to the known contamination issues at the investigation area have been documented through **Section 6**. Further environmental and human health management practices will be required to be employed, consistent with the conditions of development consent.

Future construction and/or remediation management plans are required to be prepared to address the conditions of development consent, which will be required to be followed during remediation works. These plans may incorporate provisions regarding:

- Hours of site operation;
- Soil and water management plans;
- Access;
- Noise;
- Vibration;
- Air quality;
- Dust control;
- Odour / volatile emissions control;
- Waste management;
- Signage and contact numbers;
- Security; and
- Community consultation.

6.7.2 Work Health and Safety Plan

A Work Health & Safety Management Plan (WHSP) shall be prepared by the Remedial Contractor prior to commencement of remediation works on the investigation area. The WHSP shall contain procedures and requirements that are to be implemented as a minimum during the works. The WHSP shall make particular note of the presence of investigation area contaminants, including asbestos, and the relevant controls required during works to maintain human health and the environment consistent with the requirements of this RAP.

The WHSP will require to document work methods which consider work health and safety aspects associated with the presence of contamination.

The objectives of the WHSP are:

- Ensure all regulatory requirements for the proposed works are satisfied;
- To apply standard procedures that minimises risks resulting from the works;

- To ensure all employees are provided with appropriate training, equipment and support to consistently perform their duties in a safe manner; and
- To have procedures to protect other workers and the general public.

These objectives will be achieved by:

- Assignment of responsibilities;
- An evaluation of hazards;
- Establishment of personal protection standards, mandatory safety practices and procedures;
- Monitoring of potential hazards and implementation of corrective measures; and
- Provision for contingencies that may arise while activities are being conducted at the investigation area.

7. Contingency Measures

A review of the proposed contamination-related aspects of the works associated with development the site has been undertaken and has identified a number of potential risks, outlined in the following sections that required the development of contingencies to ensure that the objectives of this RAP are met.

Contingency actions to be undertaken where these risks are realised during the works are described in the following sections.

7.1 Unexpected Finds

The possibility exists for hazards that have not been identified to date to be present within fill materials or underlying pavements/building across the investigation area. The nature of hazards which may be present and which may be discovered at the investigation area are generally detectable through visual or olfactory means, for example:

- The presence of significant aggregates of friable asbestos materials (visible) as opposed to ACM fragments on the ground surface and/or incorporated within fill material; and/or
- Excessive quantities of sulfur and/or sulfidic odours within soils; and/or
- Excessive quantities of Construction/Demolition Waste (visible); and/or
- Hydrocarbon impacted materials (visible/odorous); and/or
- Drums, waste pits, former pipework or underground storage tanks (USTs) (visible); and/or
- Oily Ash and/or oily slag contaminated soils/fill materials (visible/odorous); and/or
- Tarry like impacted soil/fill material (visible/odorous).

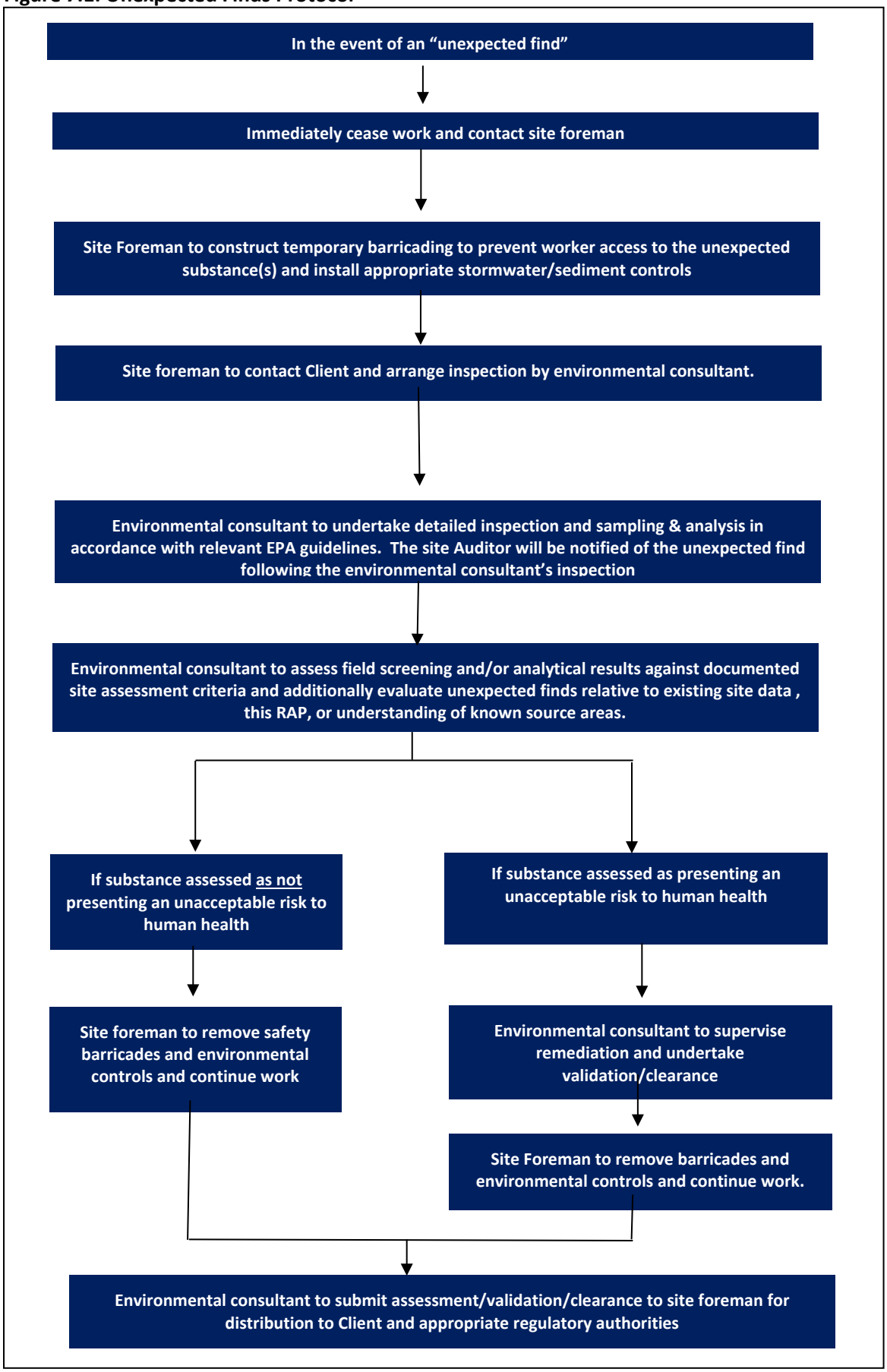
As a precautionary measure to ensure the protection of the workforce and surrounding community, should any of the abovementioned substances (or any other unexpected potentially hazardous substance) be identified, the procedure summarised in **Figure 7.1** is to be followed.

An enlarged version of the unexpected finds protocol, suitable for use on site, should be posted in the site Office and referred to during the site-Specific Induction by the Remediation Contractor.

The sampling strategy for each “unexpected find” shall be designed by a suitably qualified environmental consultant. The strategy will, however, be aimed at determining the nature of the substance – that is, is it hazardous and, if so, is it at concentrations which pose an unacceptable risk to human health or the environment.

The sampling frequency of the identified substance/materials shall meet the minimum requirements outlined in Table 2 of NSW EPA (2022) or ASC NEPM (Schedule B2, S7.5.2).

Figure 7.1: Unexpected Finds Protocol



7.2 Friable Asbestos Impacts

Should friable ACM be observed or detected in soil, including asbestos fines or fibrous asbestos (AF/FA), the following procedure will apply.

Prior to commencing the asbestos removal works, a Class A asbestos removal contractor is required to be engaged to conduct the works. The asbestos removal contractor will also be responsible for setting up the worksite and implementing appropriate asbestos controls consistent with SafeWork NSW guidelines and procedures outlined in this RAP. This includes the necessary SafeWork NSW notification for friable asbestos removal works.

The friable ACM impacted soils, which includes co-mingled bonded ACM, will be delineated under the direction and supervision of an Environmental Consultant (or Licenced Asbestos assessor (LAA)). The procedure for undertaking this excavation activity will be as follows:

- Observation of excavations and identification of impacted soils;
- Set up of airborne asbestos air monitoring by LAA, in accordance with **Section 9.11**;
- Excavation of impacted soils to lateral and vertical extent of physically identifiable impact, for validation sampling of excavation walls and base by the Environmental Consultant in accordance with **Table 8.3**, with additional removal of soils where impact extends laterally and vertically; and
- Impacted soils transferred to a temporary soil stockpiling area within the investigation area or directly loaded into a truck for offsite disposal to a licensed waste facility.

The excavation will be inspected by a LAA prior to sampling of the walls and base of each of the excavations for asbestos (500 mL per NEPC (2013)) at the minimum frequencies nominated in **Table 8.3** and any other relevant COPCs where applicable. Where impacted material is temporarily stockpiled outside of identified impacted areas and is placed on plastic or geofabric, a visual inspection only of the stockpile footprint will be required following loading into trucks for disposal.

7.3 Identification of Oily Materials

In the event that oily materials are encountered, the provisions outlined in the unexpected finds protocol will be implemented, comprising inspection, testing and appropriate action as advised by the Remediation Consultant.

Any suspected oily materials must be segregated from other excavated materials and placed in a designated area with appropriate odour and sediment controls until such time as appropriate assessment is completed and a methodology is confirmed for their appropriate management. In the event that the oily materials do not meet the Site Validation Criteria, then they shall be removed from the investigation area and disposed of at an appropriately licensed facility.

7.4 Material Storage Breach

In the event that any materials storage containment controls are breached and stockpiled materials classified as asbestos contaminated soil or otherwise have escaped (or have the potential to escape), then the management controls shall be rectified and investigations undertaken to review the adequacy of the controls and any improvements implemented. The site management plan (**Section 9.5**) shall include a documented process for identifying and responding to such incidents.

7.5 Emissions Complaints

Due to the nature of the activities and type of contaminants identified at the investigation area, it is unlikely that there will be complaints received from members of the public relating to environmental emissions.

7.6 Excavation Validation Failure

In the unforeseen event that the proposed remediation works do not meet the validation criteria, or if the selected remedial strategy is unsuccessful, the following actions will be considered to ensure firstly the safety and health of people and the environment and secondly that the overall project objectives are achieved:

- Continued controlled excavation and off-site disposal or treatment of impacted/ contaminated material until validation is achieved; and
- Reassessment of remedial options for excavated materials, including alternate on-site containment options for subsurface asbestos contaminated material and/or excavation and off-site disposal of significantly contaminated surface impacted material.

7.7 Change in Development Plans

In the event that the approved development plans are changed from those available at the time of preparation of this RAP then the RAP may require to be revised. Minor changes should be able to be captured in specific work plans prepared.

Any changes to the development plans that alter the planned remediation works, as detailed herein and/or associated attachments/plans, must be incorporated into the appropriate documents. Subsequently, any revisions or updates to the RAP, and associated attachments/plans, must be reviewed and approved by the Site Auditor prior to implementation.

8. Validation Plan

8.1 Overview

Validation data is required to be collected to verify the effectiveness of the remediation works and document the condition of the investigation area as being suitable for the proposed land use. Validation activities will be required for the following:

- Validation of successful removal of lead impacted soils;
- Validation following removal of potential ACM infrastructure;
- Validation that the final investigation area surface (top 100 mm soil profile) does not contain visually identifiable asbestos impacts or other unacceptable aesthetic issues; and
- Validation of existing stockpiles/fly tipped material as suitable for beneficial reuse to the standard required by EPA (2022).

In practice, additional validation works will be required to demonstrate that the remediation was undertaken in accordance with this RAP and relevant regulatory requirements (e.g. material tracking, waste regulation compliance, etc.) This section provides details on the validation assessment requirements for the investigation area.

8.2 Data Quality Objectives

Data Quality Objectives (DQOs) were developed for the validation program, as discussed in the following sections.

8.2.1 State the Problem

JBS&G (2021 and 2023) have identified the presence of contaminated media and/or material of aesthetic concern at the investigation area. The contaminated media require to be remediated and the aesthetic concerns addressed to make the investigation area suitable for the proposed development.

Environmental data is required to demonstrate that remediation works implemented at the investigation area have achieved the objectives of the remediation. Specifically, sufficient data is required to be obtained to verify that remediation works were undertaken in accordance with the methodology described in **Section 6**, and that potential risks to future receptors under the proposed redevelopment scenario have been mitigated to low and acceptable levels.

8.2.2 Identify the Decision

The following decisions are required to be made during the validation works:

- Are there any unacceptable risks to future on-site receptors from any residual contamination following the implementation of the proposed remediation/civil works at the investigation area?
- Are there any aesthetic issues remaining following remediation works?
- Have all materials imported to the investigation area been demonstrated as environmentally suitable for their proposed use?
- Is ongoing management required for any residual contamination related impacts at the investigation area?
- Is the investigation area suitable for the proposed use?
- Have waste materials been classified and disposed of from the investigation area in accordance with the RAP and relevant regulatory guidelines?

- Have the works been completed in accordance with the RAP, or where variations to the works were required, have these met the objectives of the RAP, with respect to investigation area validation?
- Is all validation data considered reliable?
- Is the investigation area suitable for the proposed use?

During the remediation/management activities, sufficient validation of site activities is required to demonstrate that the identified environmental and health based risks to future on-site receptors have been adequately managed to render the site suitable for the proposed land use.

8.2.3 Identify Inputs to the Decision

The following inputs will be considered within the decision:

- Desktop information and previous investigations: (Coffey 2009; AECOM 2009 & AECOM 2011) and JBS&G (2019, 2021, 2023a and 2023b);
- Site observations made as documented in historical investigations (**Section 3**);
- The contamination status documented in **Section 4**;
- Data generated by this investigation:
    - Observations: soil types, depths, quantities, inclusions, other readily identifiable characteristics and laboratory analytical data;
    - Laboratory Analytical Data: for concentrations of relevant parameters (contaminant concentrations, physicochemical conditions, etc.);
    - Survey Data: height and geographic coordinates of contaminated media (such as soils);
- Disposal dockets and relevant documents in relation to appropriate disposal of material (if required) to be removed from investigation area as part of the remediation works (landfill dockets, EPA Waste Locate, beneficial reuse / recycling dockets, trade waste disposal, etc.);
- Decision Thresholds: screening and/or assessment levels adopted from endorsed regulatory guidance documents (**Section 8.5**);
- Management measures documented within an Asbestos Register/Management Plan (if required) to ensure compliance with WHS legislation; and
- Data quality indicators (DQIs) as assessed by quality assurance / quality control (QA/QC).

8.2.4 Define the Study Boundaries

The validation study boundaries are restricted to the lateral extent the investigation area, comprising the Investigation Area as shown on **Figure 2**. The vertical extent of the validation study is anticipated to be restricted to the maximum depth of excavation works and/or stockpile movement activities required to achieve investigation area validation requirements.

Due to the nature of potential contaminants identified, temporal variables will not be assessed as part of the validation assessment activities. The temporal boundaries of investigations will be limited to the period of field validation assessment works.

8.2.5 Decision Rules

The decision rules adopted to answer the decisions identified in **Table 8.1** following.

Table 8.1: Decision Rules

Decision Required to be Made	Decision Rule
1. Are there any unacceptable risks to future on-site receptors from any residual contamination following the remediation of contaminated materials on-site?	At the completion of all fill investigation area remediation/management works, if the investigation area surface comprises material validated as free of visible asbestos and all identified areas of investigation area contamination have been appropriately removed, the answer to the decision is No. Otherwise, the answer to the decision will be Yes.
2. Are there any aesthetic issues remaining following remediation works?	Where: No visible asbestos is present in the walls and base of the excavations, and the soil samples are free of detectable asbestos; and No visible asbestos is present on the ground surface and/or in the top 100 mm of final development soil profiles as confirmed by inspection of retained soils and/or placement of validated imported material; and/or All ACM impacted soils have been disposed of from the investigation area; The answer to the decision will be Yes. Otherwise the answer to the decision will be No
3. Have all materials imported to the investigation area been demonstrated as environmentally suitable for their proposed use?	Soil analytical results for existing stockpiles and/or imported material will be compared against the assessment criteria. Where no statistically significant exceedances of the site assessment criteria are identified, the answer to the decision will be Yes. Otherwise the decision will be No.
4. Is ongoing management required for any residual contamination related impacts at the investigation area?	Where any asbestos impacted/contaminated soils are retained at the investigation area, the decision will be Yes. Otherwise the decision will be No.
5. Is the investigation area suitable for the proposed use (subject to ongoing management if required)?	Where the decision to one or more of questions 1-4 is Yes, the decision is Yes. Otherwise the decision is No and further remediation/management will be required to be undertaken.
6. Have waste materials been classified and disposed from the investigation area in accordance with the RAP and relevant regulatory guidelines?	Where: All soils disposed from the investigation area are classified in accordance with NSW EPA (2014) prior to disposal; and Disposal / tipping dockers are available for all soil disposed from the investigation area. The answer to the decision is Yes. Otherwise the answer to the Decision is No.
7. Have the works been completed in accordance with the RAP, or where variations to the works were required, have these met the objectives of the RAP?	Evaluation of the RAP requirements and completed scope of works will be completed on a qualitative basis. The completed works should be consistent with the RAP objectives. Where this is the case, the answer to the decision is Yes. Otherwise the answer to the Decision is No.
6. Is validation data considered reliable?	Did analysis of the Data Quality Indicators as provided in **Table 8.2** indicate the validation data was reliable? If Yes, the answer to the decision is Yes. Otherwise, the answer to the decision is No.
7. Is the investigation area suitable for the proposed use?	Is the answer to Questions 5 and 6 is Yes, then the answer to the decision is also Yes. Otherwise, the answer to the decision is No. In this instance further remediation/ management actions will require to be implemented and appropriately documented such that a future review of the above decisions may result in a different decision outcome.

8.2.6 Specify Limits of Decision Error

This step seeks to establish the decision maker's tolerable limits on decision errors, which are used to establish performance goals for limiting inherent uncertainty in the data. Data generated during this project needs to robust and reliable to facilitate decisions to be made with confidence.

Specific limits for this project were adopted in accordance with the appropriate guidance from the NSW EPA, ASC NEPM, appropriate indicators of data quality indicators (DQIs) used to assess quality assurance/quality control (QA/QC) and standard JBS&G procedures for field sampling and handling.

To assess the useability of the data prior to making decisions, the data were assessed against pre-determined DQIs to assess precision, accuracy, representativeness, comparability, completeness and

sensitivity (PARCCS parameters). The acceptable limit on decision error was 95% compliance with DQIs.

The QA/QC program is documented in **Table 8.2**.

- **Precision** – measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples for chemical COPCs. For asbestos precision is assessed by whether the identification results for duplicate samples were in agreement with the original sample.
- **Accuracy** – measures the bias in a measurement system. The accuracy of the laboratory data that are generated during this study is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards. Note only applied to chemical COPC.
- **Representativeness** –expresses the degree which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the investigation area, and by using an adequate number of sample locations to characterise the investigation area to the required accuracy.
- **Comparability** – expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; and ensuring analysing laboratories use consistent analysis techniques; and reporting methods.
- **Completeness** – is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.
- **Sensitivity** – expresses the appropriateness of the chosen laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted assessment criteria.

Table 8.2: Summary of Data Quality Indicators for Soil Validation Program

Data Quality Indicators	Frequency	Data Quality Criteria
Precision		
Split duplicates (intra laboratory)	Split duplicates (intra laboratory)	Split duplicates (intra laboratory)
Blind duplicates (inter laboratory)	Blind duplicates (inter laboratory)	Blind duplicates (inter laboratory)
Laboratory Duplicates	Laboratory Duplicates	Laboratory Duplicates
Accuracy		
Surrogate spikes	Surrogate spikes	Surrogate spikes
Laboratory control samples	Laboratory control samples	Laboratory control samples
Matrix spikes	Matrix spikes	Matrix spikes
Representativeness		
Sampling appropriate for media and analytes	Sampling appropriate for media and analytes	Sampling appropriate for media and analytes
Samples extracted and analysed within holding times.	Samples extracted and analysed within holding times.	Samples extracted and analysed within holding times.
Laboratory Blanks	Laboratory Blanks	Laboratory Blanks
Trip spike	Trip spike	Trip spike
Storage blank	Storage blank	Storage blank
Rinsate sample	Rinsate sample	Rinsate sample
Comparability		
Standard operating procedures for sample collection & handling	Standard operating procedures for sample collection & handling	Standard operating procedures for sample collection & handling
Standard analytical methods used for all analyses	Standard analytical methods used for all analyses	Standard analytical methods used for all analyses
Consistent field conditions, sampling staff and laboratory analysis	Consistent field conditions, sampling staff and laboratory analysis	Consistent field conditions, sampling staff and laboratory analysis
Limits of reporting appropriate and consistent	All Samples extracted and analysed within holding times	All samples[2]
Completeness		
Sample description and COCs completed and appropriate	All Samples	All samples[2]
Appropriate documentation	All Samples	All samples[2]
Satisfactory frequency and result for QC samples		95% compliance
Data from critical samples is considered valid	-	Critical samples valid
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted assessment criteria	All samples	LOR<= Site assessment criteria

[1] If the RPD between duplicates is greater than the pre-determined data quality indicator, a judgment will be made as to whether the excess is critical in relation to the validation of the data set or unacceptable sampling error is occurring in the field.

[2] A qualitative assessment of compliance with standard procedures and appropriate sample collection methods will be completed during the DQI compliance assessment.

8.2.7 Optimise the Design for Obtaining Data

The purpose of this step is to identify a resource-effective field investigation sampling design that generates data that are expected to satisfy the performance criteria, as specified in the preceding steps of the DQO Process.

The output of this step is the sampling design that will guide development of the field sampling and analysis plan. This step provides a general description of the activities necessary to generate and select data collection designs that satisfy decision performance criteria.

The remediation validation and subsequent laboratory analysis program as outlined in the following sections will need to be implemented during investigation area remediation activities to demonstrate the successful completion of works in compliance with the RAP goals. The validation / characterisation sampling and analytical program for the investigation area is outlined in **Table 8.3** following as specific to the environmental characterisation of materials.

Table 8.3: Validation Analytical Schedule

Item	RAP Sampling Frequency			Analytes
	Excavation Base	Excavation Walls	Materials	
Excavations formed by removal of lead impacted soils	1 / 25 m^2	1 / 5 lineal metres per 1 m depth interval, samples representing the impacted material horizon, with minimum of 1 per wall	-	Lead
Excavations formed by removal of ACM impacted soils / ACM infrastructure	1 / 100 m^2	1/ 10 lineal metres per 1 m depth interval with minimum of one per wall	-	10 L field asbestos quantification Asbestos WA (500 mL)
Asbestos stockpile footprint validation	1/100 m^2	N/A	-	10 L field asbestos quantification Asbestos WA (500 mL)
Excavations formed by removal of unexpected finds	1 / 25 m^2	1 / 5 lineal metres per 1 m depth interval with minimum of 1 per wall	-	To be determined by the environmental consultant based on the UF assessment
Existing Stockpiles/Fly tipped material	N/A	N/A	1/25 m^3 for <200m^3, minimum of 3 For >200m^3, the lesser of a minimum of 10 samples, or 1:250 m^3 will be adopted with consideration to the homogeneity of the stockpiled material.	Heavy Metals TRH/BTEX OCPs/PCBs PAHs Asbestos (presence/absence)
Stockpile footprint validation	1/100 m^2	N/A	-	To be determined by the environmental consultant
Waste classification of materials requiring offsite disposal	N/A	N/A	1/250 m^3 with a minimum of 3 samples Where material is to be evaluated as free of asbestos – 1/75m^3 with minimum of 3 samples	Heavy Metals TRH/BTEX OCPs/PCBs PAHs Asbestos
Waste classification of unexpected finds	N/A	N/A	1 per 25m^3 up to 200 m^3, minimum of 3. Reduced sampling density for volumes >200 m^3 based on minimum number to use statistical analysis. Historical soil data to be considered where appropriate.	To be determined by the environmental consultant
Imported VENM, if required	N/A	N/A	Minimum of 3 samples per source site. Maximum 10 samples.	Heavy metals Total Recoverable Hydrocarbons (TRHs) Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) Polycyclic Aromatic Hydrocarbons (PAHs) Organochlorine Pesticides (OCPs) Polychlorinated biphenyls (PCBs) Asbestos (500mL)

Item	RAP Sampling Frequency			Analytes
	Excavation Base	Excavation Walls	Materials	
Imported Recycled/Recovered Products	N/A	N/A	Minimum of 3 samples per source site.	Heavy metals TRH/BTEX PAHs OCPs/PCBs Asbestos (500mL)
All imported materials	N/A	N/A	Visual inspection upon arrival at the investigation area and regular visual inspections during importation.	Visual inspection only, free of anthropogenic materials or odour/staining

8.3 Validation Inspections and Sampling Methodology

Validation inspections and associated sampling activities as outlined in the following sections will be undertaken by an appropriately trained and experienced environmental consultant. Soil logs and sample registers will be prepared for each location showing soil description, sampling depths and sampling intervals. Photographic records will also be maintained. Aesthetic indicators of impact will be assessed for all soils consistent with the parameters identified in **Section 7** as appropriate to assist with validation assessments.

The soil sampling method shall be determined by the Environmental Consultant as consistent with the observations and appropriate to generate representative samples. The soil sampling method shall be consistent with the data quality indicators in **Table 8.2**.

Soil will be sampled whilst wearing disposable nitrile gloves and placed into laboratory prepared sampling containers. All samples will be labelled with a unique identifier consisting of the sample location and date and time of sampling. Samples will be placed directly into a chilled esky following collection and transported to a National Association of Testing Authorities, Australia (NATA) accredited laboratory under Chain of Custody (CoC) protocols.

The decontamination of personnel, PPE and sampling equipment (if used) will be in accordance with JBS&G's standard procedures to minimise risks to health and safety and cross contamination. Where dedicated disposable sampling equipment cannot be used, non-dedicated sampling equipment will be scrubbed and washed in Decon 90 solution and rinsed with de-ionised water. Disposable equipment will not require decontamination and reuse (i.e., nitrile gloves).

8.3.1 Validation of Asbestos Impacts

If identified, a validation inspection is required to be undertaken to demonstrate that any asbestos containing material has been remediated by removal of impacts to a standard suitable for the proposed land use.

Following removal of the identified asbestos impacted material at each location, validation of the ground surface and/or excavated area footprints will comprise an investigation area walkover on a 10 x 10 m transect to inspect the investigation area surface for any visible ACM, or within bonded ACM excavations, the presence of remaining fill material.

Should ACM be observed to remain on the ground surface – the area will require further emu picking/removal works until the surface is confirmed as comprising materials free of visible ACM. For ACM impacted fill material excavations, the area will be required to be considered free of visible fill material. The person completing the inspection will be required to be a Competent Person or LAA (as appropriate) and will provide a clearance when the validation objectives have been met.

8.3.2 Excavation Validation – ACM impacted Fill Material and Infrastructure Removal Areas

Validation of excavations shall be undertaken in accordance with the following process:

- Identification of the excavation, review of the RAP and/or relevant supporting data to identify the contamination issues within the subject area;
- Inspection of the exposed ground surface, excavation base and walls by a Competent Person or Licensed Asbestos Assessor (LAA). If any ACM, or building debris impacted fill material is observed at the extent of the excavation, then the excavation will be extended prior to completion of the visual validation inspection;
- Judgemental sampling of excavation walls at the rate specified in **Table 8.3**;
- Analysis of soil samples for COPCs relevant to the validation assessment; and
- Comparison of soil analytical results with the validation criteria (**Section 8.5**).

Samples will be collected by an appropriately trained and experienced environmental scientist/engineer using a hand trowel or from the bucket of mechanical excavation equipment, at the required densities to meet the project DQOs.

Prior to collection of each sample, hand tools will be thoroughly decontaminated using phosphate free detergent and distilled water. During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indicators of contamination will need to be noted on the field documentation.

8.3.3 Stockpile Footprint Validation

Where stockpiles formed as a result of remediation activities have been stored on hardstand, geo-textile or plastic lining, visual validation will be used for validation of the stockpile footprint. Validation sampling would only occur when a breach of the containment method is identified.

Where impacted material has temporarily been stored on unsealed ground surfaces, the validation program for the footprint of contaminated stockpiles is:

- Inspection of the stockpile footprint by a suitably trained and experienced person. If impacted material is identified, surface soils are required to be scraped (100 mm), and the footprint re-inspected until such time as visual validation is obtained;
- Following visual validation, soil samples will be collected from the footprint on a 10 m grid, and analysed in accordance with **Table 8.3**, based on the material type previously stockpiled; and
- If contamination is identified in a validation sample at concentrations above the adopted validation criteria, the soil represented by the failed validation sample will be scraped and managed (via on-site containment or off-site disposal), and the validation inspection and sampling process repeated for the failed area. Alternatively, where contamination is not identified in the samples by laboratory analysis, the footprint will be deemed to have been successfully validated.

8.3.4 Validation of Removal of Aesthetic Materials

Validation inspection is required to be undertaken to demonstrate that any material of aesthetic concern has been remediated by removal of aesthetic impacts to a standard suitable for the proposed land use, inclusive of ACM in near surface soils.

Once impacted soils are confirmed to have been removed, the material will be inspected by the Environmental Consultant to confirm visual aesthetic issues are no longer evident, based on the NEPC (2013) discussion of aesthetics as adopted herein for validation criteria.

A clearance inspection shall be conducted by a suitably qualified Environmental Consultant following completion of removal of unacceptable aesthetic material, including photographic records for inclusion in the validation report.

8.3.5 Stockpile Sampling

For stockpile sampling, material will be obtained from a minimum depth of 0.3 m below the surface of the stockpile at the time of sampling. Appropriate decontamination activities shall be followed following the collection of each sample.

During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indications of contamination will be noted on the field documentation.

8.3.6 Imported Material Validation

Imported material source sites will be visited by the Environmental Consultant where appropriate. Supporting documentation must be provided by the Remedial Contractor for imported materials to be assessed against the validation plan, relevant guidelines/exemptions and adopted criteria. The Environmental Consultant will collect additional samples and prepare appropriate documentation for imported materials in lieu of adequate information provided by the Remedial Contractor to ensure all material imported to the investigation area is validated. It is noted that where fresh quarried material is selected for import and use, written advice confirming the source of the material will not require additional inspection, sampling and analysis, beyond inspection upon receipt at the investigation area.

Sampling requirements for all non-quarried materials are detailed in **Table 8.3**.

8.3.7 Waste Disposal Off-Site

All wastes requiring off-site disposal must be classified in accordance with Waste Classification Guidelines (NSW EPA 2014). The Remedial Contractor is responsible for the lawful disposal of the classified waste to a licensed waste disposal facility lawfully able to accept the waste.

Disposal dockets for each individual off-site waste disposal load must be provided to the Principal and to the Environmental Consultant by the Remedial Contractor to demonstrate appropriate off-site disposal of waste occurred for investigation area validation purposes.

Materials destined for re-use across the investigation area as part of the overall remedial and design strategy are not considered to be waste materials. Thus, there is no need to assign a waste classification to these materials.

8.3.8 Validation of Unexpected Finds

The procedure described below shall be required if unexpected, impacted soils requiring remediation and validation are identified during the works, consistent with the unexpected find protocol presented in **Section 7.1**.

Samples will be collected and analysed in accordance with the analytical schedule (**Table 8.3**) by NATA accredited laboratories.

A suitably qualified Environmental Consultant will be required to assess unexpected finds and undertake the validation inspections and sampling to verify such finds have been addressed and the areas meet the validation criteria in this RAP.

8.3.9 Duplicate and Triplicate Sample Preparation and QA/QC Requirements

Field duplicate and triplicate samples for the characterisation/validation assessment will be obtained during sampling using the procedures outlined at a frequency outlined in **Table 8.3**. The primary sample will be divided laterally into three samples with minimal disturbance to reduce the potential for loss of volatiles and placed in three clean glass jars and / or plastic bags. All jars will be filled

completely with no headspace to reduce the potential for loss of volatiles and separately labelled as the primary, duplicate and triplicate samples before being placed in the same chilled esky for laboratory transport.

Trip spike, storage blank and rinsate samples will be collected where analysis for volatile compounds is required.

8.4 Laboratory Analysis

Laboratory methods and laboratory limits of reporting (LOR) as summarised in **Table 8.4** are proposed to be adopted for analysis of soil samples collected during remediation/validation activities. All laboratories are required to be National Association of Testing Authorities (NATA) registered for the relevant analyses. Appropriate methods and LORs are required for comparison to relevant criteria.

Table 8.4: Soil Laboratory Analysis Methods (all units in mg/kg unless stated)

Analyte	Limit of Reporting	Laboratory Method
METALS		
Arsenic	4.0	ICP-AES (USEPA 200.7)
Cadmium	1.0	ICP-AES (USEPA 200.7)
Chromium (total)	1.0	ICP-AES (USEPA 200.7)
Chromium (VI)	1.0	Alkali leach colorimetric (APHA3500-Cr/USEAP3060A)
Copper	1.0	ICP-AES (USEPA 200.7)
Lead	1.0	ICP-AES (USEPA 200.7)
Nickel	1.0	ICP-AES (USEPA 200.7)
Zinc	1.0	ICP-AES (USEPA 200.7)
Mercury (inorganic)	0.05	ICP-AES (USEPA 200.7)
TRH		
F1 C_6-C_{10}	10	Purge Trap-GCMS (USEPA8260)
F2 >C_{10}-C_{16}	50	Purge Trap-GCFID (USEPA8000)
F3 >C_{16}-C_{34}	100	Purge Trap-GCFID (USEPA8000)
F4 >C_{34}-C_{40}	100	Purge Trap-GCFID (USEPA8000)
BTEX		
Benzene	1.0	Purge Trap-GCMS (USEPA8260)
Toluene	1.0	Purge Trap-GCMS (USEPA8260)
Ethylbenzene	1.0	Purge Trap-GCMS (USEPA8260)
Total Xylenes	3.0	Purge Trap-GCMS (USEPA8260)
PAH		
Benzo(a)pyrene as TEQ	0.5	GCMS (USEPA8270)
Total PAHs	0.5	GCMS (USEPA8270)
PCBs		
PCBs (total)	0.9	GCECD (USEPA8140,8080)
OCP/OPP		
Aldrin + Dieldrin	0.2	GCECD (USEPA8140,8080)
Chlordane	0.1	GCECD (USEPA8140,8080)
DDT + DDD + DDE	0.3	GCECD (USEPA8140,8080)
Heptachlor	0.1	GCECD (USEPA8140,8080)
OTHER		
Asbestos	Presence/0.1 g/kg	PLM / Dispersion Staining as per AS4964:2004
Soil pH	0.1	5:1 leach

8.5 Soil Validation Criteria

8.5.1 Assessment Criteria Selection

As per the decision process for assessment of urban development sites (EPA 2017), a set of health and ecological assessment thresholds derived from ASC NEPM or other EPA endorsed guidelines was used for evaluation of investigation area contamination data collected for this assessment.

The development site is proposed to be used for public open space land uses. As such, criteria have been adopted from the ASC NEPM and WHS Regulation (2017) as presented in the following sections.

8.5.2 Soil Validation Criteria

The adopted validation criteria are presented in Tables A, B, C, D and E (**Appendix B**) and summarised as follows:

- Asbestos in soil (WHS Regulation):
  - No visible asbestos in soil;
  - No asbestos present above 'trace' levels (0.01 % w/w);
- Asbestos in soil (ASC NEPM):
  - HSLs for asbestos contamination in soil for recreational (HSL-C)) land uses– ASC NEPM;
- Health Investigation Levels (HILs) for recreational (HSL C) land use;
- HSLs for petroleum hydrocarbons considering potential for vapour intrusion, as applicable to the relevant soil types and depths observed during investigation works for recreational land use (ASC NEPM);
- Ecological investigation levels (EILs) shall be derived for each material subject to assessment for the presence of heavy metals in accordance with the procedure presented in the ASC NEPM;
- Ecological Screening Levels (ESLs) for TRH fractions, BTEX and benzo(a)pyrene in fine soil for recreational land use (ASC NEPM); and
- Management limits for hydrocarbons for recreational land uses– fine grained soil (ASC NEPM).

Where no criteria are present for a contaminant, the laboratory's LOR will be used as an initial screening criterion.

8.5.3 Application of Soil Assessment Criteria

For soil to be considered as validated (i.e., not posing an unacceptable risk) all reported concentrations should ideally be below the investigation area validation criteria.

For the chemical analysis data set the following statistical criteria shall be adopted with respect to the health based criteria:

- The upper 95 % confidence limit on the average concentration for each analyte (calculated for samples collected from consistent soil horizons, stratigraphy, or material types) must be below the adopted criterion;
- No single analyte concentration shall exceed 250 % of the adopted criterion; and
- The standard deviation of the results must be less than 50 % of the criterion.

Where the soil validation criteria are exceeded, further remediation and validation, or evaluation of risk, will be required.

In addition to the numerical criteria, consideration shall be given to aesthetic characteristics of the material, including the presence of soils that are odorous or discoloured because of contamination, or otherwise contain significant quantities of non-soil inclusions (ie. construction and demolition waste and similar).

8.5.4 Off-site Disposal Criteria

Where contaminated fill/soil is unsuitable for use on site or is surplus to construction requirements, materials will be the subject of off-site disposal. Materials shall be classified in accordance with EPA (2014) *Waste Classification Guidelines* or an appropriate exemption as created under the *Protection of the Environment Operations (Waste) Regulation 2014*.

8.5.5 Imported Soil Criteria

In accordance with current EPA policy, only material that does not represent an environmental or health risk at the receiving investigation area may be considered for resource recovery. Imported materials will only be accepted to the investigation area if they meet the restrictions placed on these materials and meet the definition of:

- VENM as defined in the *Protection of the Environment Operations Act* (1997) Schedule 1;
- ENM as defined in EPA (2014); or
- Resource recovery materials as per an EPA exemption.

All material imported onto the investigation area are required to be accompanied by appropriate documentation that has been verified by the appointed Environmental Consultant. All materials will be required to be inspected upon import to the investigation area by the appointed Environmental Consultant to confirm consistency with provided documents and/or consistency with observations made at the source site.

Sampling of materials as per an EPA exemption (recycled products) is required to be undertaken by the facility in accordance with the relevant exemption. In addition, where materials are proposed for beneficial reuse under a NSW EPA exemption (i.e. imported to the investigation area), fill material will need to be further assessed by an Environmental Consultant for land use suitability.

8.6 Reporting

8.6.1 Validation Report

At the completion of remediation works, a validation report will be prepared by the Environmental Consultant written in general accordance with *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land*, NSW EPA (EPA 2020), documenting the works as completed.

The validation report will contain information including:

- Results of previous investigations conducted at the investigation area;
- Details of the remediation works conducted;
- Information demonstrating that the objectives of this RAP have been achieved, in particular the validation sample results and assessment of the data against both the pre-defined DQO and the remediation acceptance (validation) criteria;
- Information identifying the approval for imported materials, including observations for visual inspection at time of arrival at site;
- Information demonstrating compliance with appropriate regulations and guidelines;
- Any variations to the strategy undertaken during the implementation of the remedial works;
- Results of all environmental monitoring undertaken during the course of the remedial works;
- Details of any environmental incidents occurring during the course of the remedial works and the actions undertaken in response to these incidents;
- Verification of regulatory compliance;

- Details on waste classification, tracking and off-site disposal including landfill dockets; and
- Clear statement of the suitability of the investigation area with respect to proposed land use.

The report will serve to document the remediation works for future reference.

9. Site Management Plan

9.1 Overview

The controls discussed below have been developed in addition to the requirements with respect to the establishment of appropriate works zones as discussed for specific investigation areas in **Section 6**.

9.2 Hours of Operation

All remediation works shall be conducted within the following hours or those specified within the project consent :

- Monday to Friday: 7am to 5 pm.
- Saturdays: 8 am to 1 pm.
- Sunday and public holidays: No work permitted.

9.3 Erosion and Sediment Control Policy

All works shall be conducted in general accordance with Landcom (2004)[22] guidance (the Blue Book), which outlines the general requirements for the preparation of a soil and water management plan.

All remedial works shall be conducted in accordance with a soil and water management plan, which is to be kept onsite and made available to council officers on request. All erosion and sediment measures must be maintained in a functional condition through the remediation works by the remedial contractor.

To prevent the migration of impacted soil off site, silt fences shall be constructed at the down-gradient boundaries by the remedial contractor. Any material which is collected behind the sediment control structures shall be removed off site to a licensed waste facility after waste classification.

In storm or extended rainfall event, the structures located within the investigation area for sediment control shall be monitored and replaced or altered if necessary by the contractor. Collected material shall be managed in accordance with remediation works by the contractor.

9.4 Stockpile Management

All materials stockpiled within the investigation area will be managed by the Contractor. Unique numbers will be provided for each stockpile, the source of the stockpile, its estimated volume, material characterisation and its location within the investigation area will also be recorded.

The following general procedures will be implemented by the Contractor:

- No stockpiles of soil or other materials shall be placed on footpaths or road reserves unless prior Council approval has been obtained; and
- All stockpiles of soil or other materials shall be placed away from drainage lines, gutters or stormwater pits or inlets.

9.4.1 Temporary and Long Term Management

All stockpiles will be required to be managed in accordance with the procedures in **Section 6.5.4**.

9.5 Incident Investigation

In the event an environmental containment failure (**Section 7.4**), environmental incident, or significant emissions complaints (**Section 7.5**) occur during the remedial works periods, a formal

[22] *Managing Urban Stormwater: Soils and Construction*, Landcom 4th Edition, March 2004.

review of the incident will be undertaken by the Site Manager with specialist assistance as appropriate (construction, occupational hygienist, site remediation consultant, etc.).

The review will be tasked with identifying the cause of the incident and providing recommendations on alternative procedures or systems to be implemented at the site and/or within the CEMP to prevent/minimise the likelihood of the incident reoccurring. Dependent upon the review outcome, amendment to the remedial works procedures via preparation of a remedial works plan (RWP) or documentation within the CEMP may be appropriate, in which instance the documents should be reviewed and endorsed by the site auditor prior to implementation.

9.6 Site Access

All vehicle access to the investigation area shall be stabilised to prevent the tracking of sediment onto the roads and footpaths. All materials must be removed from the roadway on a daily or as required basis. All vehicles leaving the asbestos works area must be decontaminated in accordance with the procedures in **Section 6.4.1**.

9.7 Excavation Dewatering

No dewatering is proposed. There is a potential for minor quantities of seepage to enter the deepest excavations. This is not anticipated to affect the undertaking of the works and will be able to be managed in lieu of a requirement to dewater.

9.8 Noise

Remediation work shall not give rise to 'offensive noise' as defined in the *Protection of the Environment Operations* (POEO) Act 1997. All equipment and machinery associated with the remediation work shall be operated by the Contractor in accordance with the *POEO Act* (*1997*) and its *Noise Control Regulations 2000*.

Noise generated should be managed so as not to adversely impact the amenity or residents/business adjoining or nearby the investigation area.

All machinery and equipment used within the investigation area will be in good working order and fitted with appropriate silencers when necessary.

9.9 Vibration

Vibration generated should be managed so as not to adversely impact the amenity or residents/ business adjoining or nearby the investigation area.

9.10 Odour / Volatile Emissions Control

No odours should be detectable at the investigation area boundary and volatile emissions of other potentially volatile substances shall be controlled. Appropriate actions will be taken by the contractor to reduce the odours, which may include odour suppressants or maintenance of equipment. Where possible, stockpiles of malodorous material shall be transferred to off-site locations as soon as possible.

Equipment and machinery will be adequately maintained to minimise exhaust emissions. No materials shall be burnt within the investigation area.

9.11 Dust Control

During the remedial works, as necessary, excavation areas will be wetted down using a water spray to minimise the potential for dust to be generated by the Contractor. A wetting or bonding agent may be used to further bind the soil to minimise asbestos fibre release.

All asbestos impacted soils must be wetted (but not flooded) prior to and during excavation and movement of the soils. To control dust in significant areas of exposed asbestos contaminated fill,

industrial misting fans, placed at the outer extents of remedial/excavation areas, must be utilised by the Contractor.

Dust shall also be controlled by ensuring vehicles leave via the designated (stabilised) site access and all equipment have dust suppressors fitted by the Contractor.

Where significant fugitive emissions are observed from asbestos inspection / treatment pads, or bioremediation areas, these areas shall be wetted and/or covered by the Contractor.

Meteorological conditions will be monitored by the Remediation Consultant and Contractor. Remedial work will be stopped or modified where meteorological conditions are adverse (i.e., dry conditions and strong winds towards sensitive receptors).

Plant and vehicles should limit their speed when working within asbestos exclusion zones and only traverse wetted haul roads. Only essential vehicles are permitted to traverse the asbestos exclusion zone.

9.12 Air Quality

9.12.1 Airborne Asbestos Fibre Monitoring

Airborne asbestos fibre monitoring will be conducted in accordance with the requirements of the National Occupational Health and Safety Commission (NOHSC*) Asbestos Code of Practice and Guidance Notes*, in particular the *Guidance note for the estimation of airborne asbestos dust* [NOHSC 3002:2005]. The consultant shall undertake airborne asbestos fibres monitoring at a minimum of five static locations daily during remediation works that will disturb asbestos impacted or contaminated materials. Monitoring locations will include investigation area perimeter locations and downwind locations. Wind Rose information available from the Bureau of Meteorology (BOM) for the nearest weather stations will be used to determine common prevailing winds in the area.

Air filters shall be analysed by a NATA accredited laboratory and results shall be required to be below 0.01 fibres/mL. All detections of fibres shall be further analysed by scanning electron microscope (SEM) to confirm the fibres are asbestos.

If respirable asbestos fibres are confirmed and present between 0.01 and 0.02 fibres/mL, the following controls must be implemented by the licensed asbestos removalist, in accordance with the *WHS Regulations 2017*;

- Review control measures;
- Investigate the cause; and
- Implement controls to eliminate or minimise exposure and prevent further release.

If respirable asbestos fibres are confirmed and present above 0.02 fibres/mL, the following controls must be implemented by the licensed asbestos removalist, in accordance with *WHS Regulations 2017*;

- Stop removal work;
- Notify SafeWork NSW by phone, then by fax or written statement that work has ceased;
- Investigate the cause;
- Implement controls to eliminate or minimise exposure and prevent further release; and
- Do not recommence removal work until further air monitoring is conducted and fibre levels are detected below 0.01 fibres/mL.

A daily report air monitoring report will be prepared documenting the previous/same days airborne asbestos fibre air monitoring results. This report will be made available to all relevant stakeholders.

9.12.2 Dust Monitoring

Dust emissions shall be confined within the investigation area boundary. The following dust control procedures may be employed to comply with this requirement:

- Erection of dust screens around the perimeter of the investigation area;
- Securely covering all loads entering or exiting the investigation area;
- Use of water sprays across the investigation area to suppress dust;
- Covering of all stockpiles of contaminated soil remaining more than 24 hours (where practical); and
- Keeping excavation surfaces moist.

9.13 Transport of Material Offsite

Where materials are required to be transported off-site, all trucks will be loaded in designated areas and decontaminated (when leaving the asbestos works area) in accordance with site management procedures. The Contractor shall ensure that there is no material tracked out onto the street and that the load is securely covered. In addition, all vehicles must leave the investigation area in a forward direction.

The Contractor shall also log truck movements and approximate volume, via registration number and consignment number (where applicable), into and out of the investigation area. Truck load details will be included as part of the Validation Report.

All appropriate road rules shall be observed and state roads will be selected as far as practicable over local roads when deciding on the transport route to the off-site material disposal location.

All plant and vehicles will be required to obey all client site-specific rules when travelling within the investigation area. In addition, all plant and vehicles should limit their speed when working within asbestos exclusion zones and only traverse designated paths.

9.14 Hazardous Materials

Hazardous and/or intractable wastes arising from the remediation work shall be removed and disposed of in accordance with the requirements of NSW EPA, SafeWork NSW and the relevant regulations by the Contractor.

In particular, any hazardous wastes will be transported by a NSW EPA licensed transporter.

9.15 Disposal of Contaminated Soil

All soils will be classified, managed and disposed in accordance with the *Waste Classification Guidelines* (EPA 2014). Documentary evidence for all soil disposal shall be kept for inclusion in the Validation Report.

Trucks will be loaded in designated areas. The Contractor shall ensure that there is no material tracked out onto the street and that the load is securely covered. In addition, all site vehicles must leave the investigation area in a forward direction.

The Contractor shall also log truck movements and approximate volume, via registration number and consignment number (where applicable), into and out of the investigation area.

All appropriate road rules shall be observed and state roads will be selected as far as practicable over local roads when deciding on the transport route to the off-site material disposal location.

Plant and vehicles should limit their speed when working within asbestos exclusion zones and only traverse designated paths.

WasteLocate is now operational within NSW and any loads of asbestos waste that trigger the values of WasteLocate must be tracked via the online system.

9.16 Signage and Contact Numbers

A sign/s shall be displayed adjacent to the investigation area access point/s throughout the duration of the works with the contact details of the Contractor and project manager as provided and maintained by the Contractor.

9.17 Security

The remedial areas shall be secured against unauthorised access by means of an appropriate fence or barricade or other means by the Contractor. All persons working in asbestos remedial areas must be inducted, have undertaken required training and don appropriate PPE. The access gates to the investigation area will be locked at all times when remedial works are not occurring.

9.18 Community Consultation

Landcom will implement procedures as part of the broader site redevelopment process to inform the community and relevant stakeholders of the intention to complete works at the site. Specifically, owners and/or occupants of adjacent premises and across the road from the site will be notified at least 7 days prior to the commencement of preparation for the remediation works. As a minimum, the notification shall include the details of an appropriate contact person.

Workers within the broader site will be advised of the intention to complete works at least 7 days prior to the commencement of site remediation activities, with regular updates provided via toolbox talk procedures as part of the Principal Contractor obligations.

9.19 Health and Safety Management

A Work Health & Safety Management Plan (WHSP) shall be prepared by the Contractor prior to commencement of remediation works on the investigation area. The Plan shall contain procedures and requirements that are to be implemented as a minimum during the works.

The objectives of the WHSP are:

- Ensure all regulatory requirements for the proposed works are satisfied;
- To apply standard procedures that minimises risks resulting from the works;
- To ensure all employees are provided with appropriate training, equipment and support to consistently perform their duties in a safe manner; and
- To have procedures to protect other site workers and the general public.

These objectives will be achieved by:

- Assignment of responsibilities;
- An evaluation of hazards;
- Establishment of personal protection standards, mandatory safety practices and procedures;
- Monitoring of potential hazards and implementation of corrective measures; and

Provision for contingencies that may arise while operations are being conducted at the investigation area.

10. Conclusions and Recommendations

With reference to the limitations in **Section 10**, the following conclusions and recommendations are provided.

10.1 Conclusions

Overall, it is considered that the proposed actions outlined in this RAP conform to the requirements of the *Contaminated Sites Guidelines for the NSW Site Auditor Scheme* (3rd Edition) (EPA 2017) because they are: technically feasible; environmentally justifiable; and consistent with relevant laws, policies and guidelines endorsed by NSW EPA.

Subject to the successful implementation of the measures described in this RAP and the recommendations below, it is concluded that the risks posed by contamination can be managed in such a way as to be adequately protective of human health and the environment, such that the investigation area can be made suitable for the proposed use.

10.2 Recommendations

It is recommended that the processes outlined in this RAP be implemented and that the following documentation be developed and implemented to ensure the risks and impacts during remediation works are controlled in an appropriate manner:

- An AMP to outline the required procedure for the handling of ACM and asbestos impacted soils or materials prior to and during the remediation works to be undertaken at the investigation area; to outline the measures required to protect the health and safety of workers who may encounter ACM or asbestos impacted soils or materials whilst completing the planned works;
- A WHSP to document the procedures to be followed to manage the risks posed to the health of the remediation workforce.

11. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquiries.

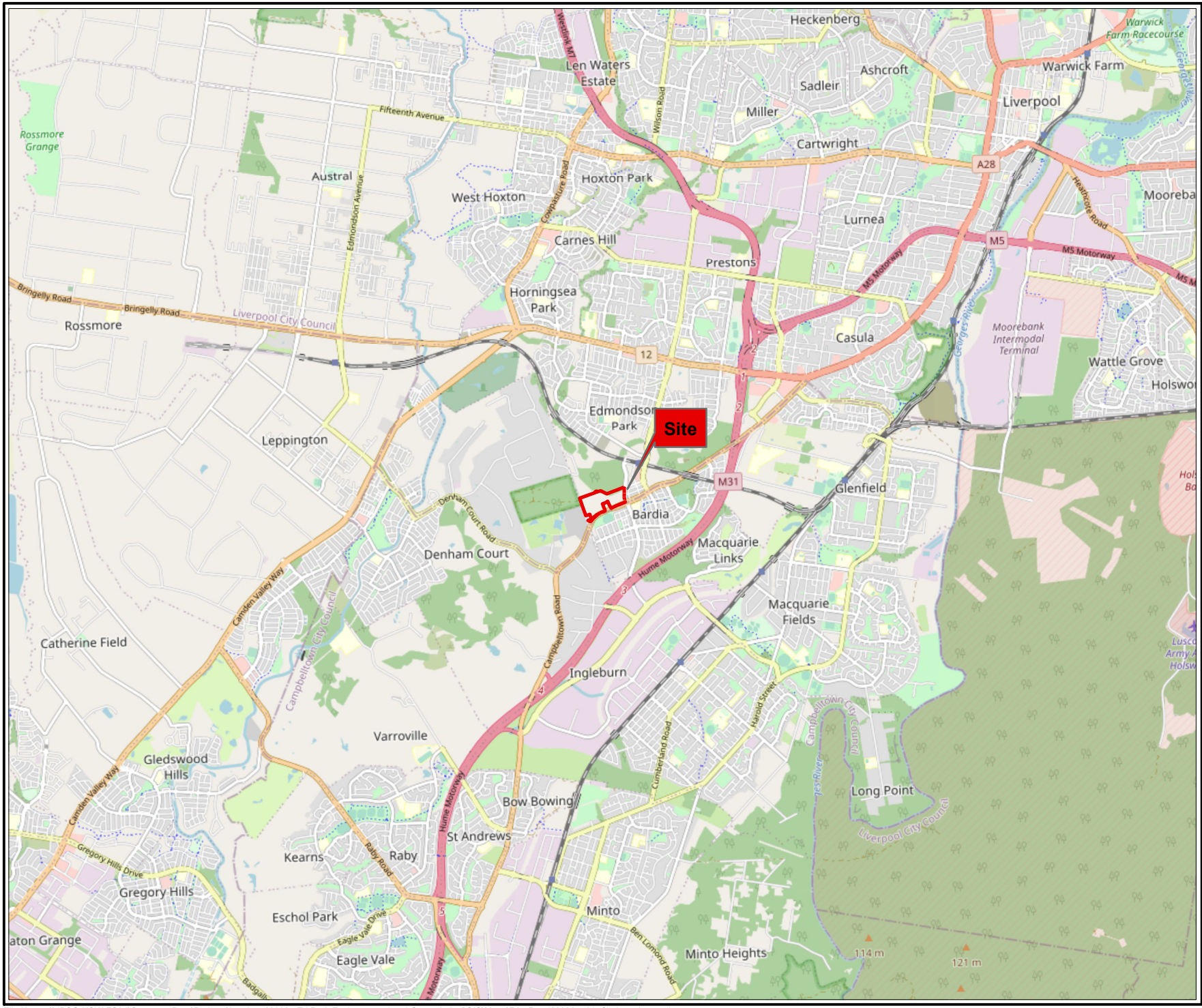
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Figures



Legend

Approximate Site Boundary

JBS&G

Job No: 63325	
Client: Landcom	
Version: R07 Rev A	Date 18/01/2023
Drawn By: YY	Checked By: MD
Scale 1:80,000	

0 1,000 2,000

metres

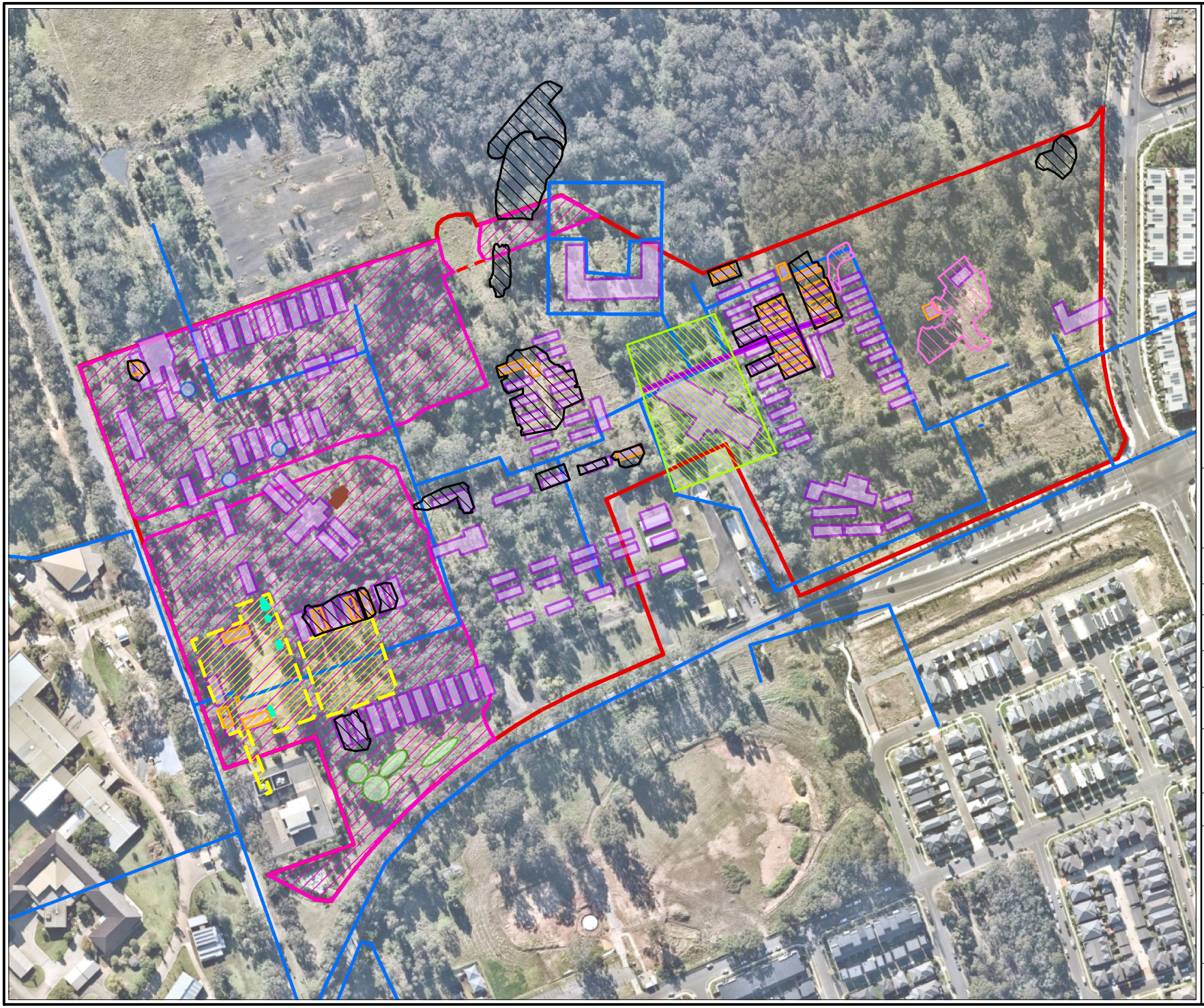
Coord. Sys. GDA 1994 MGA Zone 56

Campbelltown Road, Edmondson Park, NSW

SITE LOCATION

FIGURE 1

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\R07 Rev A\63325_01_SiteLocation.mxd
Reference: Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA



Legend

- Approximate Site Boundary
- Stage Boundary
- Investigation Area

Site Features

- Historic Building Footprints
- Fly-Tipping Extent
- Stockpile

Validation Areas:

- Sampled Building Footprints
- EOW Burn Pits
- Excavation Area
- GPR
- Interceptor Pit
- Scraped Area
- ACM Pipe Excavation Trench
- POL-F Investigation Area (URS, 2004)
- Hydrant Lines

JBS&G

Job No: 63325

Client: Landcom

Version: R07 Rev A	Date 18/01/2023
Drawn By: YY/PA	Checked By: MD

Scale 1:3,500

0 40 80

metres

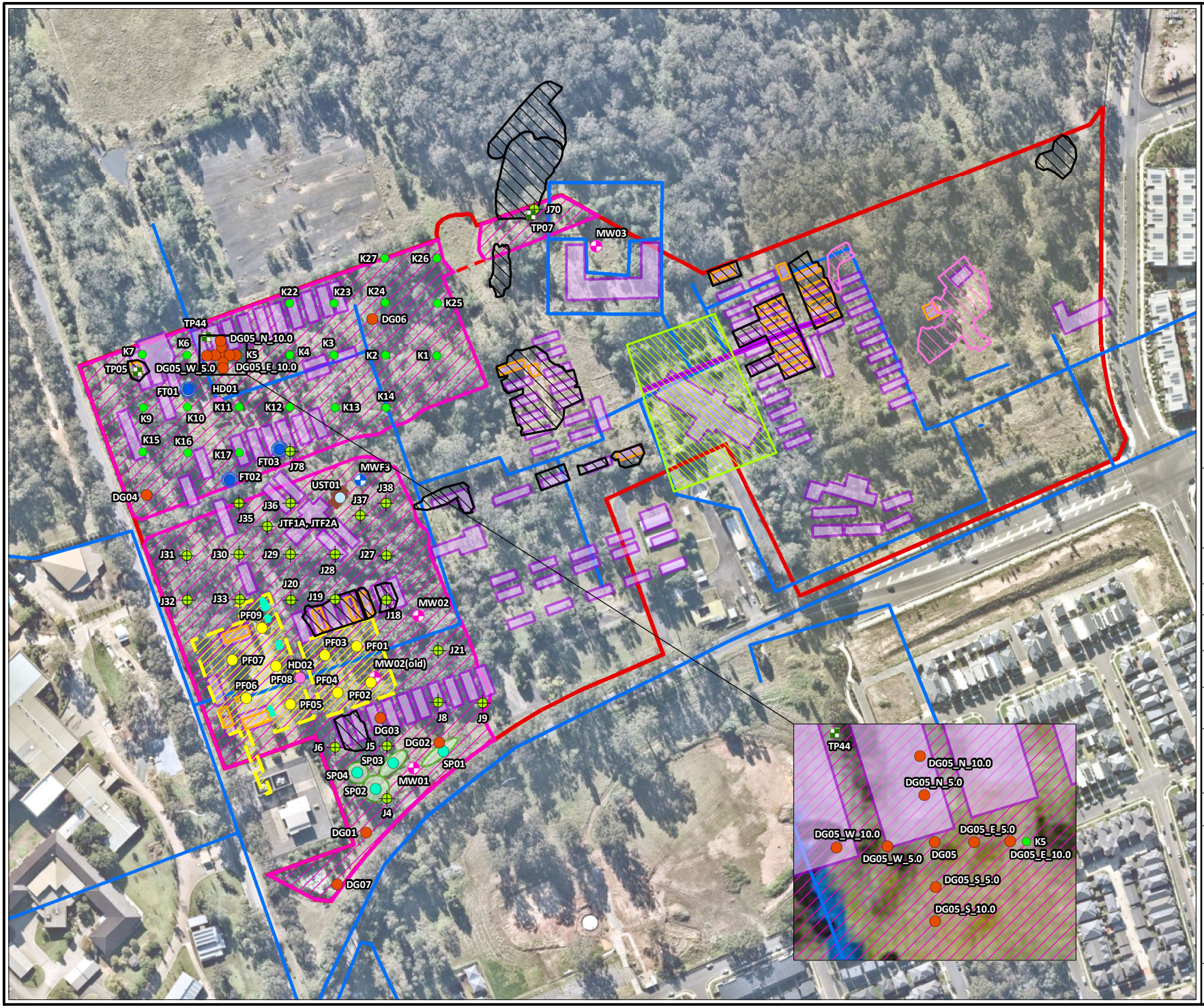
Coord. Sys. GDA 1994 MGA Zone 56

Campbelltown Road, Edmondson Park, NSW

SITE LAYOUT

FIGURE 2

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\R07 Rev A\63325_02_SiteLayout.mxd
Reference: www.nearmap.com - 20220604



Legend

- Approximate Site Boundary
- Stage Boundary
- Investigation Area

Site Features

- Historic Building Footprints
- Fly-Tipping Extent
- Stockpile
- POL-F Investigation Area (URS, 2004)
- Hydrant Lines

Historical Sample Locations

- Soil Sample, SKM 2007
- Soil Sample, SKM 2008

Validation Areas:

- Sampled Building Footprints
- EOW Burn Pits
- Excavation Area
- GPR
- Interceptor Pit
- Scraped Area
- ACM Pipe Excavation Trench

Sample Location, JBS&G (2021)

- Monitoring Well
- Test Pit, Asbestos

Sample Location, JBS&G (2022)

- POL-F Sample
- Monitoring Well
- Stockpile Sample
- UST
- Data Gap Sample
- Fly Tipping Sample

JBS&G

Job No: 63325

Client: Landcom

Version: R07 Rev A	Date 18/01/2023
Drawn By: YY/PA	Checked By: MD

Scale 1:3,500

0 40 80

metres

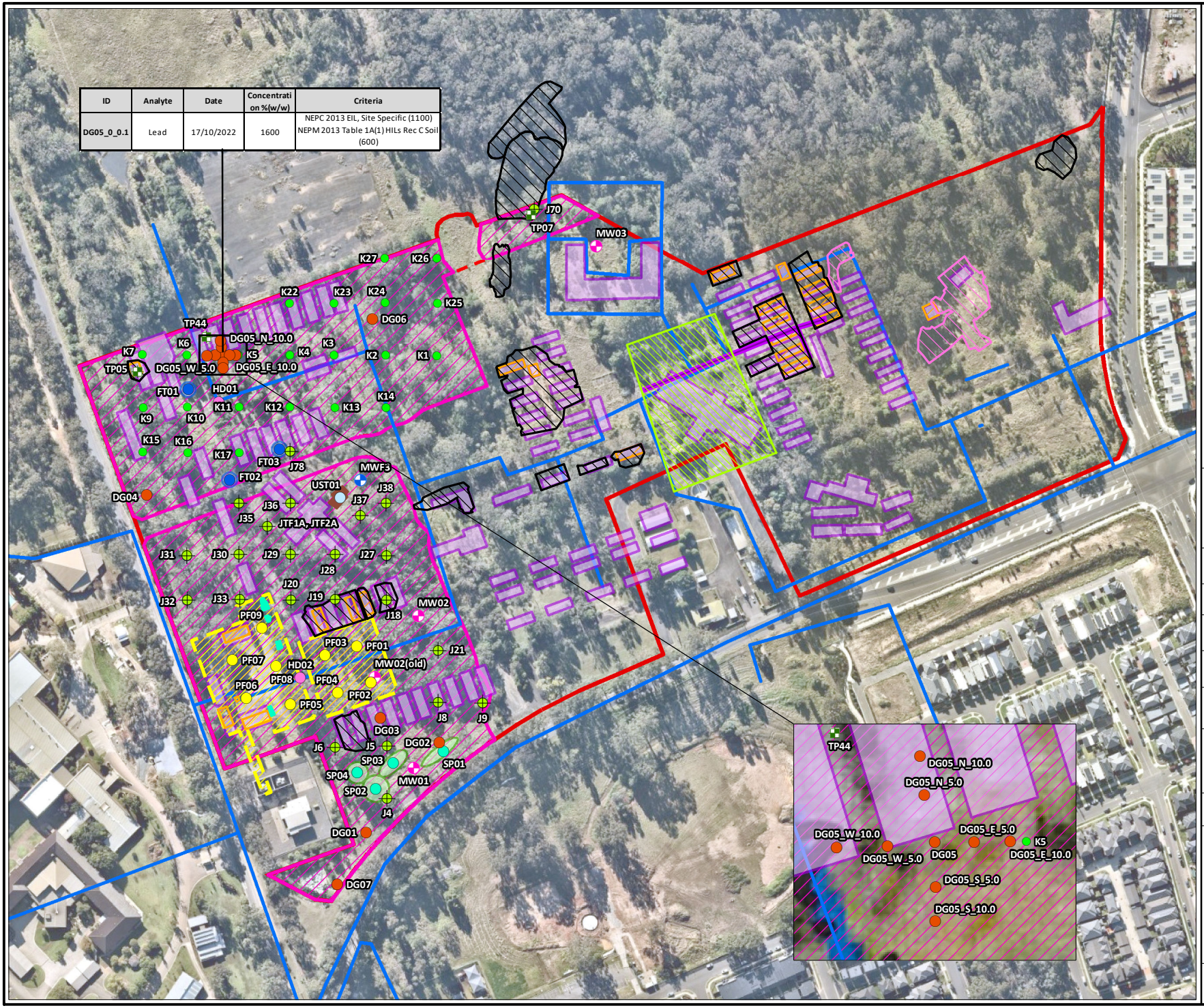
Coord. Sys. GDA 1994 MGA Zone 56

Campbelltown Road, Edmondson Park, NSW

SAMPLE LOCATIONS

FIGURE 3

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\R07 Rev A\63325_03_SampleLocations.mxd
Reference: www.nearmap.com - 20220604



Legend

- Approximate Site Boundary
- Stage Boundary
- Investigation Area

Site Features

- Historic Building Footprints
- Fly-Tipping Extent
- Stockpile
- POL-F Investigation Area (URS, 2004)
- Hydrant Lines

Historical Sample Locations

- Soil Sample, SKM 2007
- Soil Sample, SKM 2008

Validation Areas:

- Sampled Building Footprints
- EOW Burn Pits
- Excavation Area
- GPR
- Interceptor Pit
- Scraped Area
- ACM Pipe Excavation Trench

Sample Location, JBS&G (2021)

- Monitoring Well
- Test Pit, Asbestos

Sample Location, JBS&G (2022)

- POL-F Sample
- Monitoring Well
- Stockpile Sample
- UST
- Data Gap Sample
- Fly Tipping Sample

JBS&G

Job No: 63325

Client: Landcom

Version: R07 Rev A	Date 18/01/2023
Drawn By: YY/PA	Checked By: MD

Scale 1:3,500

0 40 80

metres

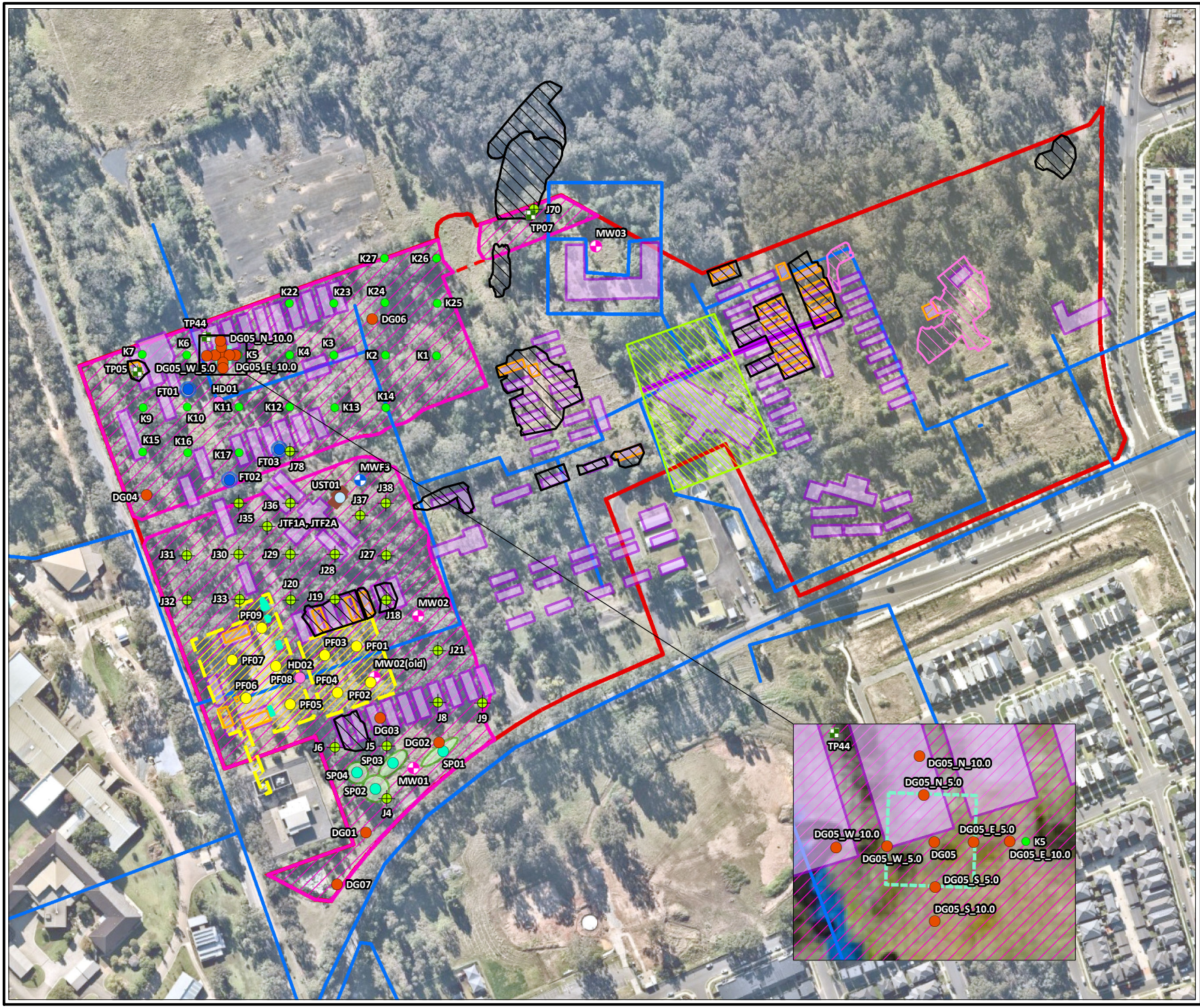
Coord. Sys. GDA 1994 MGA Zone 56

Campbelltown Road, Edmondson Park, NSW

EXCEEDANCES

FIGURE 4

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\R07 Rev A\63325_04_Exceedance.mxd
Reference: www.nearmap.com - 20220604



Legend

- Approximate Site Boundary
- Stage Boundary
- Investigation Area

Site Features

- Historic Building Footprints
- Fly-Tipping Extent
- Stockpile
- Interpreted Extent Of Asbestos Impact
- POL-F Investigation Area (URS, 2004)
- Hydrant Lines

Historical Sample Locations

- Soil Sample, SKM 2007
- Soil Sample, SKM 2008

Validation Areas:

- Sampled Building Footprints
- EOW Burn Pits
- Excavation Area
- GPR
- Interceptor Pit
- Scraped Area
- ACM Pipe Excavation Trench

Sample Location, JBS&G (2021)

- Monitoring Well
- Test Pit, Asbestos

Sample Location, JBS&G (2022)

- POL-F Sample
- Monitoring Well
- Stockpile Sample
- UST
- Data Gap Sample
- Fly Tipping Sample

JBS&G

Job No: 63325

Client: Landcom

Version: R07 Rev A	Date 18/01/2023
Drawn By: YY/PA	Checked By: MD

Scale 1:3,500

0 40 80

metres

Coord. Sys. GDA 1994 MGA Zone 56

Campbelltown Road, Edmondson Park, NSW

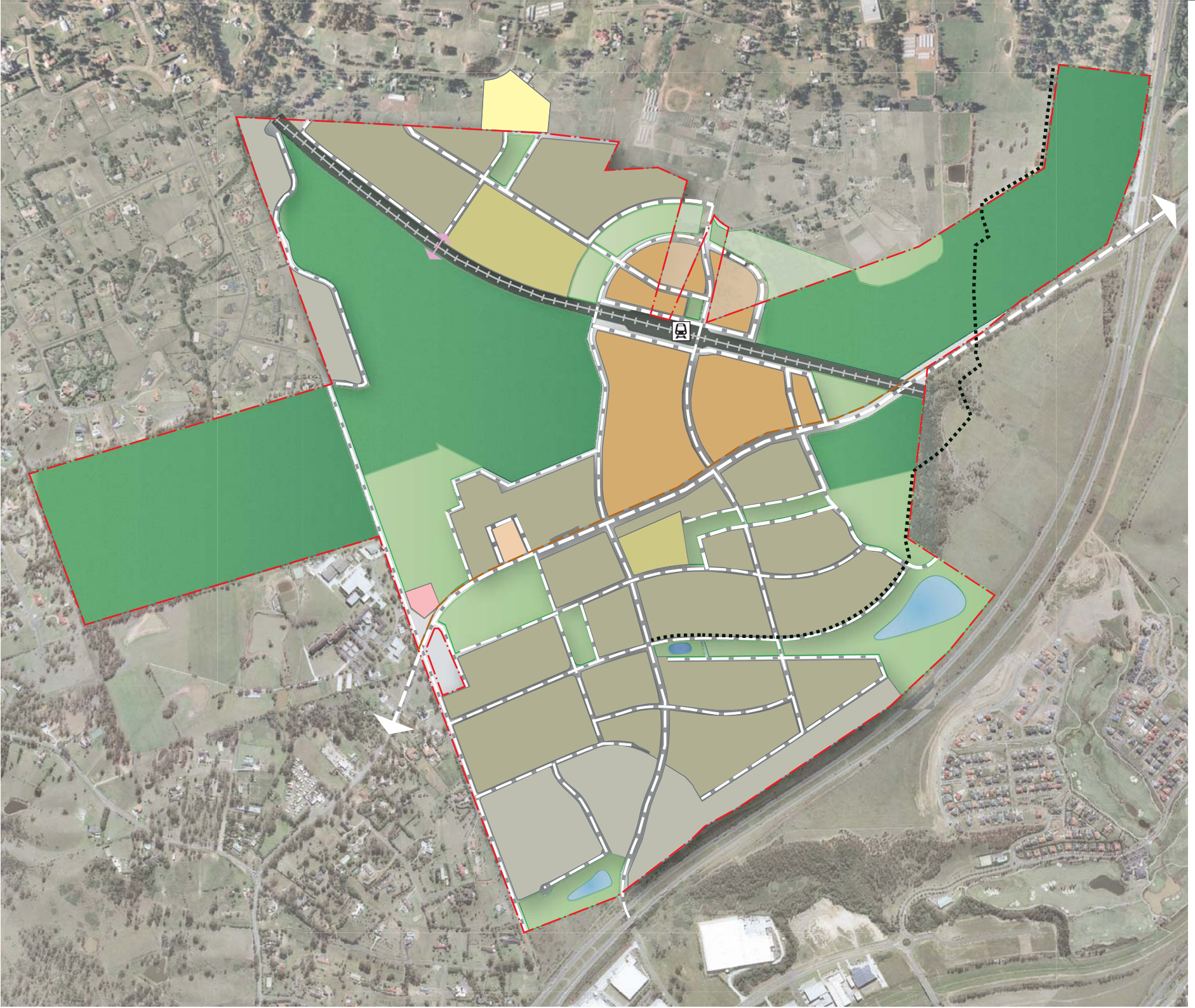
EXTENT OF LEAD REMEDIAL AREAS

FIGURE 5

File Name: N:\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\R07 Rev A\63325_05_ExtentOfLeadRemedialAreas.mxd
Reference: www.nearmap.com - 20220604

Appendix A Historical Figures

A1. Landcom Edmondson Park Concept Plan



LANDCOM

KEY

- Site Boundary
- L.G.A. Boundary
- General Residential
- Environmental Living
- Mixed Use Town Centre
- Public Open Space
- Regional Park
- Heritage Precinct
- Substation
- TCA Rail Corridor
- Train Station
- Schools
- Pedestrian Link over TCA Corridor
- Ornamental Pond
- OSD Basin
- Sewer Line
- Road Links
- Former School Site

Dwg Name: Concept Plan

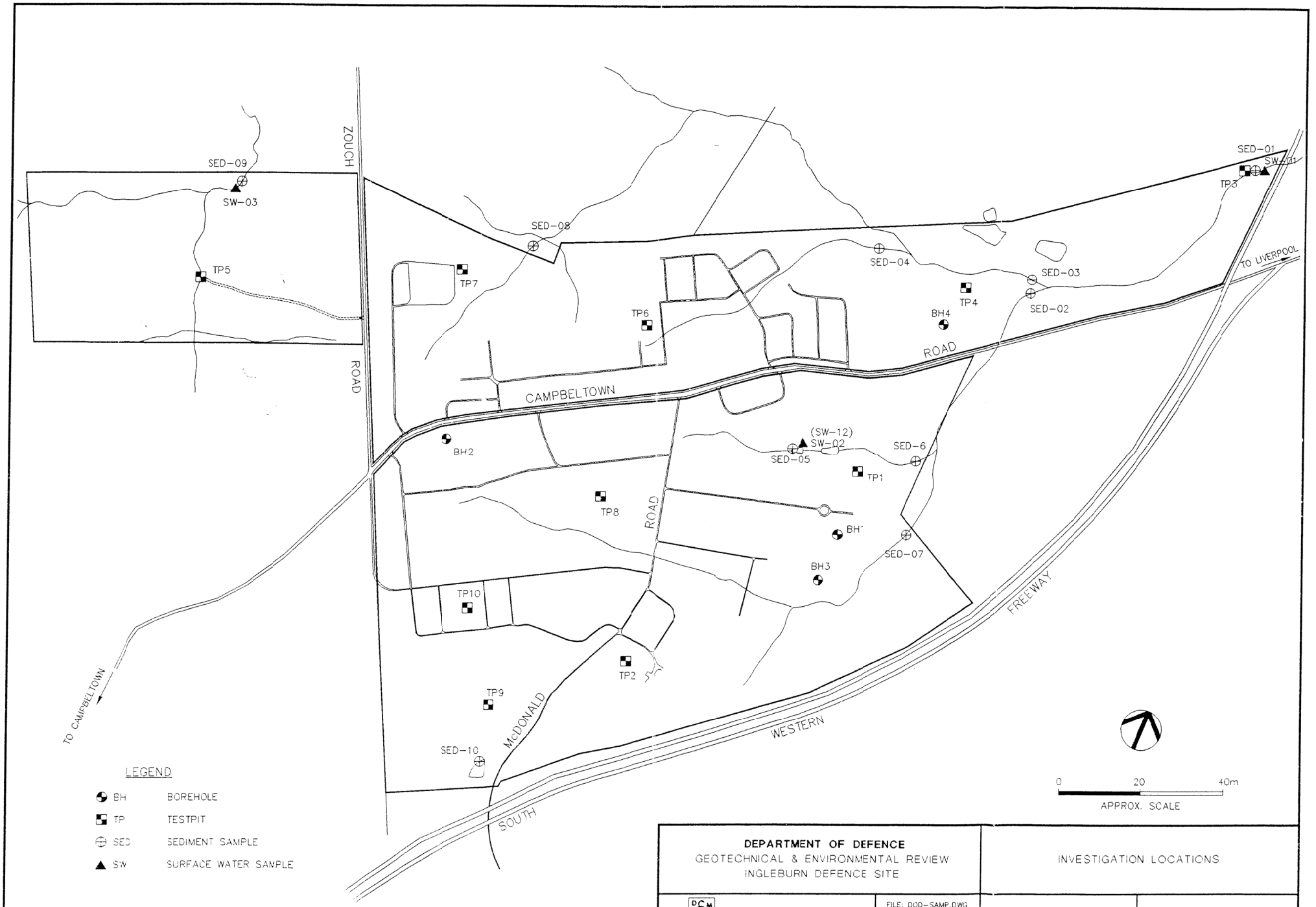
Date: 27 Aug 2010

0m 100m 250m 500m

EPS

Edmondson Park South

A2. Dames & Moore (1999) Investigation Locations



DEPARTMENT OF DEFENCE
GEOTECHNICAL & ENVIRONMENTAL REVIEW
INGLEBURN DEFENCE SITE

INVESTIGATION LOCATIONS

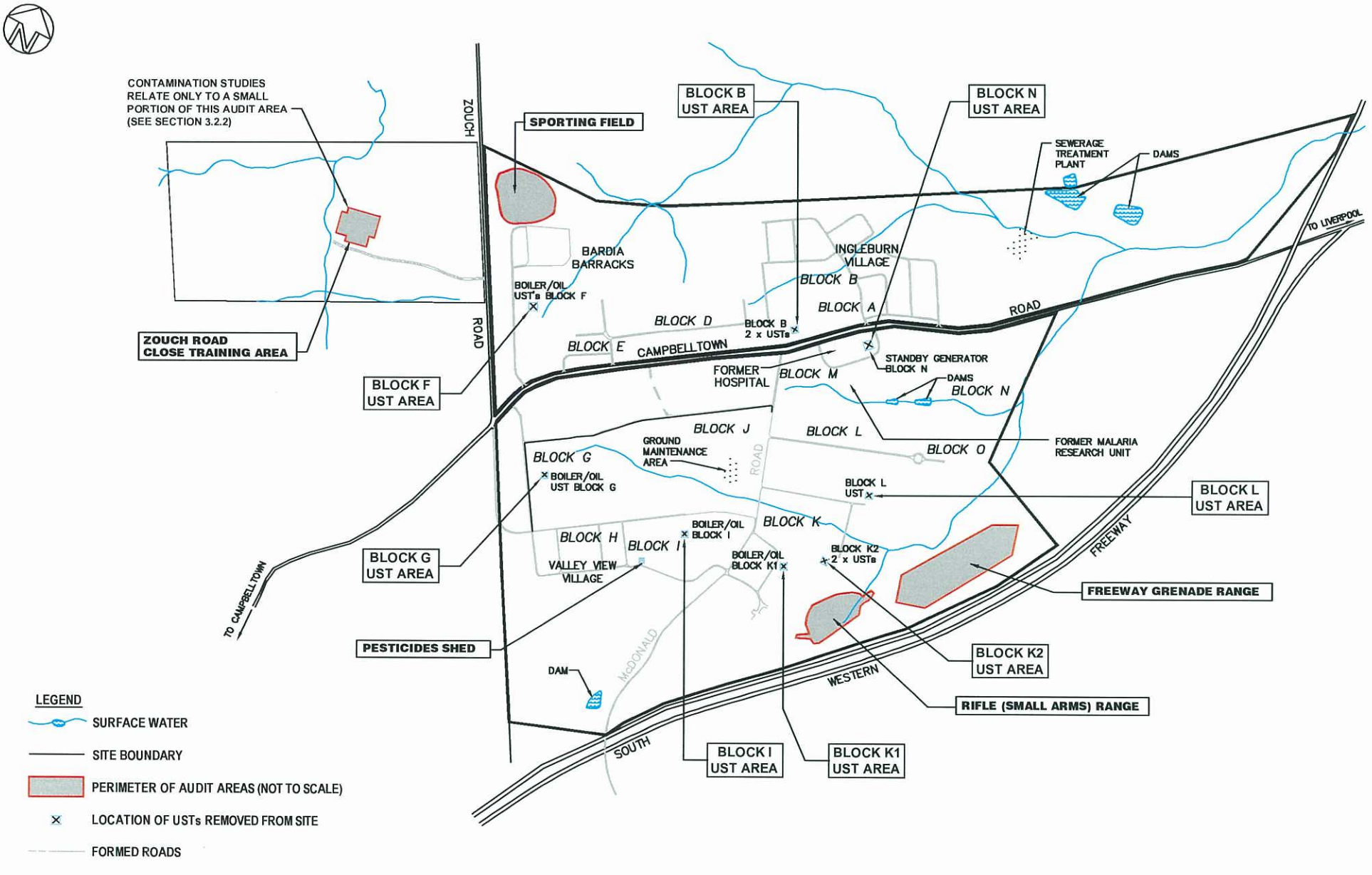
DAMES & MOORE PTY LTD
A DAMES & MOORE COMPANY

FILE: DOD-SAMP.DWG
DATE: 14/7/98
REVISION: 0

12343-063-070

FIGURE 3

A3. Coffee (2009) Site Audit Report – Audit Areas



SOURCE: URS AUSTRALIA PTY LTD

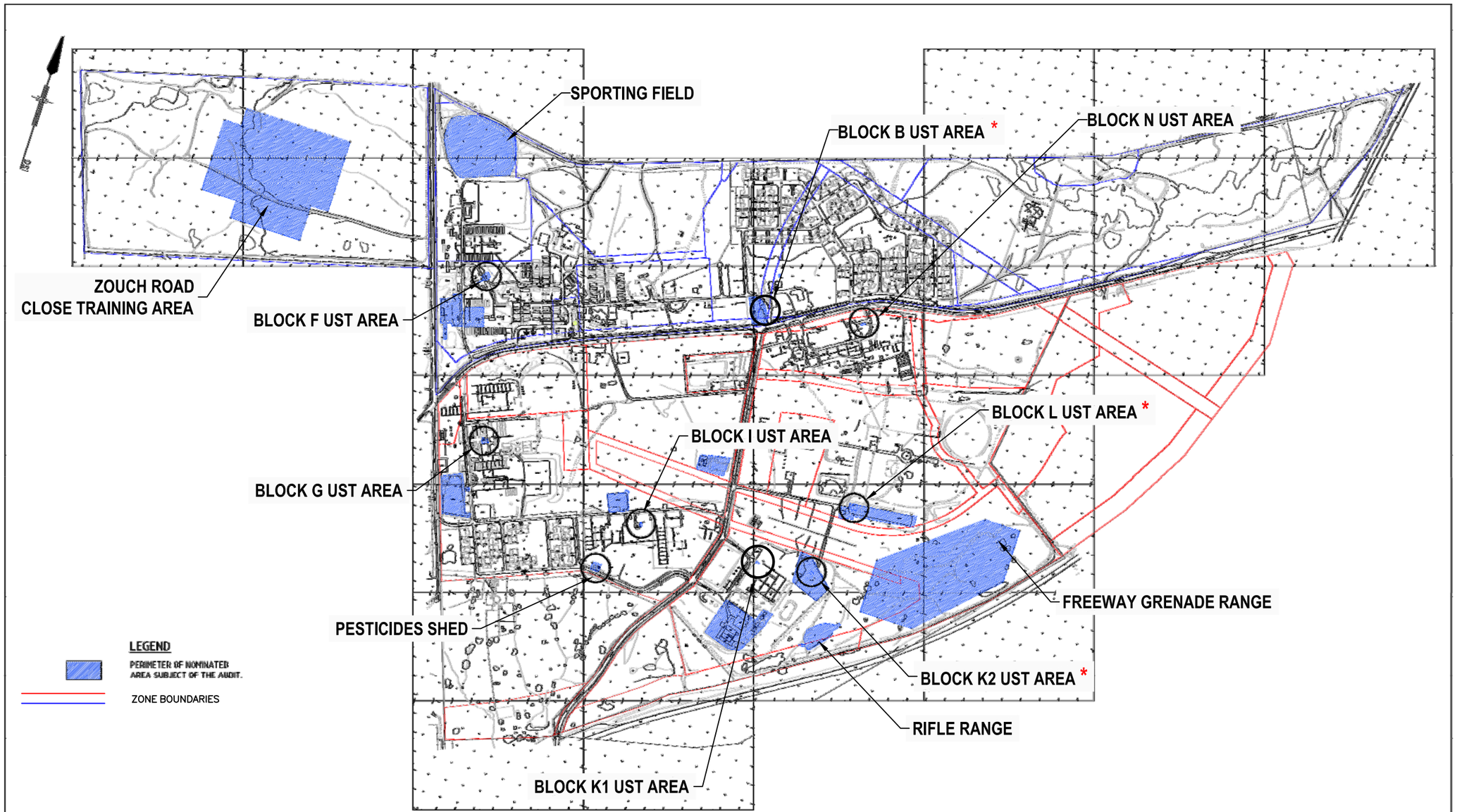
revision	description	drawn	approved	date

100 0 100 300 500
Horizontal Scale (metres)

drawn	XH/AW
approved	TS
date	18.07.2008
scale	1:10 000
original size	A3

coffey environments
SPECIALISTS IN LIVING AND WORKING PLACES

client: DEPARTMENT OF DEFENCE
project: SITE AUDIT REPORT DEFENCE INGLEBURN SITE
title: APPROXIMATE LOCATION OF AUDIT AREAS
project no: ENVILCOV00208AB-R01
figure no: FIGURE 2



NOTE:
1. ISG COORDINATES USED.
2. BASE SURVEY BY HARD & FORESTER PTY LTD (BASCOL, JUNE 1998 FOR DEPARTMENT OF DEFENCE.
3. AUDIT AREAS SURVEYED BY BENTHEM DE NETT PTY LTD FOR URS.
4. MAP COMPILED BY GHD PTY LTD.

NOTE:
* THE AUDIT AREA IS AT THE CENTRE OF THE CIRCLE AND IS THE SMALLER AREA DEFINED INSIDE LARGER AREAS OF BLUE HATCHING.

PRELIMINARY

No	Revision	Note	Drawn	Checked	Approved	Date
A	PRELIMINARY ISSUE		HW			7.08.09

0 50 100 150 200 250m
SCALE 1:5000 AT ORIGINAL SIZE

GHD CLIENTS | PEOPLE | PERFORMANCE

DO NOT SCALE

Drawn H WARR | Designed R TRAUERNARD
Drafting Check | Design Check
Approved
Date
Scale AS SHOWN

Client DEPARTMENT OF DEFENCE
Project INGLEBURN
Title LOCATION OF AREAS SUBJECT OF AUDIT BY COFFEY ENVIRONMENTS
Size A1 Drawing No: 21-11523-SK006 Rev: A

SOURCE: GHD - 21-11523-SK006

revision	description	drawn	approved	date

drawn	MV
approved	TS
date	01.07.2009
scale	AS SHOWN
original size	A3

coffey environments
SPECIALISTS IN LIVING AND WORKING PLACES

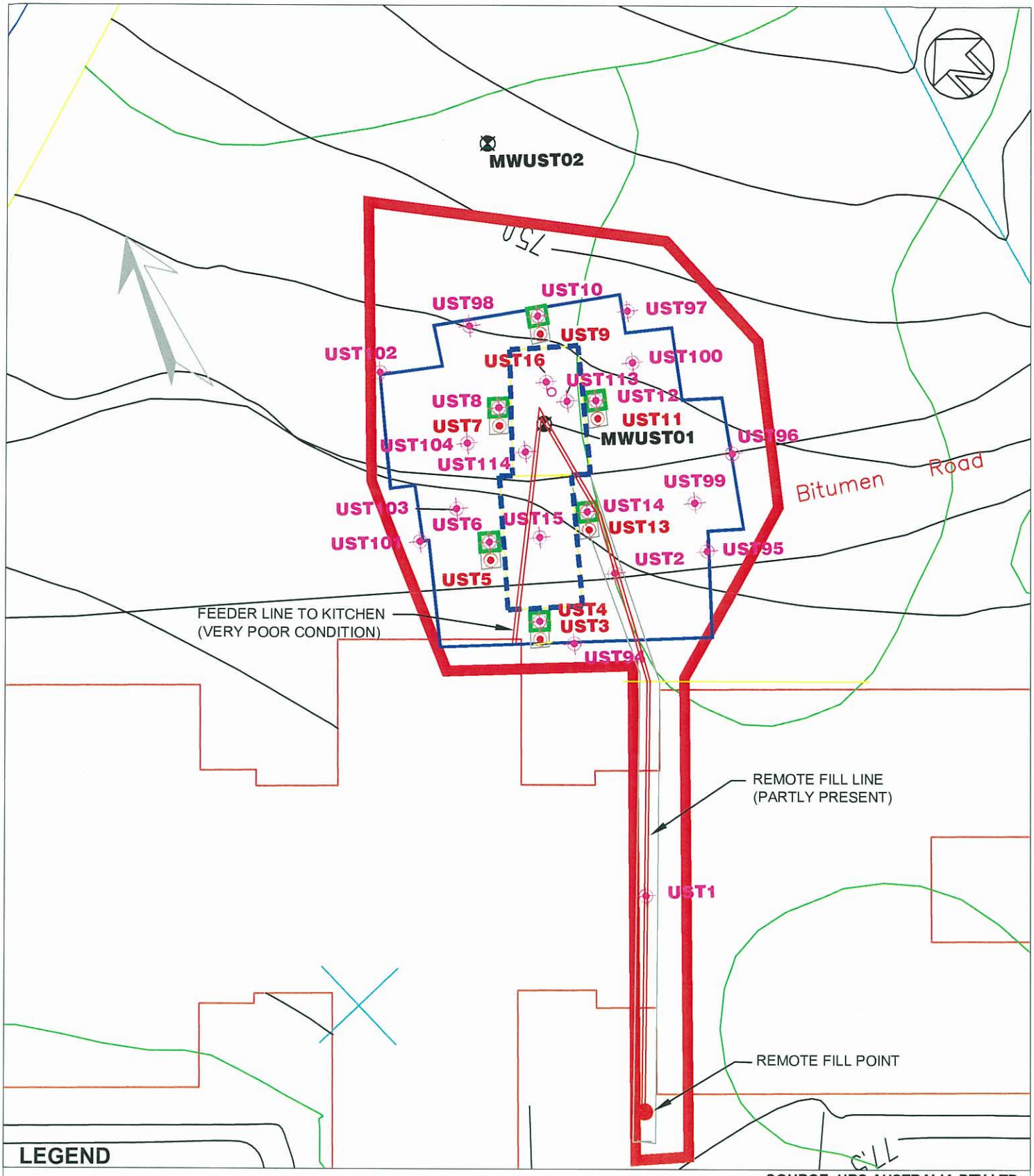
client: DEPARTMENT OF DEFENCE

project: SITE AUDIT REPORT
DEFENCE INGLEBURN SITE

title: SURVEY PLAN SHOWING DEFENCE INGLEBURN SITE AND AREAS SUBJECT OF THE AUDIT

project no: ENVILCOV00208AB-R01

figure no: FIGURE 3



LEGEND

- REMEDIATION SAMPLE LOCATION
- UPPER LEVEL OF EXCAVATION
- LOWER LEVEL OF EXCAVATION
- VALIDATION SAMPLE LOCATION
- GROUNDWATER WELL LOCATION
- SURVEYED EXTENT OF VALIDATED FORMER UST AREA
- INFERRED GROUNDWATER FLOW DIRECTION
- EXTENT OF EXCAVATION (16/04/02)
- EXTENT OF EXCAVATION (17/05/02)
- FUEL LINES (PRESENT AT TIME OF REMEDITATION)

SOURCE: URS AUSTRALIA PTY LTD

2.5 0 5 10

Scale (metres)

drawn	XH/AW
approved	TS
date	18/07/08
scale	AS SHOWN
original size	A4

coffey environments
SPECIALISTS IN LIVING AND WORKING PLACES

client: DEPARTMENT OF DEFENCE

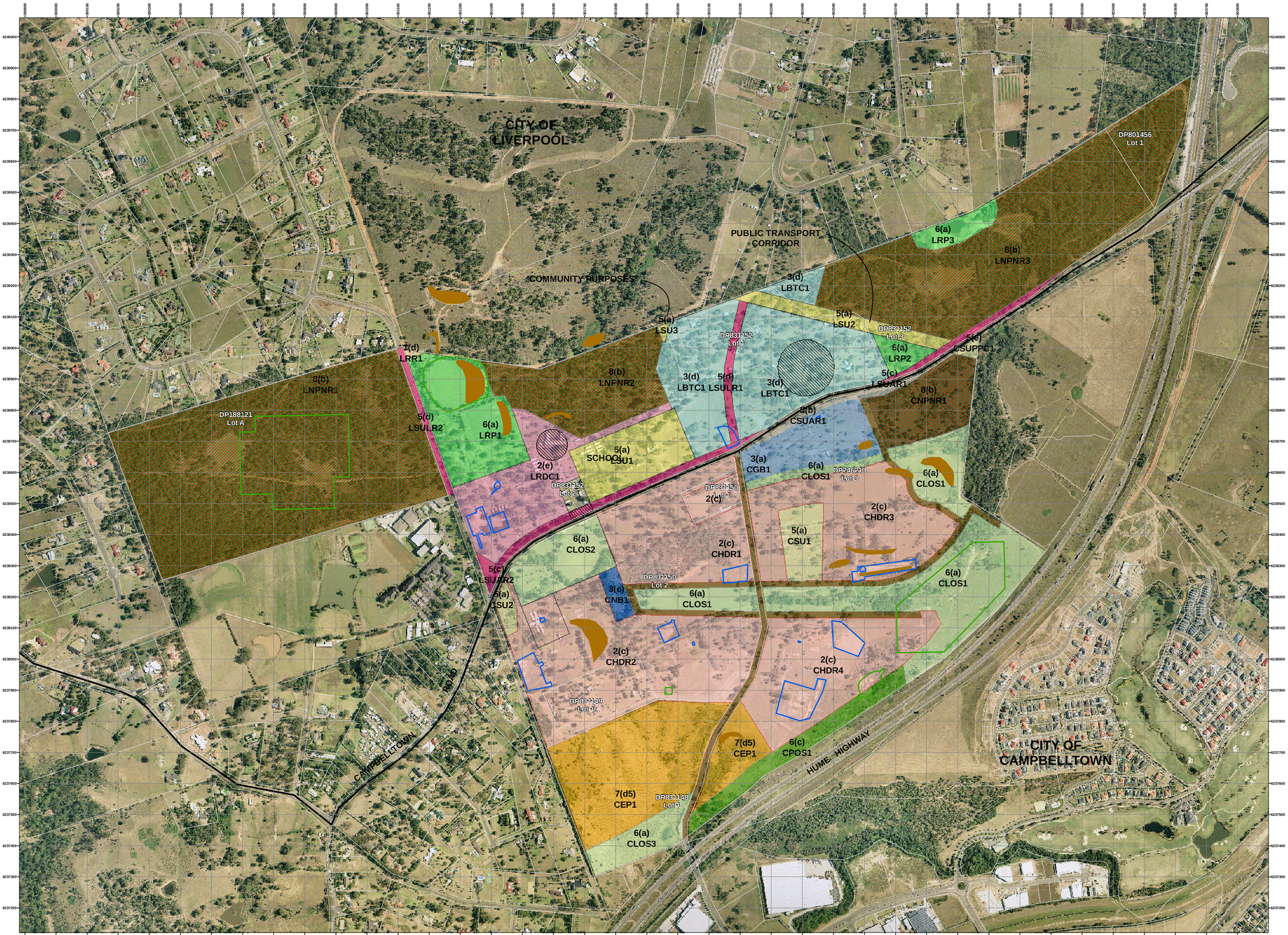
project: SITE AUDIT REPORT
DEFENCE INGLEBURN SITE

title: BLOCK F UST AREA SAMPLE LOCATIONS

project no: ENVILCOV00208AB-R01

figure no: FIGURE 20B

A4. AECOM (2009) Site Audit Areas



Legend

- Signed off remediated area boundaries
- UST remediation area boundaries
- DCP Identified Fill Areas
- Building footprint boundaries

Liverpool LEP

- 1(d) Rural - Residential
- 2(e) Residential - Developing Communities
- 2(f) Residential - Mixed Development
- 3(b) Business - Highway Retail
- 3(d) Business - Town Centre
- 5(a) Special Uses
- 5(c) Special Uses - Arterial Roads
- 5(d) Special Uses - Local Roads
- 6(a) Recreation - Public
- 6(b) Recreation - Private
- 8(b) National Parks and Nature Reserves
- Land to which Cl.32D(2) applies
- Heritage item (Cl.6)

Zone	Section	Area m2
1(d)	LRR1	1156
5(c)	LSUAR2	28377
2(e)	LRDC1	107459
5(d)	LSULR2	10076
3(d)	LBTC1	232231
5(a)	LSU1	64944
5(a)	LSU2	27678
5(a)	LSU3	1412
5(c)	LSUAR1	12523
5(d)	LSULR1	12064
6(a)	LRP1	100165
6(a)	LRP2	13385
6(a)	LRP3	19865
8(b)	LNPNR1	484998
8(b)	LNPNR2	118093
8(b)	LNPNR3	356744

Campbelltown LEP

- 2(c), Higher Density Residential
- 3(a), General Business
- 3(c), Neighbourhood Business
- 5(a), Special Uses A
- 5(b), Special Uses Arterial Roads
- 5(d), Special Uses Local Roads
- 5(e), Special Uses Public Purposes Corridor
- 6(a), Local Open Space
- 6(c), Private Open Space
- 7(d5), Environmental Protection 1 hectare minimum
- 8(b), National Parks and Nature Reserves
- Land referred to in clause 64(2)
- Heritage Item

Zone	Section	Area m2
2(c)	CHDR1	125393
2(c)	CHDR2	262368
2(c)	CHDR3	159869
2(c)	CHDR4	155570
3(a)	CGB1	63698
3(c)	CNB1	10630
5(a)	CSU1	31169
5(a)	CSU2	7773
5(b)	CSUAR1	8965
5(d)	CSULR1	80281
5(e)	CSUPPC1	2580
6(a)	CLOS1	232087
6(a)	CLOS2	55185
6(a)	CLOS3	35087
6(c)	CPOS1	47377
7(d5)	CEP1	197156
8(b)	CNPNR1	65120

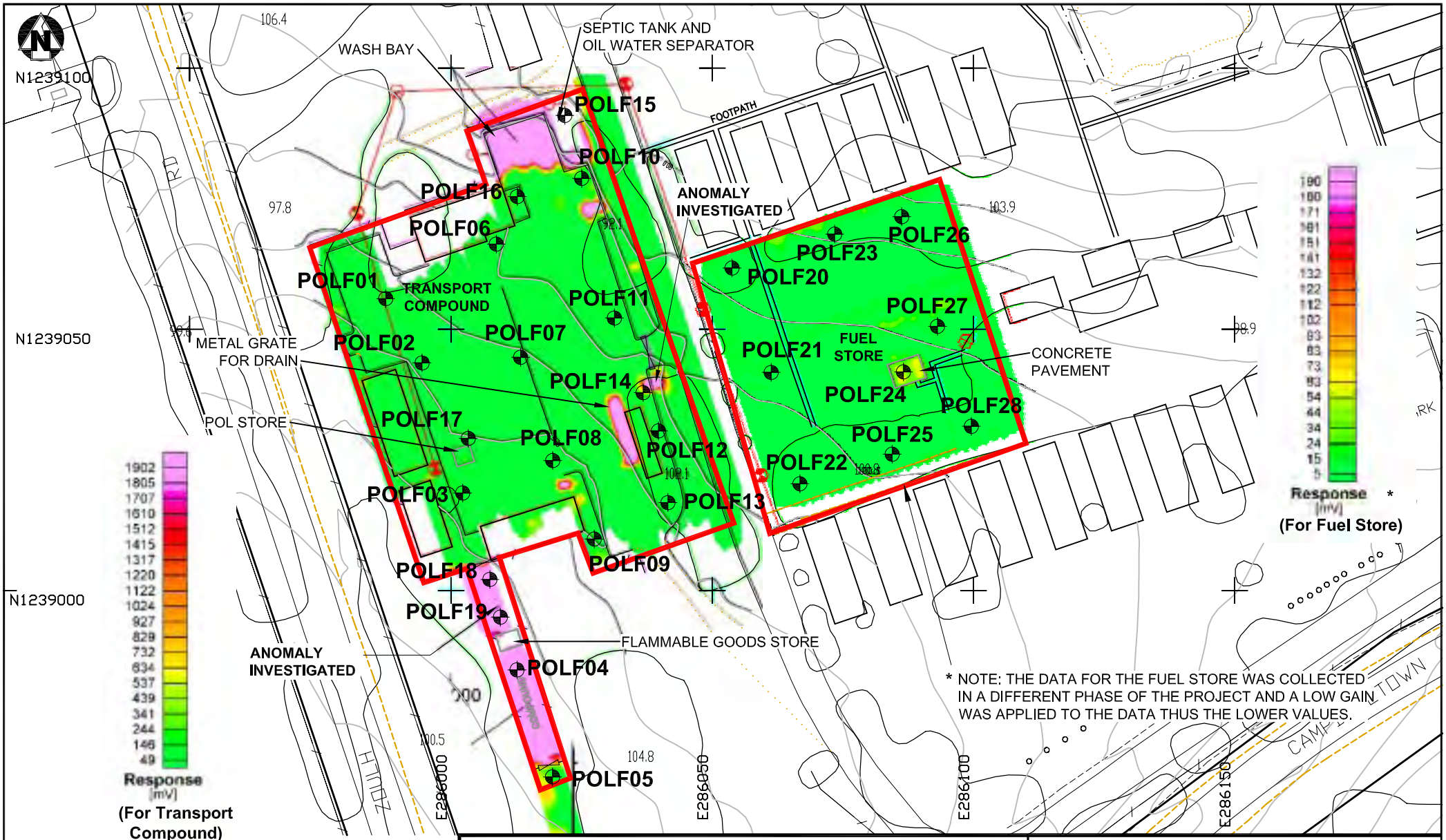
Stage II Environmental Assessment Investigation Areas

Ingleburn Defense Site, NSW

0 95 190 380

Metres

Projection : GDA 1994 MGA Zone 56
Cadastre from LPI
September 23, 2008
I:\ENVR\Projects\EN02203\Technical\GIS\Template\EN02203_074a.mxd



LEGEND

- SAMPLE LOCATIONS
- AREA OF INVESTIGATION

SOURCE: GEOPHYSICAL DATA ALPHA GEOSCIENCES PTY LTD (2002)

CLIENT: **DEPARTMENT OF DEFENCE**

PROJECT: **INVESTIGATION OF MAINTENACE COMPOUNDS AND POL STORES, INGLEBURN DEFENCE SITE, NSW**

TITLE: **BLOCK F SAMPLE LOCATIONS**

A4

0 10 20 30 40 50
1:1000 (metres)

DESIGNED: JT	APPROVED:	PROJECT: 12343-324	FIGURE 4
DRAWN: RR/JT	DATE:	CAD FILE: 019.DWG	
DATE: 19/11/03	STATUS: FINAL	REVISION: A	

URS

SINCLAIR KNIGHT MERZ

GDA 94 MGA Zone 56

December 10, 2008
I:\ENVR\Projects\EN02203\Technical\GIS\Template\EN02203_054.mxd

0 255 510
Metres

Figure 3

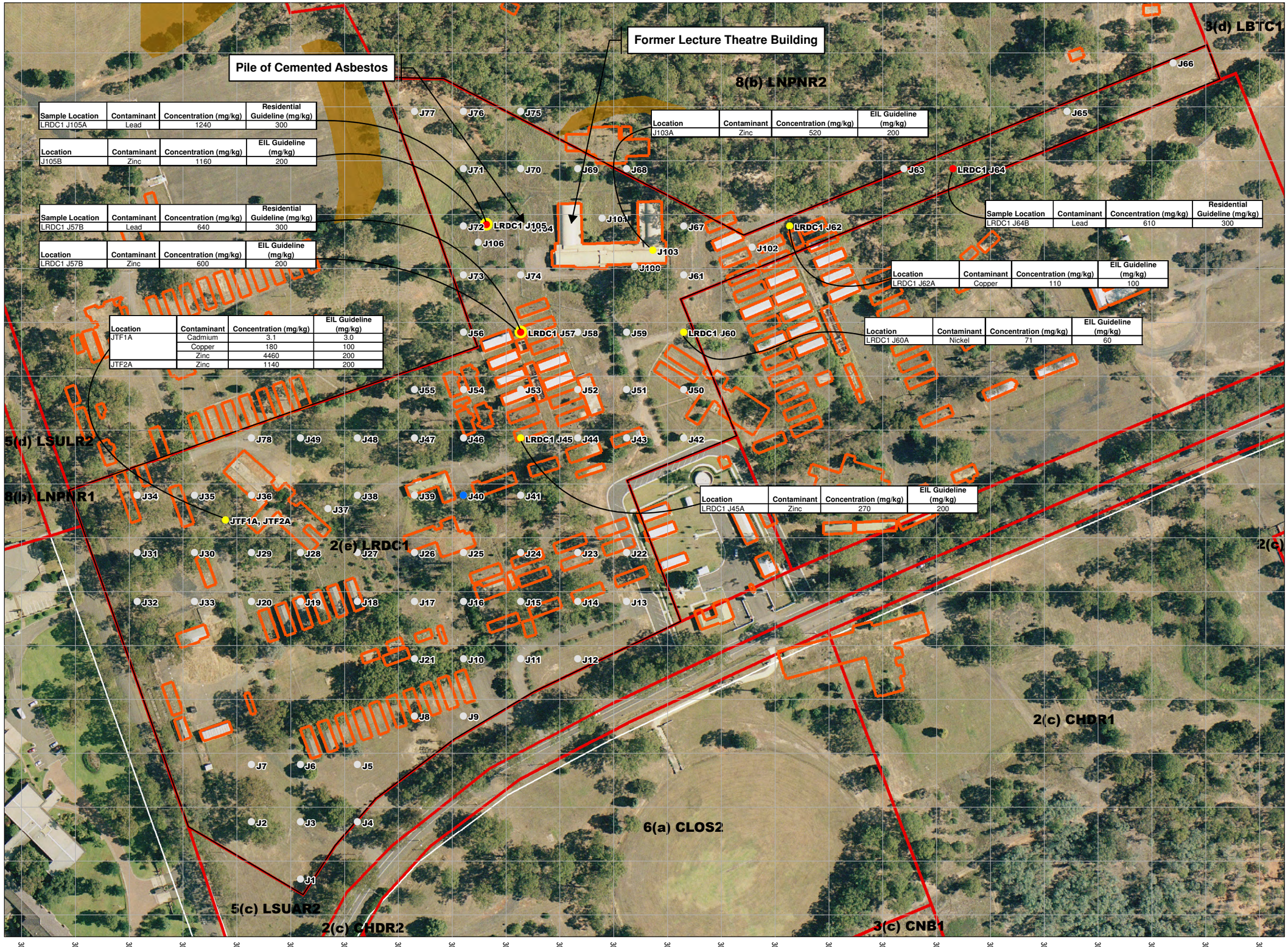
Groundwater, Surface Water and Sediment Locations

GDA 94 MGA Zone 56

July 13, 2007
I:\ENVR\Projects\EN02203\Technical\GIS\Template\EN02203_048.mxd

0 25 50
Metres

Figure 4: LRP1 Stage II Investigation Locations



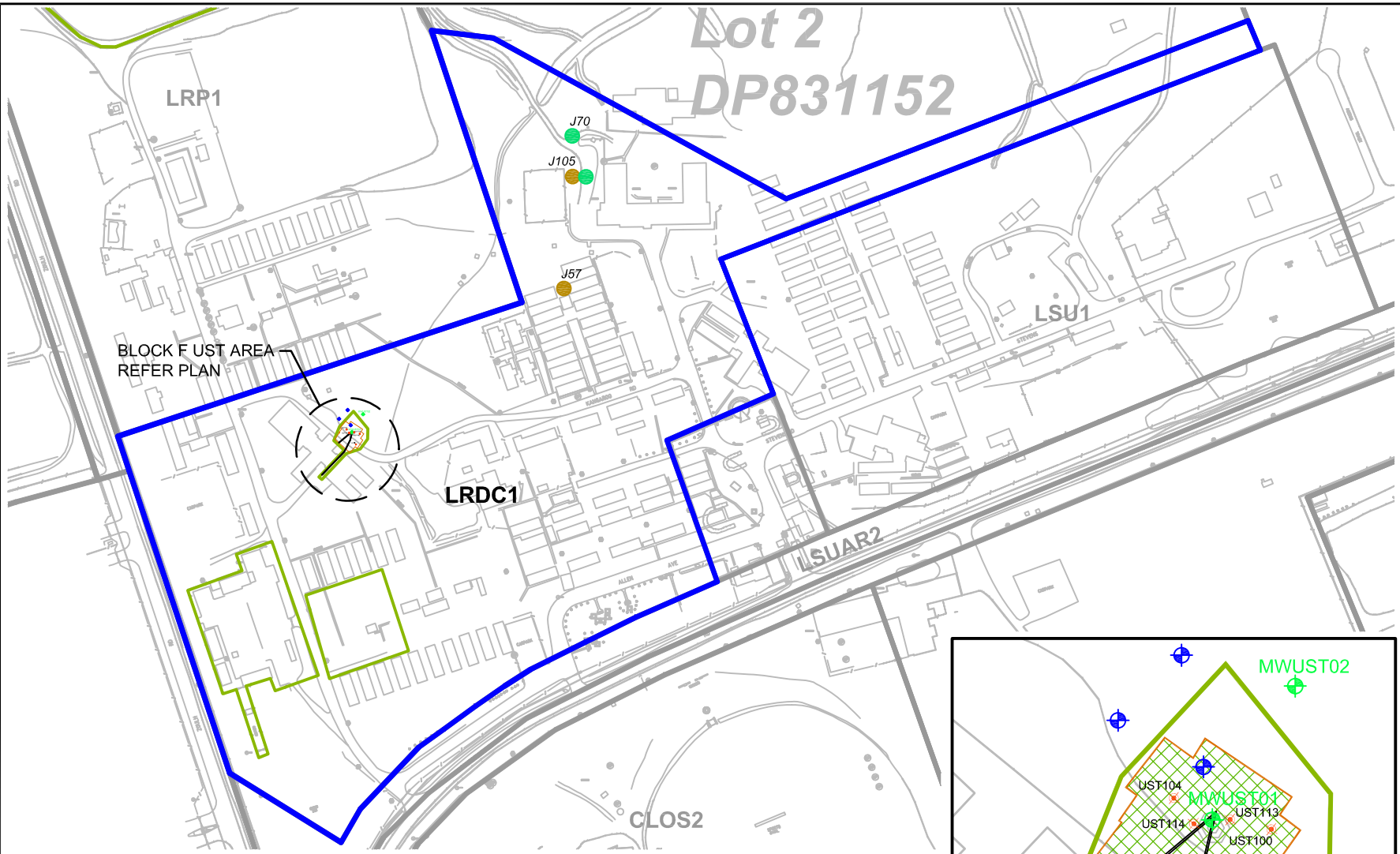
SINCLAIR KNIGHT MERZ SKM

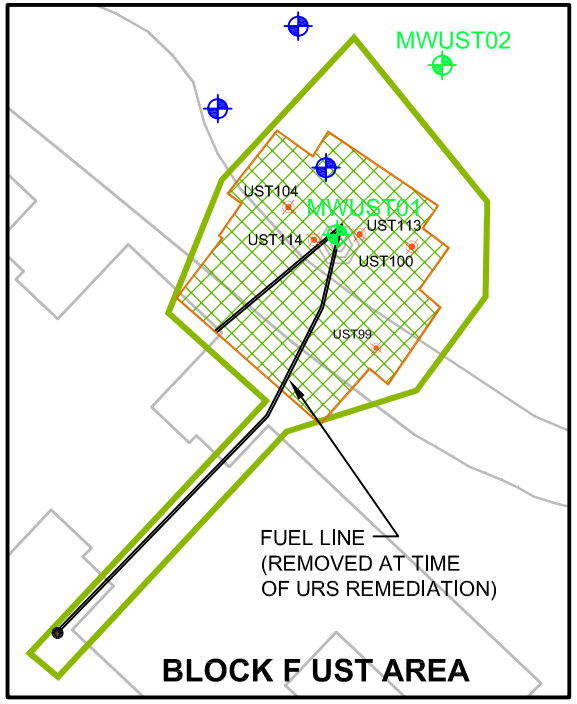
GDA 94 MGA Zone 56

December 16, 2008
I:\ENVR\Projects\EN02203\Technical\GIS\Template\EN02203_051a.mxd

0 50 100
Metres

Figure 4: LRDC1 Stage II Investigation Locations





PROJECT-FILE NAME	S09166-01-F004
DATE	30/08/2009
DRAWN	RR
APPROVED	RO

LEGEND

- LIVERPOOL CITY COUNCIL SUB-SITE BOUNDARIES
- CAMPBELLTOWN CITY COUNCIL SUB-SITE BOUNDARIES
- BUILDING FOOTPRINTS (PREVIOUS & CURRENT)
- AREAS OF SITE SUBJECT TO PREVIOUS SITE AUDIT REPORT AND SITE AUDIT STATEMENT (COFFEY, 2009)
- EXTENT OF URS REMEDIATION EXCAVATION (URS, 2002)

PRE-REMEDIATION WORKS REQUIRED:

INSPECTION OF BUILDING FOOTPRINTS FOR ACM AND PAINT FRAGMENTS.(SEE APPENDIX F)
INSPECTION OF SUB-SITE FOR VISIBLE CONTAMINATION AND PHYTOTOXIC IMPACT.

- EXISTING MONITORING WELL
- PROPOSED LOCATION FOR NEW MONITORING WELLS

REMEDIATION WORKS REQUIRED:

ESTIMATED EXTENT OF REMEDIATION -

- ASBESTOS FIBRES
- LEAD - APPROX. 500m³ (SEE TABLE 4)
- TPH and BTEX
- RESIDUAL TPH & BTEX (URS, 2002)

REMOVAL OF ACM SURROUNDING BUILDINGS.
REMOVAL OF FLY TIP WASTE AT BLOCK F.
REMOVAL OF FLY TIP WASTE (SEE APPENDIX C).

SUB-SITE AREA: **10.7ha**
PROPOSED LAND USE: **Residential (low density)**

0 40 80 120
metres

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
REMEDIAL ACTION PLAN
INGLEBURN DEFENCE SITE

TITLE
LRDC1 - ESTIMATED EXTENT OF REMEDIATION WORKS

FIGURE
4

Ryall Environmental Pty Limited
ABN 70 131 833 228
PO Box 1021
Rozelle NSW 2039

A5. AECOM (2011) Site Audit Areas

300800.000000 301500.000000 302200.000000 302900.000000 303600.000000

6239500.000000
6239000.000000
6238500.000000
6238000.000000
6237500.000000

LSU3 LSU2 LSUAR1 CSUPPC1 LRP3 LNPNR3 LRP2 LBTC1 LRR1 LNPNR2 LRP1 LSULR2 LNPNR1 Block A CSUAR1 CNPNR1 Block B LSULR1 Block N CGB1 Block D LSU1 Block C Block M CLOS1 CLOS1 LRDC1 Block E Block F CHDR1 CHDR3 CSU1 Block L Block J CLOS2 LSUAR2 Block G CNB1 CLOS1 CSU2 CSULR1 Block I Block G CHDR2 Block K CHDR4 Block H CEP1 CEP1 CPOS1 CLOS3

Image © 2010 Google/SKM/Fugro

Legend

- Site Boundary
- Area Excluded from the Site Audit Statement (Surveyed)
- Fill Areas
- POL Areas (Approximate Location)

Zoning (Liverpool)

- B1 Neighbourhood Centre
- E1 National Parks and Nature Reserves
- R1 General Residental
- R5 Large Lot Residential
- RE1 Public Recreation
- SP2 Infrastructure

Zoning (Campbelltown)

- 2 (c) Higher Density Residential
- 3 (a) General Business
- 3 (c) Neighbourhood Business
- 5 (a) Special Uses A
- 5 (b) Special Uses Arterial Roads
- 5 (d) Special Uses Local Roads
- 5 (e) Special Uses Public Purposes Corridor
- 6 (a) Local Open Space
- 6 (c) Private Open Space
- 7 (d5) Environmental Protection 1 Hectare Minimum
- 8 (b) National Parks and Nature Reserves

Figure 5

Fill Areas as per DCP and POL (Petroleum, Oil Lubricant Blocks)

Client:	Department of Defence	
Project:	Ingleburn Defence Site Stage 3 Remediation Validation Report	
Drawing No:	0113181s_VALR_G048_R0.mxd	
Date:	03/05/2011	Drawing size: A3
Drawn by:	NS	Reviewed by: HC
Projection:	GDA 1994 MGA Zone 56	
Scale:	Refer to Scale Bar	

N

0 100 200 300m

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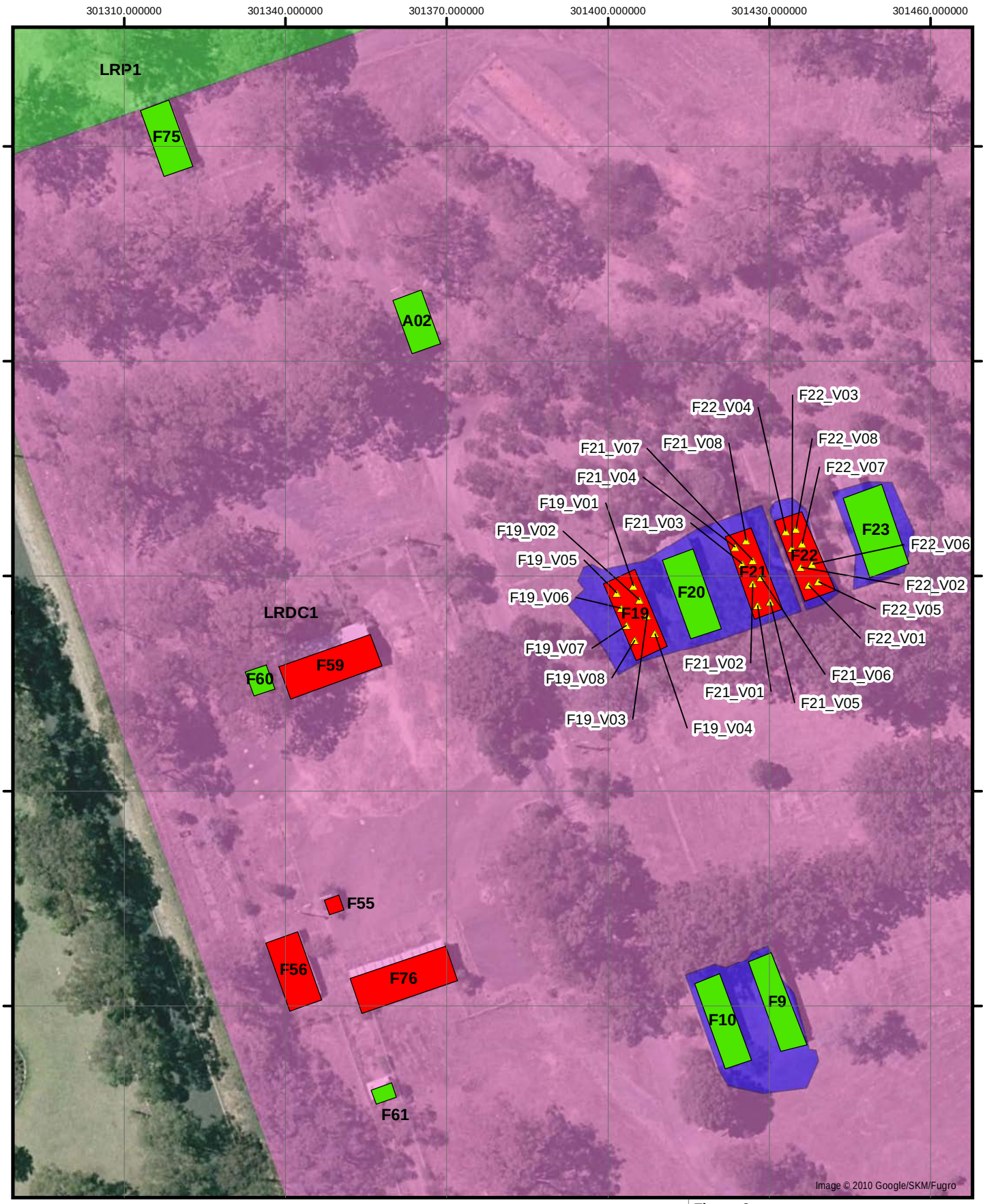
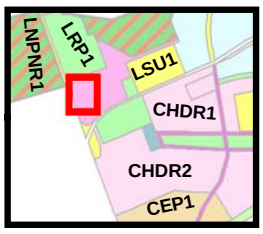
ERM



Legend

- Building Validation Sample
- Building Not Sampled
- Building Sampled
- Scraped Area



Notes:
F59, F56, F55 and F76: No samples taken - slab present

Client:	Department of Defence	
Project:	Ingleburn Defence Site Stage 3 Remediation Validation Report	
Drawing	0113181s_VALR_G010_R0.mxd	
Date:	22/06/2011	Drawing Size: A4
Drawn By:	NS	Reviewed By: HC
Projection:	GDA 1994 MGA Zone 56	
Scale:	Refer to scale bar	

N

0 5 10 15m

Figure 9

Location of Demolished Building Footprints and Validation Samples in LRDC1 - F59, F19, F21, F22, F56, F55, F76, F75, A02, F20, F23, F61, F10 and F9

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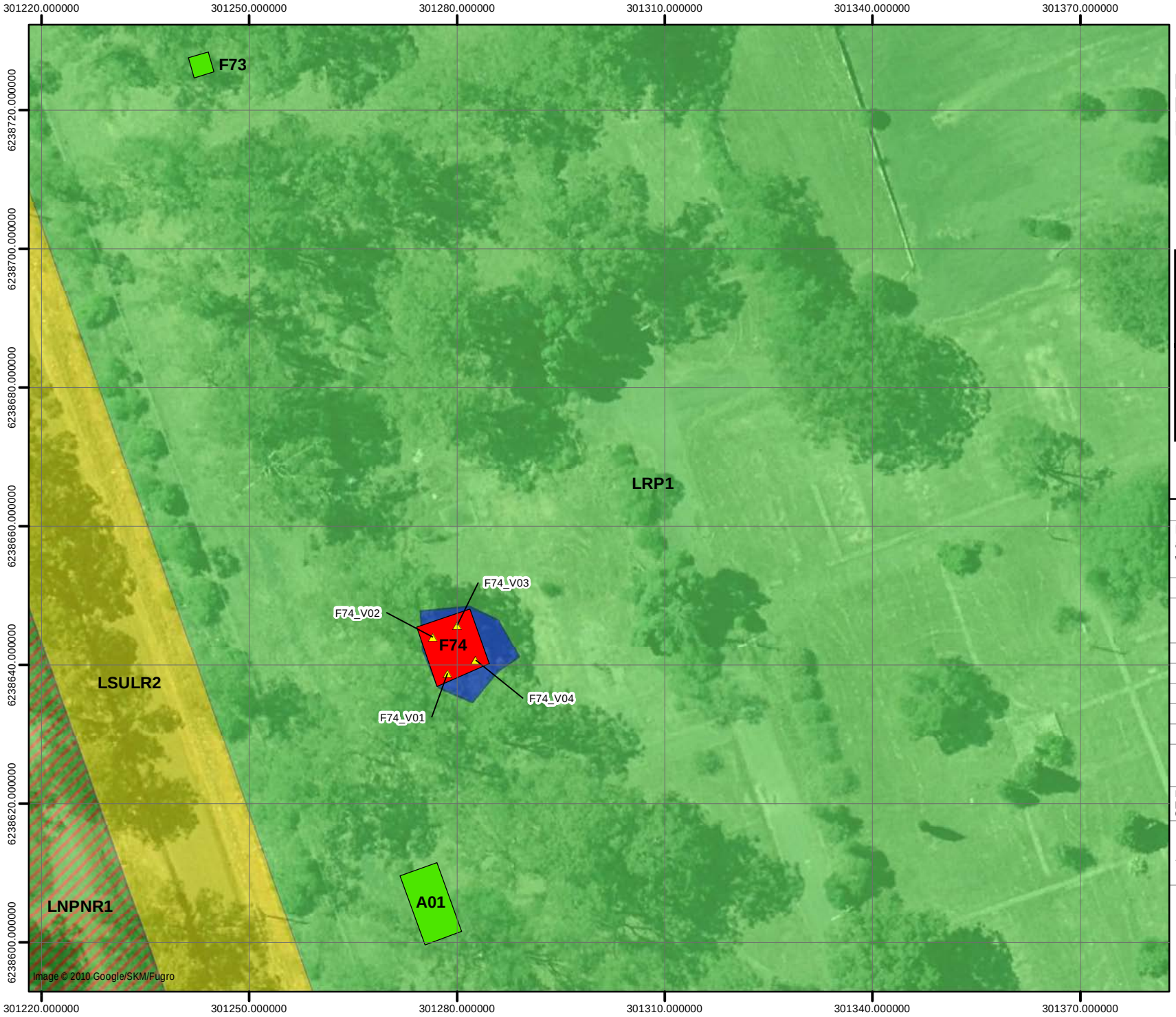
ERM



Legend

- Building Validation Sample
- Building Not Sampled
- Building Sampled
- Scraped Area

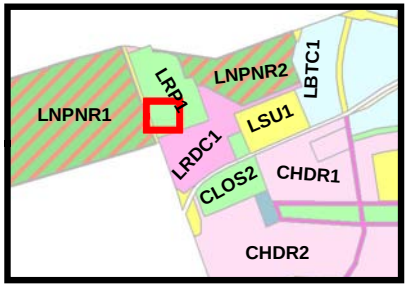


Figure 10

Location of Demolished Building Footprints and Validation Samples- A01, F73 and F74, within subsite LRP1

Client:	Department of Defence	
Project:	Ingleburn Defence Site Stage 3 Remediation Validation Report	
Drawing No:	0113181s_VALR_G011_R0.mxd	
Date:	6/21/2011	Drawing Size: A4
Drawn By:	NS	Reviewed By: HC
Projection:	GDA 1994 MGA Zone 56	
Scale:	Refer to scale bar	

N

0 5 10 15m

Environmental Resources Management Australia Pty Ltd

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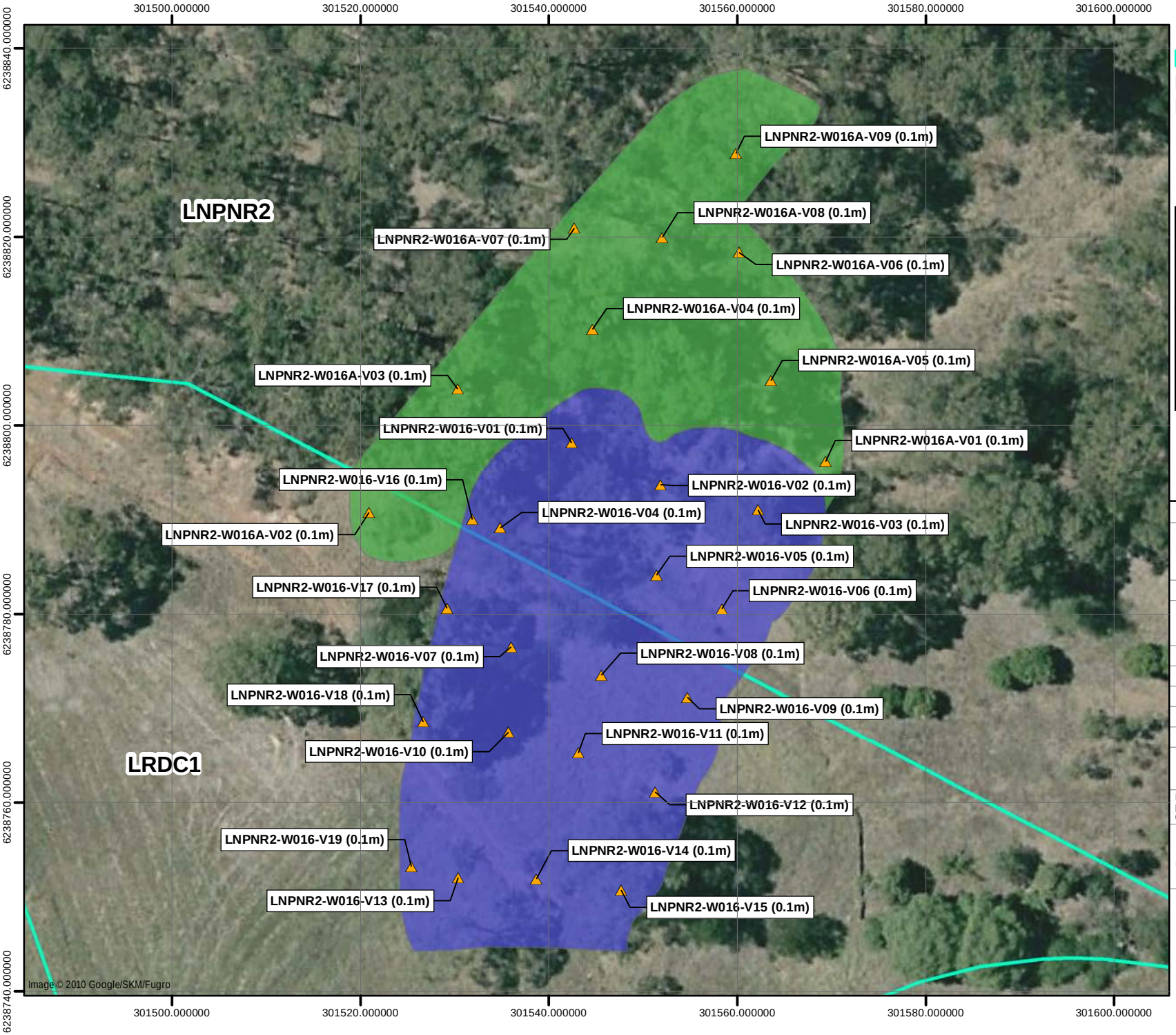
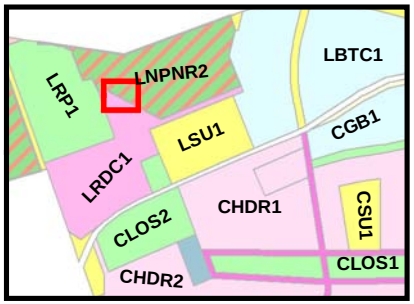
ERM



Legend

- Sub-site
- Excavated Area
- Additional Scrape Conducted during Febuary 2011



Notes:
Sample depths (in metres below ground surface) have been provided beside each sample location.

Figure 33

LNPNR2_W016 (Creekline Excavation) Fly-Tipped Waste Validation

Client:	Department of Defence	
Project:	Ingleburn Defence Site Stage 3 Remediation Validation Report	
Drawing No:	0113181s_VALR_G030_R0.mxd	
Date:	24/06/2011	Drawing Size: A4
Drawn By:	NS	Reviewed By: HC
Projection:	GDA 1994 MGA Zone 56	
Scale:	Refer to scale bar	

N

0 5 10 15m

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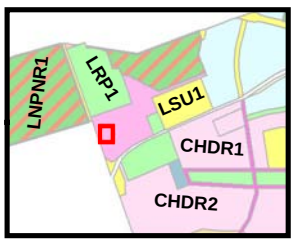
ERM

Legend

- Validation Sample (Pit Wall)
- Validation Sample (Pit Base)
- Block F Interceptor Pits



Notes:
Sample Depths (in metres below ground level) have been provided beside each sample location.

Client:	Department of Defence
Project:	Ingleburn Defence Site Stage 3 Remediation Validation Report
Drawing	0113181s_VALR_G038_R0.mxd
Date:	21/06/2011 Drawing Size: A4
Drawn By:	NS Reviewed By: HC
Projection:	GDA 1994 MGA Zone 56
Scale:	Refer to scale bar

N

0 2.5 5 7.5m

Figure 41

Block F Interceptor Pits Excavation and Validation - LRDC1

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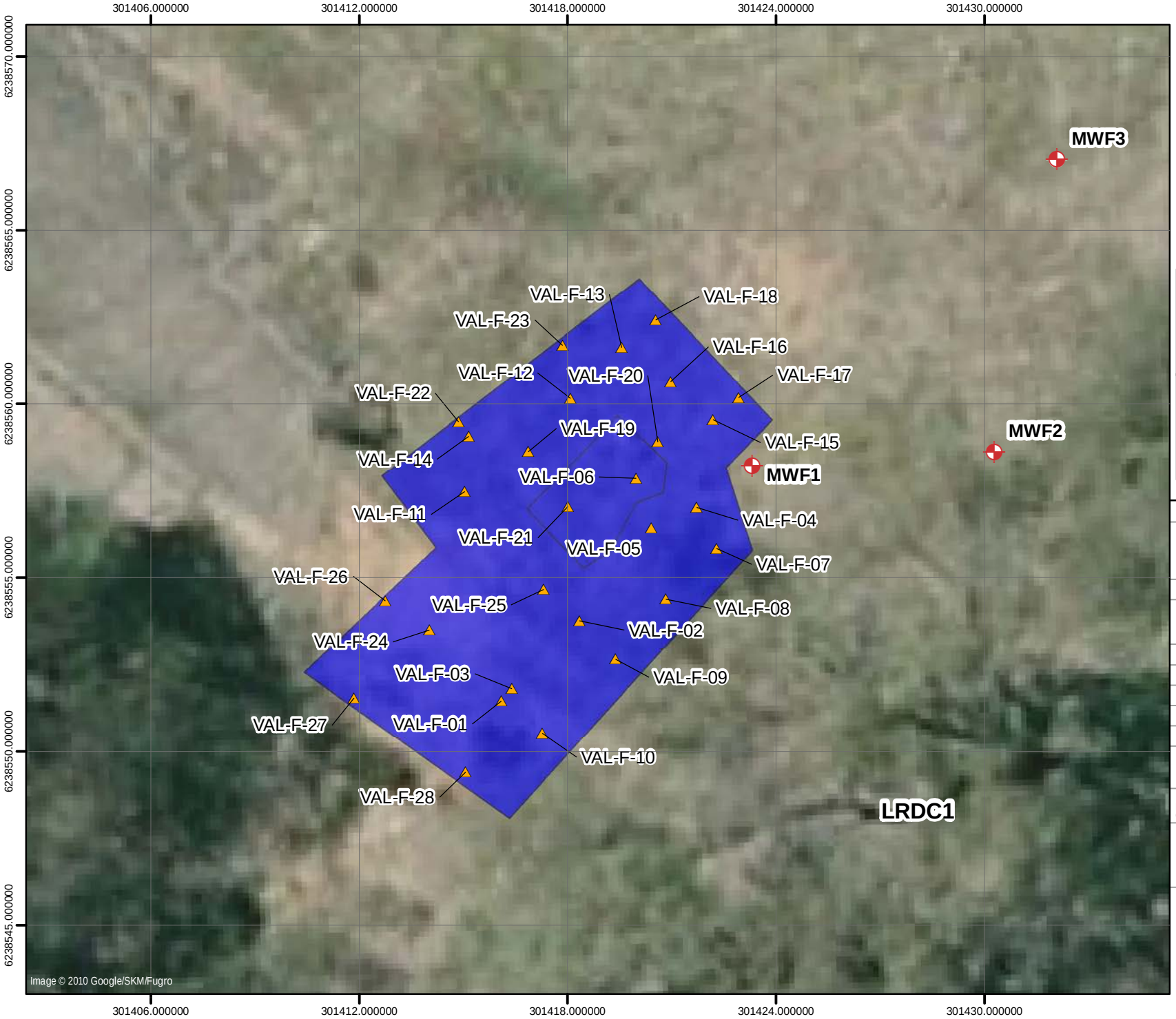
ERM



Legend

- Sample Locations
- Block F Monitoring Wells
- Excavation Extent

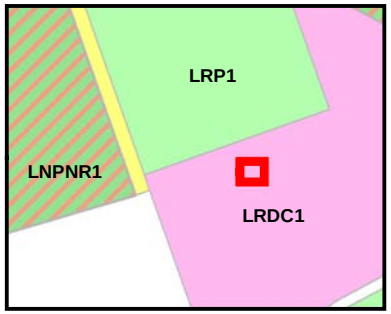


Figure 44

Location of Validation Samples - Block F UST (subsite LRDC1)

Client:	Department of Defence	
Project:	Ingleburn Defence Site Stage 3 Remediation Validation Report	
Drawing No:	0113181s_VALR_G041_R0.mxd	
Date:	22/06/2011	Drawing Size: A4
Drawn By:	NS	Reviewed By: HC
Projection:	GDA 1994 MGA Zone 56	
Scale:	Refer to scale bar	

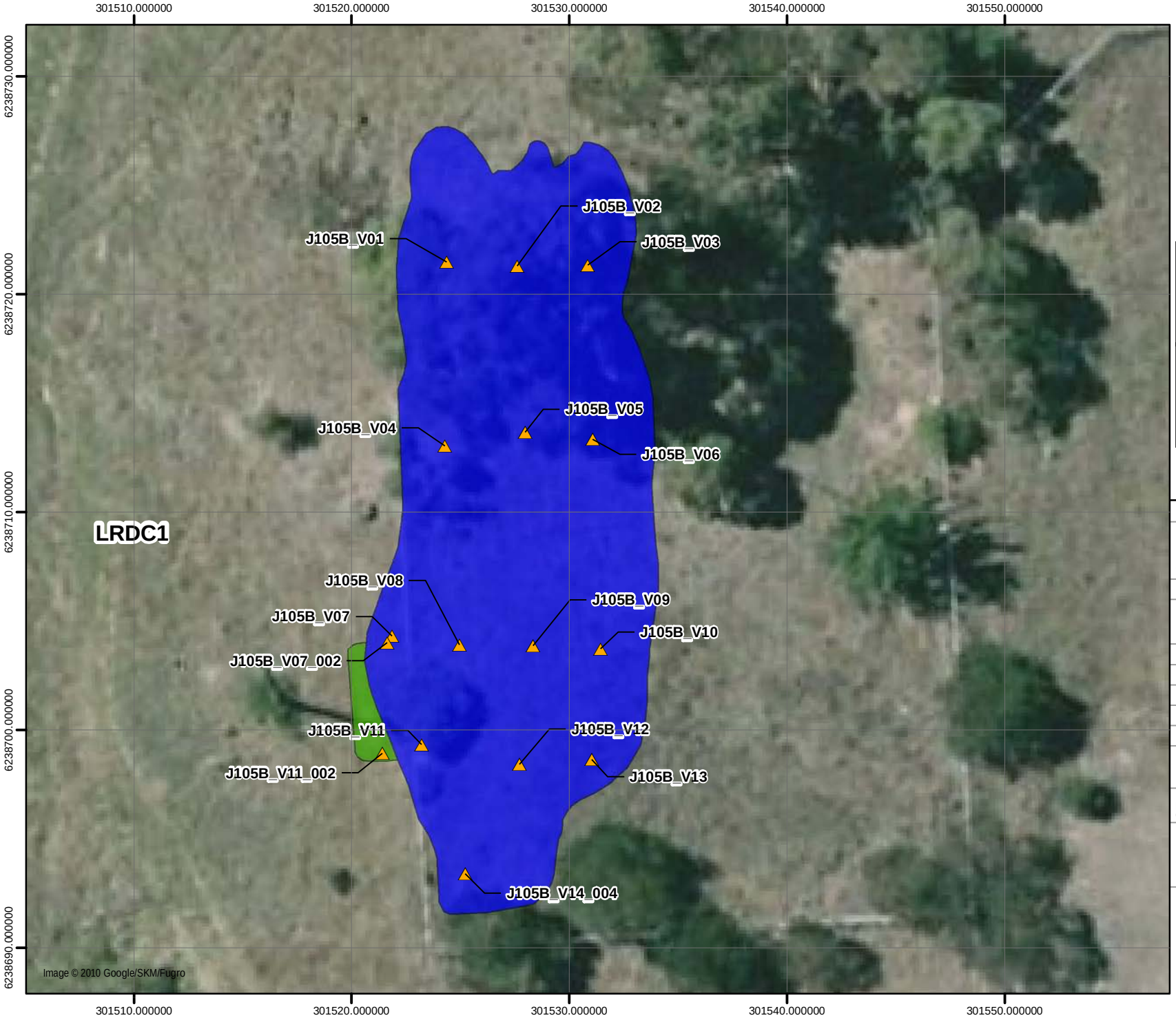
N

0 1 2 3m

Environmental Resources Management Australia Pty Ltd

Brisbane, Canberra, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney

ERM



Legend

- Validation Sample
- Scraped Area
- Additional Scraped area (11/03/2011)

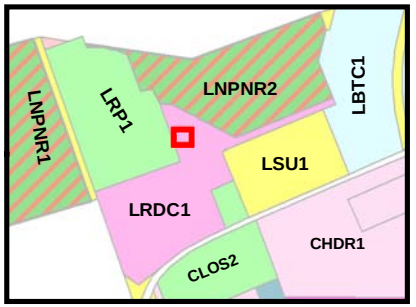


Figure 62

Location of Hotspot J105B Remediation Extent and Validation Sampling in LRDC1

Client:	Department of Defence	
Project:	Ingleburn Defence Site Stage 3 Remediation Validation Report	
Drawing No:	0113181s_VALR_G057_R0.mxd	
Date:	05/05/2011	Drawing Size: A4
Drawn By:	NS	Reviewed By: HC
Projection:	GDA 1994 MGA Zone 56	
Scale:	Refer to scale bar	

N

0 2.5 5 7.5m

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ERM

A6. JBS&G 2021 Sample Locations

Legend

- Approximate Site Boundary
- NSW Cadastre (DFSI, 2021)

Site Features

- ACM Area
- ACM Pipe
- Reported Water Main Locations (GHD)
- Hydrant
- Telstra Pit

Sample Locations

- ACM
- Monitoring Well
- Test Pit, Asbestos
- Test Pit, Asbestos & PFAS
- Test Pit, Investigation
- Test Pit, PFAS

JBS&G

Job No: 57485

Client: Landcom

Version: R02 Rev A	Date: 25-Jun-2021
Drawn By: JA	Checked By: MD

Scale 1:2,250

0 25 50
metres

Coord. Sys. GDA 1994 MGA Zone 56

Lot 5

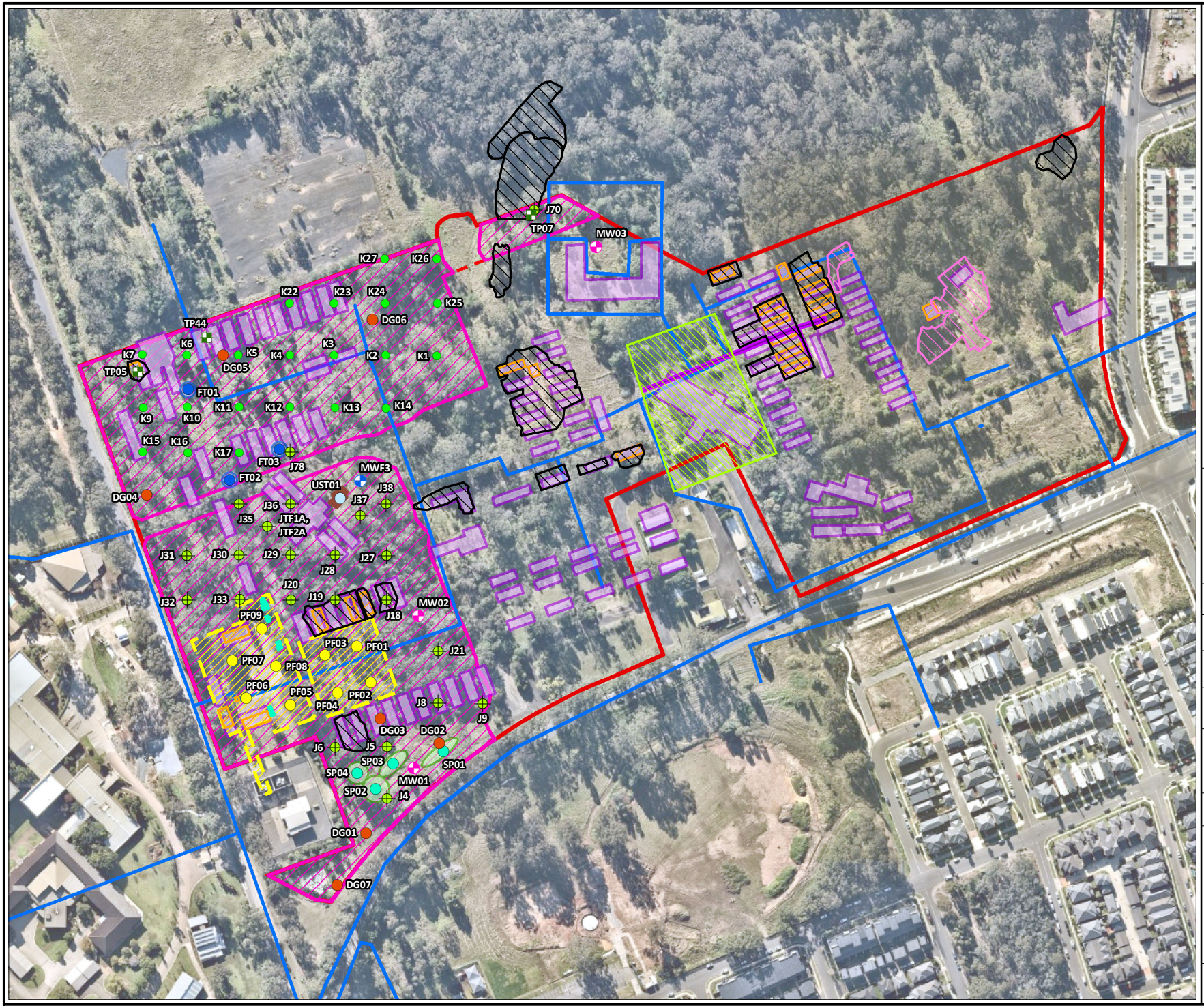
Campbelltown Road, Edmonson Park, NSW

SAMPLE LOCATIONS

FIGURE 4

File Name: N:\Projects\Landcom\57485 Ed Park Precinct 3\GIS\Maps\R02 Rev A\57485_04_SampleLocaitons.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 19/05/2021)

A7. JBS&G 2023a Sample Locations



Legend

- Approximate Site Boundary
- Stage Boundary
- Investigation Area

Validation Areas:

- Sampled Building Footprints
- EOW Burn Pits
- Excavation Area
- GPR
- Interceptor Pit
- Scraped Area
- ACM Pipe Excavation Trench
- POL-F Investigation Area (URS, 2004)

Site Features

- Historic Building Footprints
- Fly-Tipping Extent
- Stockpile
- Hydrant Lines

Sample Location, JBS&G (2022)

- POL-F Sample
- Monitoring Well
- Stockpile Sample
- UST
- Data Gap Sample
- Fly Tipping Sample

Sample Location, JBS&G (2021)

- Monitoring Well
- Test Pit, Asbestos

Historical Sample Locations

- Soil Sample, SKM 2007
- Soil Sample, SKM 2008

JBS&G

Job No: 63325

Client: Landcom

Version: R04 Rev 0	Date 18/01/2023
Drawn By: YY/PA	Checked By: MD

Scale 1:3,500

0 40 80

metres

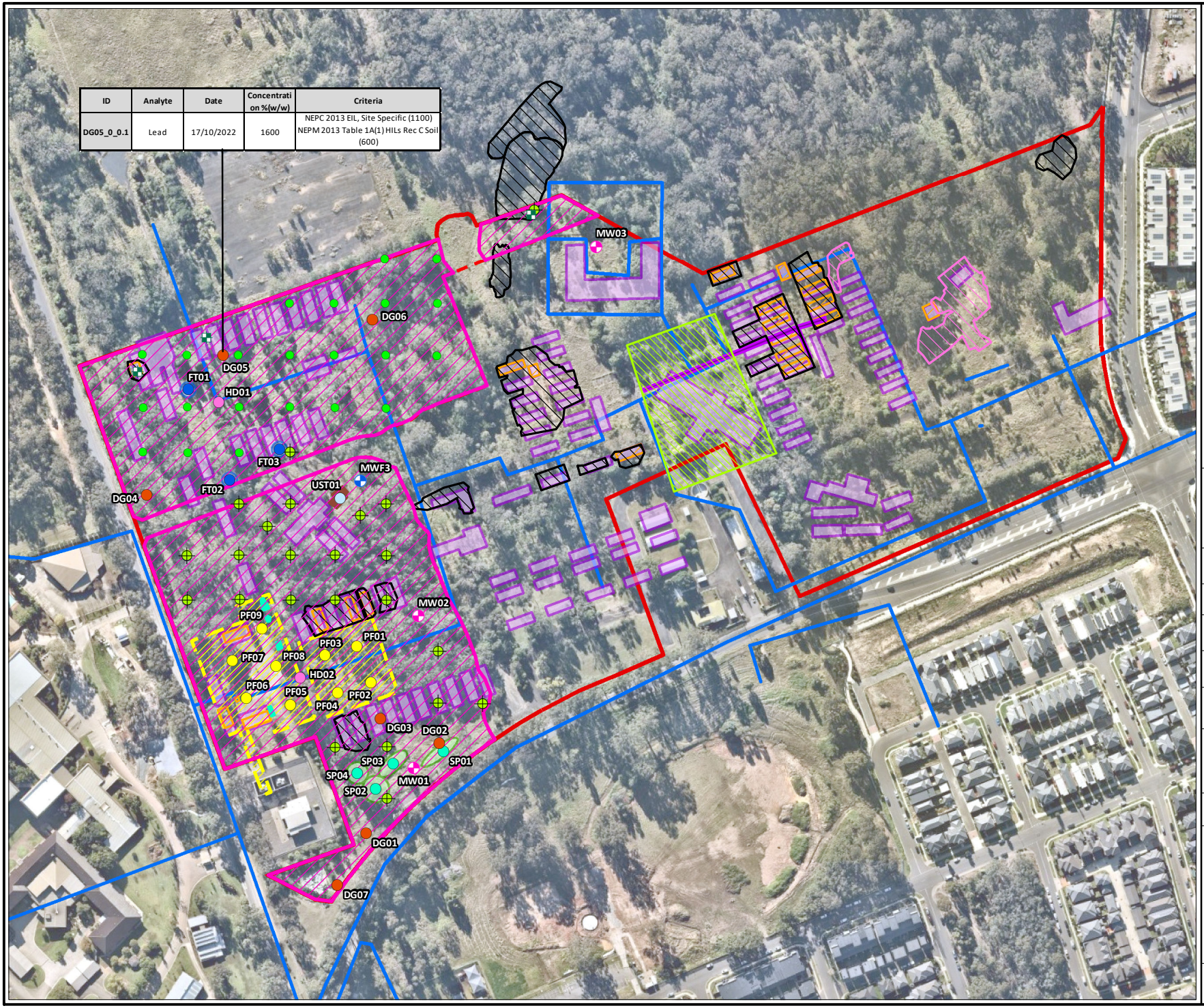
Coord. Sys. GDA 1994 MGA Zone 56

Campbelltown Road, Edmondson Park, NSW

HISTORICAL SAMPLE LOCATIONS

FIGURE 3A

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\R04 Rev A\63325_03A_HistoricalSampleLocations.mxd
Reference: www.nearmap.com - 20220604



Legend

- Approximate Site Boundary
- Stage Boundary
- Investigation Area
- Hydrant Lines
- POL-F Investigation Area (URS, 2004)

Validation Areas:

- Sampled Building Footprints
- EOW Burn Pits
- Excavation Area
- GPR
- Interceptor Pit
- Scraped Area
- ACM Pipe Excavation Trench

Site Features

- Historic Building Footprints
- Fly-Tipping Extent
- Stockpile

Sample Location, JBS&G (2022)

- POL-F Sample
- Monitoring Well
- Stockpile Sample
- UST
- Data Gap Sample
- Fly Tipping Sample
- Hydrant Samples

Sample Location, JBS&G (2021)

- Monitoring Well
- Test Pit, Asbestos

Historical Sample Locations

- Soil Sample, SKM 2007
- Soil Sample, SKM 2008

JBS&G

Job No: 63325

Client: Landcom

Version: R04 Rev 0	Date 18/01/2023
Drawn By: YY/PA	Checked By: MD

Scale 1:3,500

0 40 80

metres

Coord. Sys. GDA 1994 MGA Zone 56

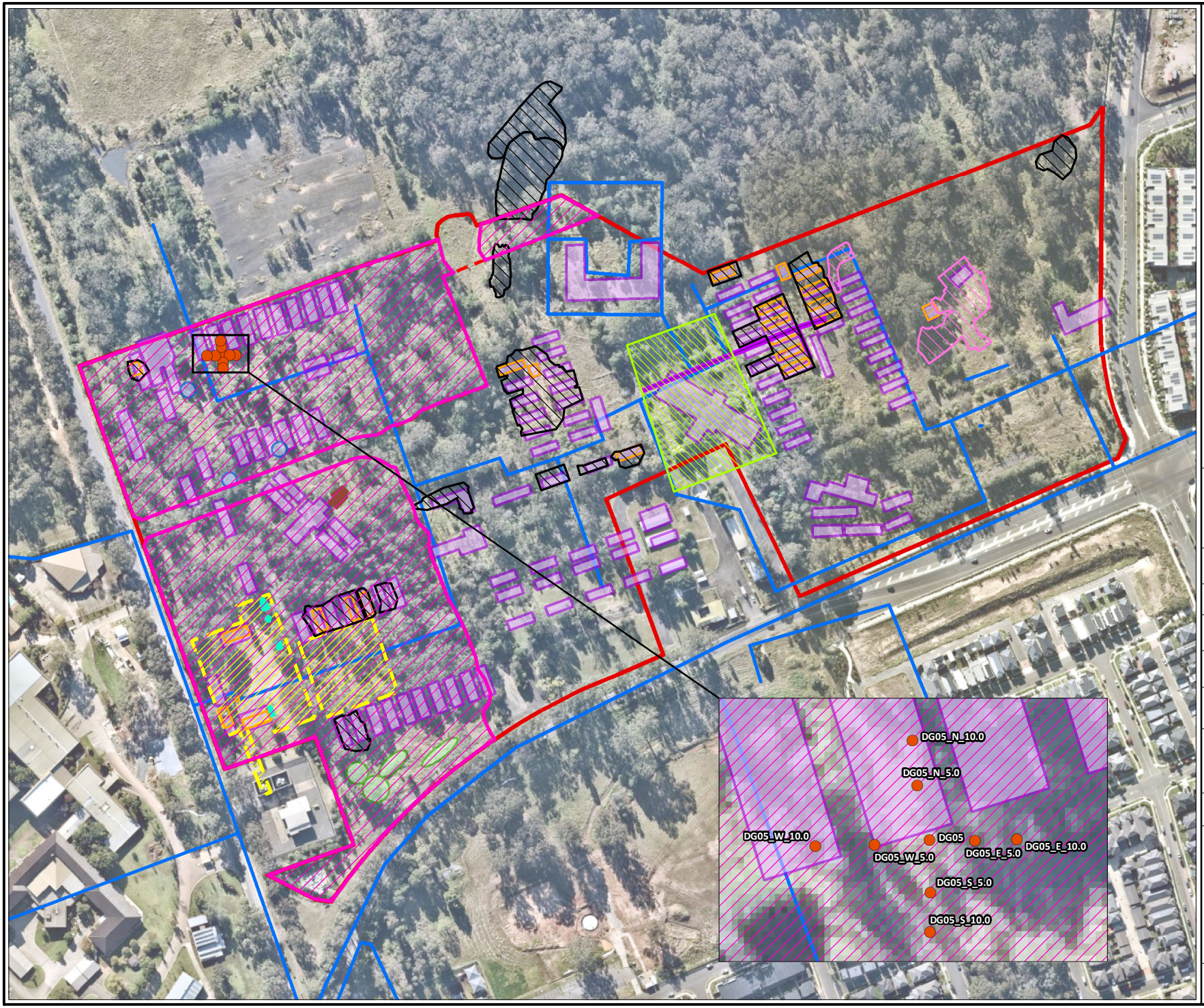
Campbelltown Road, Edmondson Park, NSW

EXCEEDANCES

FIGURE 4

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\R04 Rev A\63325_04_Exceedances.mxd
Reference: www.nearmap.com - 20220604

A8. JBS&G 2023b Sample Locations



Legend

- Approximate Site Boundary
- Stage Boundary
- Investigation Area

Site Features

- Historic Building Footprints
- Fly-Tipping Extent
- Stockpile
- Hydrant Lines
- POL-F Investigation Area (URS, 2004)

Validation Areas:

- Sampled Building Footprints
- EOW Burn Pits
- Excavation Area
- GPR
- Interceptor Pit
- Scraped Area
- ACM Pipe Excavation Trench

Sample Location, JBS&G (2022)

- Data Gap Sample

JBS&G

Job No: 63325

Client: Landcom

Version: L04 Rev A	Date 17/01/2023
Drawn By: YY/PA	Checked By: MD

Scale 1:3,500

0 40 80

metres

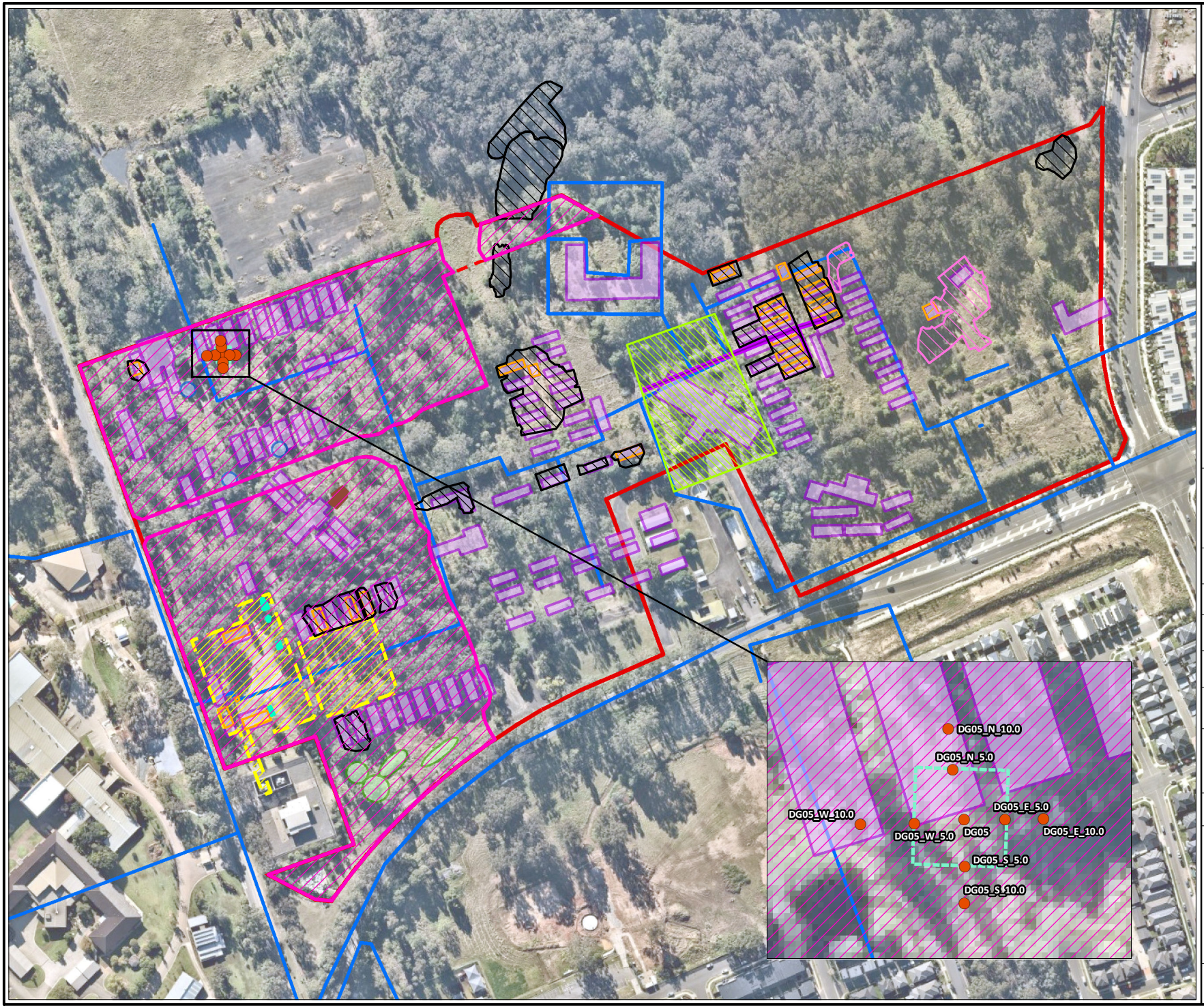
Coord. Sys. GDA 1994 MGA Zone 56

Campbelltown Road, Edmondson Park, NSW

SAMPLE LOCATIONS

FIGURE 3

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\L04 Rev A\63325_03_SampleLocations.mxd
Reference: www.nearmap.com - 20220604



Legend

- Approximate Site Boundary
- Stage Boundary
- Investigation Area

Site Features

- Historic Building Footprints
- Fly-Tipping Extent
- Stockpile
- Interpreted Extent of Lead Impact
- Hydrant Lines
- POL-F Investigation Area (URS, 2004)

Validation Areas:

- Sampled Building Footprints
- EOW Burn Pits
- Excavation Area
- GPR
- Interceptor Pit
- Scraped Area
- ACM Pipe Excavation Trench

Sample Location, JBS&G (2022)

- Data Gap Sample

JBS&G

Job No: 63325

Client: Landcom

Version: L04 Rev A	Date 18/01/2023
Drawn By: YY/PA	Checked By: MD

Scale 1:3,500

0 40 80

metres

Coord. Sys. GDA 1994 MGA Zone 56

Campbelltown Road, Edmondson Park, NSW

INTERPRETED EXTENT OF LEAD IMPACT

FIGURE 4

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\L04 Rev A\63325_04_InterpretedExtentOfLeadImpact.mxd
Reference: www.nearmap.com - 20220604

Appendix B Summary Analytical Result Tables

Table A: Historical Soil Analytical Results
Project Number: 63325
Project Name: Edmondson Park

			Metals & Metalloids								BTEX					TPH					Asbestos	Polycyclic Aromatic Hydrocarbons																			
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Ethylbenzene	m- & p- xylenes	o-xylenes	Toluene	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	Asbestos ID in Soil	Acenaphthene	Acenaphthylene	Anthracene	Indeno(1,2,4-c,d)pyrene	Benzo(a)amthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(b,k)fluoranthene	Benzo(k)fluoranthene	Dibenz(a,h)anthracene	Chrysene	Fluoranthrene	Fluorene	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			1	0.1	1	2	2	0.05	1	5						2	50	100	100			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
NEPC 2013 EIL, Site Specific			100		520	220	1100		240	570																															
NEPM 2013 Table 1A(1) HILs Rec C Soil			300	90	300	17000	600	80	1200	30000																															300
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay																																									
0-1m																																						NL			
1-2m																																						NL			
2-4m																																						NL			
>4m																																						NL			
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil											65	125			105											0.7														
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																																									
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																																									
PFAS NEMP 2020 Table 2 Health Public open space																																									
PFAS NEMP 2020 Table 3 Interim EDE All land uses																																									
Sample Location	**Sample Depth**	**Sample Date**																																							
K1A	0.05	5/03/2007	9	0.1	13	15	20	0.05	3	24	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K3B	0.1	5/03/2007	5	<0.1	8	7	11	<0.05	22	25	-	-	-	-	-	-	<50	<100	<100	-	NAD	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
K4A	0.05	5/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K5A	0.05	5/03/2007	2	<0.1	13	118	20	<0.05	22	54	-	-	-	-	-	-	-	-	-	-	**Chrysotile Detected**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K6B	0.1	6/03/2007	7	0.2	23	38	87	0.17	24	340	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K7A	0.05	6/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
K10A	0.01	5/03/2007	3	0.2	32	22	44	0.07	5	60	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUPC/K10A	-	5/03/2007	2	0.2	29	18	35	0.07	4	52	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K12B	0.1	5/03/2007	6	0.1	11	9	22	<0.05	3	27	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K14A	0.05	5/03/2007	7	0.2	13	14	37	0.07	6	53	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K15A	0.1	5/03/2007	6	0.1	10	13	26	0.07	6	43	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K17A	0.1	5/03/2007	4	0.3	16	30	93	0.05	12	110	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K17C	0.4	5/03/2007	11	<0.1	16	19	10	<0.05	4	12	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K22B	0.1	5/03/2007	6	0.1	15	18	23	<0.05	4	59	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K24B	0.1	5/03/2007	3	<0.1	5	6	6	<0.05	2	9	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K25A	0.1	5/03/2007	5	0.2	5	15	20	0.05	5	42	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K27A	0.1	5/03/2007	37	0.2	10	13	20	0.05	11	38	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K27C	0.7	6/03/2007	21	<0.1	5	18	12	<0.05	11	33	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J1B	-	1/03/2007	3	<0.1	11	2	7	<0.05	3	10	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J3A	-	1/03/2007	3	0.4	8	21	49	0.06	10	68	-	-	-	-	-	-	-	-	-	-	NAD	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
J5B	-	1/03/2007	2	<0.1	8	4	8	<0.05	2	9	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J8A	-	1/03/2007	5	0.3	10	28	46	0.05	17	41	-	-	-	-	-	-	-	-	-	-	NAD	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1
J9B	-	1/03/2007	3	<0.1	7	2	7	<0.05	2	6	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J18B	0.1	2/03/2007	2	<0.1	6	4	13	<0.05	2	41	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J20A	0.05	2/03/2007	6	0.8	15	29	110	0.17	11	99	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUPA/J20A	0.05	2/03/2007	6	0.8	15	27	110	0.12	12	96	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J28A	0.5	2/03/2007	4	0.1	9	14	39	0.08	9	35	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J30B	0.1	2/03/2007	6	<0.1	13	12	11	<0.05	3	21	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J32A	0.05	2/03/2007	<1	0.1	3	22	15	0.22	6	47	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J34B	0.1	2/03/2007	4	<0.1	6	16	29	0.06	3	28	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J36A	0.05	2/03/2007	7	0.1	12	14	36	0.1	7	56	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J37A	0.05	2/03/2007	2	0.2	4	29	28	0.1	14	49	-	-	-	-	-	-	-	-	-	-	NAD	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
J37C	?	2/03/2007	10	<0.1	20	7	13	<0.05	2	10	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J38B	0.1	2/03/2007	4	0.2	13	23	23	0.26	11	42	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J70A	0.05	5/03/2007	5	<0.1	19	16	19	<0.05	5	41	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUPA/J70A	-	3/05/2007	7	0.4	13	17	26	<0.05	6	73	-	-	-	-	-	-	-	-	-	-	**Chrisotile, Crocilodite detected**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J72B	0.1	5/03/2007	7	<0.1	8	22	11	<0.05	3	23	-	-	-	-	-	-	-	-	-	-	NAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JTF1A	0.05	20/04/2007	5	3.1	16	180	79	0.05	10	4460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JTF2A	0.05	20/04/2007	6	0.1	11	36	26	<.25	8	1140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J19A		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J20A		2/3/07 - 2/4/08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<100	100	100	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
J28A		2/3/07 - 2/4/08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<100	<100	-	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
J30B		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J33A		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
J35A		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J36A		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
J70A		5/3/07 - 3/4/08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<100	<100	-	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
J72B		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J78A		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF01	0.2-0.3	24/10/2003	8	<1	16	11	9	<0.1	7	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF01	0.7-0.8	24/10/2003	10	<1	15	19	8	<0.1	5	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF02	0.2-0.3	24/10/2003	7	<1	11	5	10	<0.1	2	7	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF02	0.4-0.5	24/10/2003	9	<1	17	10	9	<0.1	3	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF03	0.2-0.3	24/10/2003	9	<1	21	11	10	<0.1	7	25	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF03	0.4-0.5	24/10/2003	10	<1	17	8	8	<0.1	2	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF04	0.2-0.3	24/10/2003	6	<1	11	2	10	<0.1	<1	5	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF04	0.4-0.5	24/10/2003	8	<1	16	8	8	<0.1	2	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF05	0.1-0.2	24/10/2003	3	<1	8	1	12	<0.1	2	7	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF05	0.4-0.5	24/10/2003	11	<1	18	6	10	<0.1	2	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF06	0.2-0.3	23/10/2003	8	<1	18	3	18	<0.1	4	11	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF06	0.3-0.4	23/10/2003	6	<1	17	8	8	<0.1	4	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF07	0.2-0.3	24/10/2003	2	<1	6	5	13	<0.1	2	10	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A: Historical Soil Analytical Results
Project Number: 63325
Project Name: Edmondson Park

	Metals & Metalloids								BTEX					TPH					Asbestos	Polycyclic Aromatic Hydrocarbons																			
	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Ethylbenzene	m- & p- xylenes	o-xylenes	Toluene	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	Asbestos ID in Soil	Acenaphthene	Acenaphthylene	Anthracene	Indeno(1,2,4-c,d)pyrene	Benzo(a)amthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(b,k)fluoranthene	Benzo(k)fluoranthene	Dibenz(a,h)anthracene	Chrysene	Fluoranthrene	Fluorene	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	1	0.1	1	2	2	0.05	1	5						2	50	100	100			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
NEPC 2013 EIL, Site Specific	100		520	220	1100		240	570																													
NEPM 2013 Table 1A(1) HILs Rec C Soil	300	90	300	17000	600	80	1200	30000																													300
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay																																					
0-1m																																	NL			
1-2m																																	NL			
2-4m																																	NL			
>4m																																	NL			
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil									65	125			105											0.7													
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																																					
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																																					
PFAS NEMP 2020 Table 2 Health Public open space																																					
PFAS NEMP 2020 Table 3 Interim EDE All land uses																																					
Sample Location	**Sample Depth**	**Sample Date**																																			
POLF07	0.2-0.3	24/10/2003	10	<1	21	10	12	<0.1	4	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF08	0.3-0.4	23/10/2003	4	<1	7	11	13	<0.1	10	15	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF08	0.5-0.6	23/10/2003	9	<1	21	10	10	<0.1	5	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF09	0.1-0.2	23/10/2003	3	<1	10	9	18	<0.1	6	27	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF09	0.5-0.6	23/10/2003	9	<1	19	10	10	<0.1	5	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF10	0.3-0.4	23/10/2003	5	<1	11	32	39	<0.1	22	50	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
POLF10	0.6-0.7	23/10/2003	9	<1	21	10	11	<0.1	3	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF11	0.2-0.3	23/10/2003	6	<1	9	2	8	<0.1	<1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF11	0.5-0.6	23/10/2003	8	<1	19	9	8	<0.1	4	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF12	0.0-0.1	23/10/2003	10	<1	21	7	14	<0.1	3	17	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF12	0.5-0.6	23/10/2003	14	<1	14	12	9	<0.1	2	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF13	0.2-0.3	23/10/2003	8	<1	24	5	16	<0.1	4	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF13	0.4-0.5	23/10/2003	9	<1	22	6	9	<0.1	3	11	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF14	0.2-0.3	23/10/2003	3	<1	11	<1	7	<0.1	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF14	0.4-0.5	23/10/2003	8	<1	22	8	10	<0.1	5	20	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF15	0.1-0.2	24/10/2003	10	<1	11	9	9	<0.1	1	20	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
POLF15	0.4-0.5	24/10/2003	12	<1	11	8	10	<0.1	<1	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF16	0.3-0.4	23/10/2003	4	<1	11	1	7	<0.1	1	3	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF16	0.5-0.6	23/10/2003	7	<1	18	7	9	<0.1	2	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF16	-	23/10/2003	7	<1	15	1	11	<0.1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF16	-	23/10/2003	3	<1	9	3	6	<0.1	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF17	0.2-0.3	24/10/2003	8	<1	11	6	11	<0.1	4	12	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF17	0.4-0.5	24/10/2003	7	<1	14	11	9	<0.1	5	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF17	-	24/10/2003	11	<1	15	7	15	<0.1	2	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF17	-	24/10/2003	6	<1	12	8	13	<0.1	5	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF18	0.2-0.3	24/10/2003	6	<1	15	8	34	<0.1	2	50	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF18	0.4-0.5	24/10/2003	12	<1	21	6	13	<0.1	3	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF19	0.2-0.3	24/10/2003	4	<1	9	3	8	<0.1	2	6	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
POLF19	0.4-0.5	24/10/2003	13	<1	23	7	12	<0.1	4	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF20	0.4-0.5	24/10/2003	9	<1	15	6	10	<0.1	<1	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF21	0.1-0.2	24/10/2003	5	<1	11	6	23	<0.1	2	16	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF21	0.4-0.5	24/10/2003	9	<1	15	8	9	<0.1	<1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF22	0.1-0.2	24/10/2003	4	<1	10	5	12	<0.1	2	10	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF22	0.3-0.4	24/10/2003	7	<1	17	6	10	<0.1	3	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF23	0-0.1	24/10/2003	2	<1	4	2	8	<0.1	<1	6	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF23	0.3-0.4	24/10/2003	8	<1	20	6	10	<0.1	4	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF24	0.1-0.2	24/10/2003	5	<1	16	3	10	<0.1	<1	5	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
POLF24	0.5-0.6	24/10/2003	8	<1	15	8	11	<0.1	<1	4	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF24		24/10/2003	6	<1	18	4	13	<0.1	3	6	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF24		24/10/2003	6	<1	18	4	15	<0.1	3	7	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF25	0.1-0.2	24/10/2003	6	<1	17	8	19	<0.1	6	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF25	0.5-0.6	24/10/2003	4	<1	11	9	8	<0.1	<1	6	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF26	0.1-0.2	24/10/2003	3	<1	9	2	10	<0.1	<1	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF26	0.3-0.4	24/10/2003	7	<1	22	7	9	<0.1	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF27	0.1-0.2	24/10/2003	6	<1	11	10	30	<0.1	3	31	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF27	0.3-0.4	24/10/2003	8	<1	22	7	13	<0.1	2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF28	0.1-0.2	24/10/2003	6	<1	19	4	15	<0.1	2	6	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<50	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF28	0.3-0.4	24/10/2003	10	<1	27	7	14	<0.1	6	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A: Historical Soil Analytical Results
Project Number: 63325
Project Name: Edmondson Park

Sample Location	Sample Depth	Sample Date	a-BHC	Aldrin	b-BHC	b- & g-BHC	cis-Chlordane	trans-Chlordane	delta-BHC	4,4-DDD	4,4-DDE	4,4-DDT	Aldrin + Dieldrin	Dieldrin	Endosulfan 1	Endosulfan 2	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin keytone	Heptachlor	Heptachlor Epoxide	Methoxychlor	Hexachlorobenzene	g-BHC (lindane)	Azinphos Methyl	Chlorpyrifos	Demeton (total)	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Fenthion	Malathion	Melvinphos (Phosdrin)	Monocrotophos	Parathion	Parathion Methyl	Prothiofos	Phorate	Ronnel	Fenitrothion	Sulprofos	Coumaphos
			Organochlorine Pesticides																							Organophosphate Pesticides																		
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.2		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPC 2013 EIL, Site Specific																																												
NEPM 2013 Table 1A(1) HILs Rec C Soil													10					20			10																							
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay																																												
0-1m																																												
1-2m																																												
2-4m																																												
>4m																																												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																																												
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																																												
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																																												
PFAS NEMP 2020 Table 2 Health Public open space																																												
PFAS NEMP 2020 Table 3 Interim EDE All land uses																																												
K1A	0.05	5/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K3B	0.1	5/03/2007	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
K4A	0.05	5/03/2007	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
K5A	0.05	5/03/2007	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
K6B	0.1	6/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K7A	0.05	6/03/2007	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	0	<0.2	-	0	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
K10A	0.01	5/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUPC/K10A	-	5/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K12B	0.1	5/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K14A	0.05	5/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K15A	0.1	5/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K17A	0.1	5/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K17C	0.4	5/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K22B	0.1	5/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K24B	0.1	5/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K25A	0.1	5/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K27A	0.1	5/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K27C	0.7	6/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J1B	-	1/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J3A	-	1/03/2007	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2		<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
J5B	-	1/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J8A	-	1/03/2007	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2		<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
J9B	-	1/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J18B	0.1	2/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J20A	0.05	2/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUPA/J20A	0.05	2/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J28A	0.5	2/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J30B	0.1	2/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J32A	0.05	2/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J34B	0.1	2/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J36A	0.05	2/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J37A	0.05	2/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J37C	?	2/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J38B	0.1	2/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J70A	0.05	5/03/2007	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DUPA/J70A	-	3/05/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J72B	0.1	5/03/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JTF1A	0.05	20/04/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JTF2A	0.05	20/04/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J19A		-	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
J20A		2/3/07 - 2/4/08	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
J28A		2/3/07 - 2/4/08	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
J30B		-	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
J33A		-	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
J35A		-	<0.05	<0.05	<0.05	-	2	6	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	2	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
J36A		-	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
J70A		5/3/07 - 3/4/08	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	0	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
J72B		-	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
J78A		-	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
POLF01	0.2-0.3	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF01	0.7-0.8	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF02	0.2-0.3	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF02	0.4-0.5	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF03	0.2-0.3	24/10/2003	<0.05	<0.05	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-			-				-		-	-	-		-		-	-	-	-	
POLF03	0.4-0.5	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF04	0.2-0.3	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF04	0.4-0.5	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF05	0.1-0.2	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF05	0.4-0.5	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF06	0.2-0.3	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF06	0.3-0.4	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF07	0.2-0.3	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A: Historical Soil Analytical Results
Project Number: 63325
Project Name: Edmondson Park

			Organochlorine Pesticides																							Organophosphate Pesticides																		
			a-BHC	Aldrin	b -BHC	b- & g-BHC	cis-Chlordane	trans-Chlordane	delta-BHC	4,4-DDD	4,4-DDE	4,4-DDT	Aldrin + Dieldrin	Dieldrin	Endosulfan 1	Endosulfan 2	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin keytone	Heptachlor	Heptachlor Epoxide	Methoxychlor	Hexachlorobenzene	g -BHC (lindane)	Azinphos Methyl	Chlorpyrifos	Demeton (total)	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Fenthion	Malathion	Melvinphos (Phosdrin)	Monocrotophos	Parathion	Parathion Methyl	Prothiofos	Phorate	Ronnel	Fenitrothion	Sulprofos	Coumaphos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.2		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPC 2013 EIL, Site Specific																																												
NEPM 2013 Table 1A(1) HILs Rec C Soil													10					20			10																							
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay																																												
0-1m																																												
1-2m																																												
2-4m																																												
>4m																																												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																																												
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																																												
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																																												
PFAS NEMP 2020 Table 2 Health Public open space																																												
PFAS NEMP 2020 Table 3 Interim EDE All land uses																																												
Sample Location	**Sample Depth**	**Sample Date**																																										
POLF07	0.2-0.3	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF08	0.3-0.4	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF08	0.5-0.6	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF09	0.1-0.2	23/10/2003	<0.05	<0.05	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-			-				-		-	-	-		-		-	-	-	-	
POLF09	0.5-0.6	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF10	0.3-0.4	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF10	0.6-0.7	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF11	0.2-0.3	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF11	0.5-0.6	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF12	0.0-0.1	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF12	0.5-0.6	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF13	0.2-0.3	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF13	0.4-0.5	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF14	0.2-0.3	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF14	0.4-0.5	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF15	0.1-0.2	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF15	0.4-0.5	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF16	0.3-0.4	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF16	0.5-0.6	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF16	-	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF16	-	23/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF17	0.2-0.3	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF17	0.4-0.5	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF17	-	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF17	-	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF18	0.2-0.3	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF18	0.4-0.5	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF19	0.2-0.3	24/10/2003	<0.05	<0.05	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-			-				-		-	-	-		-		-	-	-	-	
POLF19	0.4-0.5	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF20	0.4-0.5	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF21	0.1-0.2	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF21	0.4-0.5	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF22	0.1-0.2	24/10/2003	<0.05	<0.05	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-			-				-		-	-	-		-		-	-	-	-	
POLF22	0.3-0.4	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF23	0-0.1	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF23	0.3-0.4	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF24	0.1-0.2	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF24	0.5-0.6	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF24		24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF24		24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF25	0.1-0.2	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF25	0.5-0.6	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF26	0.1-0.2	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF26	0.3-0.4	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF27	0.1-0.2	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF27	0.3-0.4	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF28	0.1-0.2	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLF28	0.3-0.4	24/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table B: Historical Soil Analytical Results
Project Number: 63325
Project Name: Edmondson Park

					Metals & Metalloids								TPH				BTEX				Asbestos	Organochlorine Pesticides																					Asbestos							
					Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	Benzene	Ethyl Benzene	Total Xylene	Toluene	Asbestos	a-BHC	Aldrin	b + g-BHC	cis-Chlordane	trans-Chlordane	DDD	DDE	DDT	DDT+DDE+DDD	Aldrin + Dieldrin	Dieldrin	Endosulfan 1	Endosulfan 2	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	HCB	Heptachlor	Heptachlor Epoxide	Methoxychlor	Asbestos Containing Material [ACM] [%w/w]	Fibrous Asbestos and Asbestos Fines [FA+AF] %W/W	Asbestos Containing Material [ACM] Mass	Asbestos Fines (mass)	Fibrous Asbestos (mass)	Fibrous Asbestos and Asbestos Fines [FA+AF] Mass	Sample weight (dry - for ACM)	Asbestos Detected	Asbestos Type	Total Asbestos
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%w/w	%w/w	g	g	g	g	g	-	-	g
EQL					1	1	1	1	1	0.1	1	1	2	50	100	100		0.20	0.20	0.20	0.20		0.50	0.05	0.10	0.05	0.05	0.05	0.05	0.20			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.20	0.001	0.001							
NEPC 2013 EIL, Site Specific					100		520	220	1100		240	570																																						
NEPM 2013 Table 1A(1) HILs Rec C Soil					300	90	300	17000	600	80	1200	30000																		400	10					20				10		400								
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay																																																		
0-1m																		NL	NL		NL																														
1-2m																		NL	NL		NL																														
2-4m																		NL	NL		NL																														
>4m																		NL	NL		NL																														
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																		65	125		105																														
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																																																		
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																																																		
PFAS NEMP 2020 Table 2 Health Public open space																																																		
PFAS NEMP 2020 Table 3 Interim EDE All land uses																																																	
Sample ID	**Sample Depth**	**Sample Date**	**SDG**	**Purpose**																																														
F19_V01	0.1	14/07/2010	49271	Validation Building	7	<0.1	17	7	21	0.07	6	27	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F19_V02	0.1	14/07/2010	49271	Validation Building	9	<0.1	26	8	23	0.12	4	20	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F19_V03	0.1	14/07/2010	49271	Validation Building	8	<0.1	27	6	22	0.08	5	28	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F19_V04	0.1	14/07/2010	49271	Validation Building	6	<0.1	16	4	15	0.09	3	14	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F19_V05	0.1	14/07/2010	49271	Validation Building	8	<0.1	17	7	19	0.1	3	21	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F19_V06	0.1	14/07/2010	49271	Validation Building	8	<0.1	28	7	18	0.07	6	17	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	0.28	<0.05	0.08	<0.2	0.21	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F19_V07	0.1	14/07/2010	49271	Validation Building	6	0.6	23	36	333	0.17	7	194	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F19_V08	0.1	14/07/2010	49271	Validation Building	9	<0.1	23	6	21	0.07	3	10	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F21_V01	0.1	16/07/2010	49314	Validation Building	7	<0.1	32	5	49	0.08	3	25	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F21_V02	0.1	16/07/2010	49314	Validation Building	5	<0.1	23	4	13	0.08	3	10	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F21_V03	0.1	16/07/2010	49314	Validation Building	6	0.6	22	19	138	0.11	6	91	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	0.35	<0.05	0.12	<0.2	0.35	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F21_V04	0.1	16/07/2010	49314	Validation Building	7	0.2	25	9	37	0.13	5	93	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.16	<0.2	0.49	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F21_V05	0.1	16/07/2010	49314	Validation Building	4	0.2	15	22	83	0.18	6	60	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.45	<0.2	1.18	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F21_V06	0.1	16/07/2010	49314	Validation Building	7	<0.1	27	4	19	0.07	3	21	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	0.09	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F21_V07	0.1	16/07/2010	49314	Validation Building	6	0.2	18	7	40	0.06	3	32	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F21_V08	0.1	16/07/2010	49314	Validation Building	5	<0.1	16	8	28	0.08	3	22	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F22_V01	0.1	16/07/2010	49314	Validation Building	3	<0.1	15	4	11	0.07	2	9	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F22_V02	0.1	16/07/2010	49314	Validation Building	3	<0.1	11	5	17	0.12	2	15	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F22_V03	0.1	16/07/2010	49314	Validation Building	4	0.1	24	8	23	0.07	3	24	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F22_V04	0.1	16/07/2010	49314	Validation Building	4	0.1	17	7	20	0.08	3	24	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F22_V05	0.1	16/07/2010	49314	Validation Building	3	<0.1	16	3	12	0.05	2	6	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F22_V06	0.1	16/07/2010	49314	Validation Building	3	<0.1	13	5	14	0.08	3	11	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F22_V07	0.1	16/07/2010	49314	Validation Building	4	<0.1	19	4	12	<0.05	3	8	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F22_V08	0.1	16/07/2010	49314	Validation Building	4	<0.1	20	5	13	0.08	3	12	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
J105B_V01	0.1	18/11/2010	ES1023578	Validation Hotspot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.01	<0.01	<0.01	<0.02	207	No	-	<0.01
J105B_V02	0.1	18/11/2010	ES1023578	Validation Hotspot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.004	<0.004	<0.01	<0.01	<0.01	<0.02	262	No	-	<0.01
J105B_V03	0.1	18/11/2010	ES1023578	Validation Hotspot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.01	<0.01	<0.01	<0.02	213	No	-	<0.01
BLOCK_F_IP1_V06_1.0	1	18/11/2010	ES1023578	Validation Interceptor Pits	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BLOCK_F_IP1_V07_1.0	1	18/11/2010	ES1023578	Validation Interceptor Pits	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BLOCK_F_IP1_V08_1.0	1	18/11/2010	ES1023578	Validation Interceptor Pits	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BLOCK_F_IP1_V09_1.7	1.7	18/11/2010	ES1023578	Validation Interceptor Pits	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table B: Historical Soil Analytical Results
Project Number: 63325
Project Name: Edmondson Park

Sample ID	Sample Depth	Sample Date	SDG	Purpose	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	Benzene	Ethyl Benzene	Total Xylene	Toluene	Asbetsos
					Metals & Metalloids									TPH				BTEX				Asbestos
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
EQL					1	1	1	1	1	0.1	1	1	2	50	100	100		0.20	0.20	0.20	0.20	
NEPC 2013 EIL, Site Specific					100		520	220	1100		240	570										
NEPM 2013 Table 1A(1) HILs Rec C Soil					300	90	300	17000	600	80	1200	30000										
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay																						
0-1m																		NL	NL		NL	
1-2m																		NL	NL		NL	
2-4m																		NL	NL		NL	
>4m																		NL	NL		NL	
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																		65	125		105	
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																						
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																						
PFAS NEMP 2020 Table 2 Health Public open space																						
PFAS NEMP 2020 Table 3 Interim EDE All land uses																						
IP1_F_01	1	12/10/2010	ES1020448	Validation Interceptor Pits	14	<1	19	15	13	<0.1	5	35	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP1_F_02	1	12/10/2010	ES1020448	Validation Interceptor Pits	9	<1	21	14	11	<0.1	5	25	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP1_F_03	1	12/10/2010	ES1020448	Validation Interceptor Pits	8	<1	13	17	8	<0.1	3	24	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP1_F_04	1	12/10/2010	ES1020448	Validation Interceptor Pits	8	<1	17	13	12	<0.1	4	35	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP1_F_05	1.5	12/10/2010	ES1020448	Validation Interceptor Pits	18	<1	22	20	18	<0.1	9	62	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP2_F_01	0.8	12/10/2010	ES1020448	Validation Interceptor Pits	9	<1	16	10	42	<0.1	3	52	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP2_F_02	0.6	12/10/2010	ES1020448	Validation Interceptor Pits	17	<1	14	14	37	<0.1	4	43	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP2_F_03	0.5	12/10/2010	ES1020448	Validation Interceptor Pits	22	<1	43	9	26	0.1	5	24	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP2_F_04	0.6	12/10/2010	ES1020448	Validation Interceptor Pits	13	<1	23	13	24	<0.1	6	47	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP2_F_05	1	12/10/2010	ES1020448	Validation Interceptor Pits	11	<1	20	13	11	<0.1	5	31	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP3_F_01	1	12/10/2010	ES1020448	Validation Interceptor Pits	10	<1	20	12	9	<0.1	4	22	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP3_F_02	2	12/10/2010	ES1020448	Validation Interceptor Pits	<5	<1	14	11	6	<0.1	26	131	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP3_F_03	1	12/10/2010	ES1020448	Validation Interceptor Pits	10	<1	22	13	16	<0.1	6	34	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP3_F_04	1	12/10/2010	ES1020448	Validation Interceptor Pits	14	<1	17	14	8	<0.1	3	24	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP3_F_05	1.3	12/10/2010	ES1020448	Validation Interceptor Pits	11	<1	18	55	11	<0.1	6	33	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP4_F_01	0.9	12/10/2010	ES1020448	Validation Interceptor Pits	10	<1	20	9	14	<0.1	4	20	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP4_F_02	1.5	12/10/2010	ES1020448	Validation Interceptor Pits	10	<1	22	9	11	<0.1	4	22	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP4_F_03	1.2	12/10/2010	ES1020448	Validation Interceptor Pits	12	<1	28	14	12	<0.1	7	62	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP4_F_04	1.25	12/10/2010	ES1020448	Validation Interceptor Pits	44	<1	49	13	58	<0.1	5	61	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
IP4_F_05	1	12/10/2010	ES1020448	Validation Interceptor Pits	14	<1	26	32	18	<0.1	5	40	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.01
VAL_F_01	1.7	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_02	1.7	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_03	1.8	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	160	<100	235	<0.2	<0.5	<0.5	<1.5	
VAL_F_04	1.6	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_05	1.7	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	150	1750	110	2010	<0.2	<0.5	<0.5	<1.5	
VAL_F_06	1.85	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_07	1.6	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_08	1.6	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_09	1.6	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_10	1.6	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_11	1.65	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_12	1.6	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	200	<100	275	<0.2	<0.5	<0.5	<1.5	
VAL_F_13	1.6	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_14	1.65	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_15	1.6	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_16	1.6	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_17	1.5	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_18	1.5	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_19	1.7	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_20	1.65	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	380	<100	455	<0.2	<0.5	<0.5	<1.5	
VAL_F_21	1.85	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_22	1.55	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_23	1.55	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_24	1.8	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	130	<100	205	<0.2	<0.5	<0.5	<1.5	
VAL_F_25	1.8	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	470	<100	545	<0.2	<0.5	<0.5	<1.5	
VAL_F_26	1.6	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_27	1.6	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
VAL_F_28	1.6	5/07/2010	49142	Validation UST	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1.5	
F74_V01	0.1	22/07/2010	49398	Validation Building	6	<0.1	9	14	14	0.12	5	25	-	-	-	-	-	-	-	-	-	-
F74_V02	0.1	22/07/2010	49398	Validation Building	6	<0.1	11	12	30	0.18	5	42	-	-	-	-	-	-	-	-	-	-
F74_V03	0.1	22/07/2010	49398	Validation Building	8	<0.1	12	17	18	0.11	5	44	-	-	-	-	-	-	-	-	-	-
F74_V04	0.1	22/07/2010	49398	Validation Building	8	<0.1	12	19	17	0.11	9	104	-	-	-	-	-	-	-	-	-	-
LNPNR2_W016_V13	0.1	22/11/2010	ES1023737	Validation Buried Waste	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LNPNR2_W016_V14	0.1	22/11/2010	ES1023737	Validation Buried Waste	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LNPNR2_W016_V15	0.1	22/11/2010	ES1023737	Validation Buried Waste	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LNPNR2_W016_V19	0.1	22/11/2010	ES1023737	Validation Buried Waste	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Sample ID	a-BHC	Aldrin	b + g-BHC	cis-Chlordane	trans-Chlordane	DDD	DDE	DDT	DDT+DDE+DDD	Aldrin + Dieldrin	Dieldrin	Endosulfan 1	Endosulfan 2	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	HCB	Heptachlor	Heptachlor Epoxide	Methoxychlor	Asbestos Containing Material (ACM) (%w/w)	Fibrous Asbestos and Asbestos Fines (FA+AF) %W/W	Asbestos Containing Material (ACM) Mass	Asbestos Fines (mass)	Fibrous Asbestos (mass)	Fibrous Asbestos and Asbestos Fines (FA+AF) Mass	Sample weight (dry - for ACM)	Asbestos Detected	Asbestos Type	Total Asbestos
	Organochlorine Pesticides																					Asbestos									
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%w/w	%w/w	g	g	g	g	g	-	-	g
EQL	0.50	0.05	0.10	0.05	0.05	0.05	0.05	0.20			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.20	0.001	0.001								
NEPC 2013 EIL, Site Specific																															
NEPM 2013 Table 1A(1) HILs Rec C Soil									400	10					20				10		400										
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay																															
0-1m																															
1-2m																															
2-4m																															
>4m																															
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																															
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																															
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																						0.02	0.001								
PFAS NEMP 2020 Table 2 Health Public open space																															
PFAS NEMP 2020 Table 3 Interim EDE All land uses																															
IP1_F_01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.003	<0.003	<0.01	<0.01	<0.01	<0.01	300	No	-	<0.01
IP1_F_02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.003	<0.003	<0.01	<0.01	<0.01	<0.01	371	No	-	<0.01
IP1_F_03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.004	<0.004	<0.01	<0.01	<0.01	<0.01	267	No	-	<0.01
IP1_F_04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.01	<0.01	<0.01	<0.01	217	No	-	<0.01
IP1_F_05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.004	<0.004	<0.01	<0.01	<0.01	<0.01	229	No	-	<0.01
IP2_F_01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.003	<0.003	<0.01	<0.01	<0.01	<0.01	311	No	-	<0.01
IP2_F_02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.004	<0.004	<0.01	<0.01	<0.01	<0.01	252	No	-	<0.01
IP2_F_03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.003	<0.003	<0.01	<0.01	<0.01	<0.01	326	No	-	<0.01
IP2_F_04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.003	<0.003	<0.01	<0.01	<0.01	<0.01	313	No	-	<0.01
IP2_F_05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.004	<0.004	<0.01	<0.01	<0.01	<0.01	277	No	-	<0.01
IP3_F_01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.004	<0.004	<0.01	<0.01	<0.01	<0.01	246	No	-	<0.01
IP3_F_02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.003	<0.003	<0.01	<0.01	<0.01	<0.01	294	No	-	<0.01
IP3_F_03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.004	<0.004	<0.01	<0.01	<0.01	<0.01	270	No	-	<0.01
IP3_F_04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.01	<0.01	<0.01	<0.01	212	No	-	<0.01
IP3_F_05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.004	<0.004	<0.01	<0.01	<0.01	<0.01	254	No	-	<0.01
IP4_F_01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.004	<0.004	<0.01	<0.01	<0.01	<0.01	228	No	-	<0.01
IP4_F_02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.01	<0.01	<0.01	<0.01	208	No	-	<0.01
IP4_F_03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.007	<0.007	<0.01	<0.01	<0.01	<0.01	145	No	-	<0.01
IP4_F_04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.004	<0.004	<0.01	<0.01	<0.01	<0.01	226	No	-	<0.01
IP4_F_05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VAL_F_28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F74_V01	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F74_V02	<0.05	<0.05	<0.05	-	-	-	0.06	<0.2	0.19	0.15	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F74_V03	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	No	-	<0.01
F74_V04	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.2	<0.3	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.014	0.001	<0.01	0.00078	<0.01	0.00578	72.3	**Yes**	**Ch**	<0.01
LNPNR2_W016_V13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.003	<0.003	<0.01	<0.01	<0.01	<0.01	349	No	-	<0.07
LNPNR2_W016_V14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	<0.002	<0.01	<0.01	<0.01	<0.01	412	No	-	<0.06
LNPNR2_W016_V15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.004	<0.004	<0.01	<0.01	<0.01	<0.01	251	No	-	<0.05
LNPNR2_W016_V19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.003	<0.003	<0.01	<0.01	<0.01	<0.01	309	No	-	<0.01

Table C: Historical Soil Analytical Results JBS&G (2021) Soil Analytical Data
Project Number: 63325
Project Name: Ed Park Precinct 3

			PFAS																																			
			Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutanesulfonic acid (PFBS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecanesulfonic acid (PFDS)	1H-1H-2H-2H-perfluorohexanesulfonic acid (4:2 FTSA)	1H-1H-2H-2H-perfluorooctanesulfonic acid (6:2 FTSA)	1H-1H-2H-2H-perfluorodecanesulfonic acid (8:2 FTSA)	1H-1H-2H-2H-perfluorododecanesulfonic acid (10:2 FTSA)	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFAS (WA DER List)	Sum of PFAS
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.01	0.05
NEPC 2013 EIL, Site Specific																																						
NEPM 2013 Table 1A(1) HILs Rec C Soil																																						
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay																																						
0-1m																																						
1-2m																																						
2-4m																																						
>4m																																						
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																																						
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																																						
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																																						
PFAS NEMP 2020 Table 2 Health Public open space							10																		1		1							1					
PFAS NEMP 2020 Table 3 Interim EDE All land uses							10																				1												
Sample	**Lab Report Number**	**Date**																																				
TP05_0-0.1	802029	9/06/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP07_0-0.05	802029	9/06/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09_0-0.1	802029	9/06/2021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
TP10_0.1-0.2	802029	9/06/2021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
TP10_0.2-0.3	802029	9/06/2021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
TP44_0-0.1	802351	10/06/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table C: Historical Soil Analytical Results JBS&G (2021) Soil Analytical Data
Project Number: 63325
Project Name: Ed Park Precinct 3

			Ionic Balance			Asbestos - Eurofins																		Asbestos - Envirolab			
			CEC	Conductivity (1:5 aqueous extract)	pH (aqueous extract)	Approximate Sample Mass	Asbestos Sample Dimensions	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in Soil	Mass FA	Mass Asbestos in FA	Mass AF	Mass asbestos in AF	Asbestos from FA & AF in Soil	Mass Asbestos in FA & AF	ACM - Comment	FA Comment	AF - Comment	Organic Fibres - Comment	Respirable Fibres - Comment	Synthetic Fibres - Comment	Asbestos Reported Result	Asbestos ID in Soil	Total Asbestos	Asbestos (ACM >7mm) Estimation	Asbestos in soil (<2mm AF/FA) (%w/w)
			MEQ/100G	US/CM	pH Units	gm	Comment	gm	gm	% (w/w)	gm	gm	gm	gm	% (w/w)	gm	Comment	Comment	Comment	Comment	Comment	Comment	Comment	g/kg	g/kg	% (w/w)	% (w/w)
EQL			0.05	10	0.1																			0.1	0.01	0.001
NEPC 2013 EIL, Site Specific																											
NEPM 2013 Table 1A(1) HILs Rec C Soil																											
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay																											
0-1m																											
1-2m																											
2-4m																											
>4m																											
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																											
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																											
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil										0.02					0.001											0.02	0.001
PFAS NEMP 2020 Table 2 Health Public open space																											
PFAS NEMP 2020 Table 3 Interim EDE All land uses																											
Sample	**Lab Report Number**	**Date**																									
TP05_0-0.1	802029	9/06/2021	-	-	-	691	-	0	0	0	0	0	0	0	0	0	Nil	Nil	Nil	Nil	Nil	Nil	No asbestos detected at the reporting limit of 0.001% w/w.	-	-	-	-
TP07_0-0.05	802029	9/06/2021	-	-	-	428	-	0	0	0	0	0	0	0	0	0	Nil	Nil	Nil	Nil	Nil	Nil	No asbestos detected at the reporting limit of 0.001% w/w.	-	-	-	-
TP09_0-0.1	802029	9/06/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10_0.1-0.2	802029	9/06/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10_0.2-0.3	802029	9/06/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP44_0-0.1	802351	10/06/2021	-	-	-	618	-	0	0	0	0	0	0	0	0	0	Nil	Nil	Nil	Organic fibres detected	No respirable fibres detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w.	-	-	-	-

Table D: Soil Analytical Results
Project Number: 63325
Project Name: Edmondson Park Environmental and Geotechnical

	Metals & Metalloids								TPHs (NEPC 1999)					TRHs (NEPC 2013)							BTEXN						
	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum of Total)	C6-C10	C10-C16	C16-C34	C34-C40	C10-C40 (Sum of total)	F1 (C6-C10 minus BTEX)	F2 (C10-C16 less Naphthalene)	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene_VOC
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	2	0.4	5	5	5	0.1	5	5	20	20	50	50	50	20	50	100	100	100	20	50	0.1	0.1	0.1	0.1	0.2	0.3	0.5
NEPC 2013 EIL, Site Specific	100		520	220	1100		240	570																			170
NEPM 2013 Table 1A(1) HILs Rec C Soil	300	90	300	17000	600	80	1200	30000																			
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay																											
0-1m																			NL	NL	NL	NL	NL			NL	NL
1-2m																			NL	NL	NL	NL	NL			NL	NL
2-4m																			NL	NL	NL	NL	NL			NL	NL
>4m																			NL	NL	NL	NL	NL			NL	NL
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																1300	5600		180	120	65	105	125			45	
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil														800	1000	3500	10000										
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																											
PFAS NEMP 2020 Table 2 Health Public open space																											
PFAS NEMP 2020 Table 3 Interim EDE All land uses																											

Field_ID	Sampled_Date_Time	Lab_Report_Number																									
DG01_0_0.1	17/10/2022	933769	7.7	<0.4	27	16	31	<0.1	12	36	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
DG02_0_0.1	17/10/2022	933769	6.7	<0.4	24	11	21	<0.1	7.5	25	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
DG03_0_0.1	17/10/2022	933769	7.2	<0.4	24	8.1	16	<0.1	<5	26	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
DG04_0.2_0.3	17/10/2022	933769	13	<0.4	20	31	12	<0.1	8	33	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
DG04_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_0_0.1	17/10/2022	933769	8	<0.4	15	11	1600	<0.1	<5	81	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
DG05-0-0.1	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG06-0.2-0.3	18/10/2022	938601	13	<0.4	25	21	12	<0.1	8.4	34	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
DG06-0-0.1	18/10/2022	938601	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG07_0_0.1	17/10/2022	933769	6.6	1.7	21	49	120	<0.1	8.4	130	<20	<20	61	100	161	<20	<50	130	<100	130	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
DG07-0.2-0.3	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT01_0.2_0.3	17/10/2022	933769	10	<0.4	29	51	50	<0.1	21	110	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
FT01-0-0.1	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT02_0.2_0.3	17/10/2022	933769	13	<0.4	33	9.9	16	<0.1	11	23	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
FT02-0.2-0.3	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT03_0_0.1	17/10/2022	933769	9.6	<0.4	16	14	130	<0.1	5.8	120	<20	21	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
HD01_0.4_0.5	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HD02_0.8_0.9	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF01_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
PF01_0_0.1	17/10/2022	933769	6.7	<0.4	22	<5	17	<0.1	<5	13	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
PF02_0_0.1	17/10/2022	933769	11	<0.4	29	<5	20	<0.1	<5	13	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
PF03_0_0.1	17/10/2022	933769	10	<0.4	31	<5	18	<0.1	<5	12	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
PF04_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
PF04_0_0.1	17/10/2022	933769	7.7	<0.4	22	11	19	<0.1	7	31	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
PF05_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
PF05_0_0.1	17/10/2022	933769	7.1	<0.4	17	11	28	<0.1	6.7	63	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
PF06_0_0.1	17/10/2022	933769	14	<0.4	19	15	19	<0.1	10	21	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
PF07_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
PF07_0_0.1	17/10/2022	933769	3.7	<0.4	13	48	5.2	<0.1	56	43	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
PF08_0_0.1	17/10/2022	933769	6.3	<0.4	17	42	6.6	<0.1	34	34	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
PF09_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
PF09_0_0.1	17/10/2022	933769	14	<0.4	20	18	28	<0.1	13	35	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
QA20221017-01	17/10/2022	308571	4	<0.4	10	15	28	<0.1	6	24	<25	<50	<100	<100	<50	<25	<50	<100	<100	<50	<25	<50	<0.2	<0.5	<1	<1	<2	<1	<1
QA20221017-02	17/10/2022	308571	7	<0.4	24	8	20	<0.1	7	19	<25	<50	<100	<100	<50	<25	<50	<100	<100	<50	<25	<50	<0.2	<0.5	<1	<1	<2	<1	<1
QC20221017_01	17/10/2022	933769	2.5	<0.4	<5	<5	6.8	<0.1	<5	26	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
QC20221017_02	17/10/2022	933769	6.1	<0.4	20	12	24	<0.1	8.6	27	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
QC202211017-01	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC202211017-02	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP01_0.2_0.3	17/10/2022	933769	9.8	<0.4	8.7	54	15	<0.1	17	81	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
SP02_0.2_0.3	17/10/2022	933769	4.7	<0.4	14	15	16	<0.1	12	42	<20	46	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
SP03_0.2_0.3	17/10/2022	933769	7.9	<0.4	18	24	27	<0.1	8.4	64	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
SP04_0.2_0.3	17/10/2022	933769	10	<0.4	10	39	22	<0.1	8.5	63	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
UST01_0.2_0.3	17/10/2022	933769	18	<0.4	17	23	15	<0.1	12	38	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
UST01_0.4_0.5	17/10/2022	933769	-	-	-	-	-	-	-	-	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5

Table D: Soil Analytical Results
Project Number: 63325
Project Name: Edmondson Park Environmental and Geotechnical

Field_ID	Sampled_Date_Time	Lab_Report_Number	PAH																				
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(b+j)fluoranthene	Benzo(b+j+k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPC 2013 EIL, Site Specific																							
NEPM 2013 Table 1A(1) HILs Rec C Soil								3	3	3													300
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay																							
0-1m																				NL			
1-2m																				NL			
2-4m																				NL			
>4m																				NL			
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil							0.7																
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																							
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																							
PFAS NEMP 2020 Table 2 Health Public open space																							
PFAS NEMP 2020 Table 3 Interim EDE All land uses																							
DG01_0_0.1	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DG02_0_0.1	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DG03_0_0.1	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DG04_0.2_0.3	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DG04_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_0_0.1	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DG05-0-0.1	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG06-0.2-0.3	18/10/2022	938601	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DG06-0-0.1	18/10/2022	938601	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG07_0_0.1	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DG07-0.2-0.3	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT01_0.2_0.3	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
FT01-0-0.1	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT02_0.2_0.3	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
FT02-0.2-0.3	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT03_0_0.1	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
HD01_0.4_0.5	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HD02_0.8_0.9	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF01_0.2_0.3	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PF01_0_0.1	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PF02_0_0.1	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PF03_0_0.1	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PF04_0.2_0.3	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PF04_0_0.1	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PF05_0.2_0.3	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PF05_0_0.1	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PF06_0_0.1	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PF07_0.2_0.3	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PF07_0_0.1	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PF08_0_0.1	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PF09_0.2_0.3	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PF09_0_0.1	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QA20221017-01	17/10/2022	308571	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.2	0.1	0.5
QA20221017-02	17/10/2022	308571	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
QC20221017_01	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC20221017_02	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC202211017-01	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC202211017-02	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP01_0.2_0.3	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SP02_0.2_0.3	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SP03_0.2_0.3	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SP04_0.2_0.3	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
UST01_0.2_0.3	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
UST01_0.4_0.5	17/10/2022	933769	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Field_ID	Organochlorine Pesticides																							
	4,4-DDE	a-BHC	b-BHC	d-BHC	g-BHC (Lindane)	Aldrin	Dieldrin	Aldrin + Dieldrin	Chlordane	Chlordane (cis)	Chlordane (trans)	DDT	DDD	DDT+DDE+DDD	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Methoxychlor	Toxaphene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5
NEPC 2013 EIL, Site Specific																								
NEPM 2013 Table 1A(1) HILs Rec C Soil								10	70					400				20			10		400	30
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay																								
0-1m																								
1-2m																								
2-4m																								
>4m																								
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																								
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																								
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																								
PFAS NEMP 2020 Table 2 Health Public open space																								
PFAS NEMP 2020 Table 3 Interim EDE All land uses																								
DG01_0_0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
DG02_0_0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
DG03_0_0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
DG04_0.2_0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
DG04_0_0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_0_0.1	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
DG05-0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG06-0.2-0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
DG06-0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG07_0_0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
DG07-0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT01_0.2_0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	0.06	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
FT01-0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT02_0.2_0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
FT02-0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT03_0_0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
HD01_0.4_0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HD02_0.8_0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF01_0.2_0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF01_0_0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF02_0_0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF03_0_0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF04_0.2_0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF04_0_0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF05_0.2_0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF05_0_0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF06_0_0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF07_0.2_0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF07_0_0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF08_0_0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF09_0.2_0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF09_0_0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QA20221017-01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-
QA20221017-02	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-
QC20221017_01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
QC20221017_02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
QC202211017-01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC202211017-02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP01_0.2_0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
SP02_0.2_0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
SP03_0.2_0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
SP04_0.2_0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
UST01_0.2_0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UST01_0.4_0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D: Soil Analytical Results
Project Number: 63325
Project Name: Edmondson Park Environmental and Geotechnical

	Polychlorinated Biphenyls								PFAS																																			
	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutanesulfonic acid (PFBS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecanesulfonic acid (PFDS)	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTSA)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTSA)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTSA)	1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2 FTSA)	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFDS + PFOA)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of WA DWER PFAS (n=10)*	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/KG	mg/kg
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.05
NEPC 2013 EIL, Site Specific																																											
NEPM 2013 Table 1A(1) HILs Rec C Soil								1																																			
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay																																											
0-1m																																											
1-2m																																											
2-4m																																											
>4m																																											
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																																											
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																																											
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																																											
PFAS NEMP 2020 Table 2 Health Public open space													10																	1		1								1				
PFAS NEMP 2020 Table 3 Interim EDE All land uses													10																			1												
Field_ID	**Sampled_Date_Time**	**Lab_Report_Number**																																										
DG01_0_0.1	17/10/2022	933769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
DG02_0_0.1	17/10/2022	933769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
DG03_0_0.1	17/10/2022	933769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
DG04_0.2_0.3	17/10/2022	933769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG04_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
DG05_0_0.1	17/10/2022	933769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
DG05-0-0.1	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG06-0.2-0.3	18/10/2022	938601	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG06-0-0.1	18/10/2022	938601	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
DG07_0_0.1	17/10/2022	933769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
DG07-0.2-0.3	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT01_0.2_0.3	17/10/2022	933769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT01-0-0.1	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT02_0.2_0.3	17/10/2022	933769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT02-0.2-0.3	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT03_0_0.1	17/10/2022	933769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HD01_0.4_0.5	17/10/2022	933769	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
HD02_0.8_0.9	17/10/2022	933769	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
PF01_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF01_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF02_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF03_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF04_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF04_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF05_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF05_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF06_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF07_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF07_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF08_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF09_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PF09_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QA20221017-01	17/10/2022	308571	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.0002	<0.0002	<0.0001	<0.0001	0.0002	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.005	<0.0002	<0.0002	-	<0.0001	<0.0001	<0.0001	0.0006	-	<0.0002	<0.0001	<0.0001	<0.0002	<0.0002	0.0006	-	0.0009	-	0.0009
QA20221017-02	17/10/2022	308571	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.005	<0.0002	<0.0002	-	<0.0001	<0.0001	<0.0001	0.0001	-	<0.0002	<0.0001	<0.0001	<0.0002	<0.0002	0.0001	-	0.0001	-	0.0001
QC20221017_01	17/10/2022	933769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
QC20221017_02	17/10/2022	933769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
QC202211017-01	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC202211017-02	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP01_0.2_0.3	17/10/2022	933769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
SP02_0.2_0.3	17/10/2022	933769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
SP03_0.2_0.3	17/10/2022	933769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
SP04_0.2_0.3	17/10/2022	933769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05
UST01_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UST01_0.4_0.5	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D: Soil Analytical Results
Project Number: 63325
Project Name: Edmondson Park Environmental and Geotechnical

		Chlorinated Benzenes	Ionic Balance			PA VIC - IWRG62		Particle Size	Asbestos - Eurofins								Asbestos - Envirolab				Moisture Content	Other	
		Hexachlorobenzene	CEC	Conductivity (1:5 aqueous extract)	pH (aqueous extract)	Organochlorine Pesticides EPAVic	Other Organochlorine Pesticides EPAVic	% Clay*	Approximate Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Organic Fibres - Comment	Respirable Fibres - Comment	Synthetic Fibres - Comment	Asbestos Reported Result	Asbestos ID in Soil	Total Asbestos	Asbestos (ACM >7mm) Estimation	Asbestos in soil (<2mm AF/FA) [%w/w]	Moisture Content	Moisture Content (dried @ 103°C)	TOC
		mg/kg	MEQ/100G	US/CM	pH Units	mg/kg	mg/kg	%	g	% (w/w)	% (w/w)	Comment	Comment	Comment	Comment	g/kg	g/kg	% (w/w)	% (w/w)	%	%	%
EQL		0.05	0.05	10	0.1	0.1	0.1	1									0.1	0.01	0	0.1	1	0.1
NEPC 2013 EIL, Site Specific																						
NEPM 2013 Table 1A(1) HILs Rec C Soil		10																				
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay																						
0-1m																						
1-2m																						
2-4m																						
>4m																						
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																						
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																						
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil										0.02	0.001							0.02	0.001			
PFAS NEMP 2020 Table 2 Health Public open space																						
PFAS NEMP 2020 Table 3 Interim EDE All land uses																						
Field_ID	**Sampled_Date_Time**	**Lab_Report_Number**																				
DG01_0_0.1	17/10/2022	933769	<0.05	11	<10	8.1	<0.1	<0.1	5.1	584	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	15	5.3
DG02_0_0.1	17/10/2022	933769	<0.05	-	-	-	<0.1	<0.1	-	519	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	15	-
DG03_0_0.1	17/10/2022	933769	<0.05	-	-	-	<0.1	<0.1	-	582	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	12	-
DG04_0.2_0.3	17/10/2022	933769	<0.05	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-
DG04_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	694	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	9.9	-
DG05_0_0.1	17/10/2022	933769	<0.05	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-
DG05-0-0.1	17/10/2022	938609	-	-	-	-	-	-	-	513	0	0	Nil	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	-	-
DG06-0.2-0.3	18/10/2022	938601	<0.05	-	-	-	<0.1	<0.1	-	280	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	24	-
DG06-0-0.1	18/10/2022	938601	-	-	-	-	-	-	-	587	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	20	-
DG07_0_0.1	17/10/2022	933769	<0.05	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-
DG07-0.2-0.3	17/10/2022	938609	-	-	-	-	-	-	-	354	0	0	Nil	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	-	-
FT01_0.2_0.3	17/10/2022	933769	<0.05	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-
FT01-0-0.1	17/10/2022	938609	-	-	-	-	-	-	-	472	0	0	Nil	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	-	-
FT02_0.2_0.3	17/10/2022	933769	<0.05	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	9.7	-
FT02-0.2-0.3	17/10/2022	938609	-	-	-	-	-	-	-	676	0	0	Organic fibres detected	0	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	-	-
FT03_0_0.1	17/10/2022	933769	<0.05	-	-	-	<0.1	<0.1	-	457	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	18	-
HD01_0.4_0.5	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-
HD02_0.8_0.9	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-
PF01_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-
PF01_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	511	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	14	-
PF02_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	395	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	11	-
PF03_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	542	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	16	-
PF04_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-
PF04_0_0.1	17/10/2022	933769	-	37	35	8.3	-	-	11	606	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	19	2.7
PF05_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
PF05_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	693	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	9.8	-
PF06_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	773	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	11	-
PF07_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-
PF07_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	648	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	6.5	-
PF08_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	801	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	5.2	-
PF09_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
PF09_0_0.1	17/10/2022	933769	-	-	-	-	-	-	-	648	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	8.9	-
QA20221017-01	17/10/2022	308571	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	0	<0.1	<0.01	<0.001 - 0#%	15	-	-
QA20221017-02	17/10/2022	308571	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	0	<0.1	<0.01	<0.001 - 0#%	16	-	-
QC20221017_01	17/10/2022	933769	<0.05	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	7.5	-
QC20221017_02	17/10/2022	933769	<0.05	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-
QC202211017-01	17/10/2022	938609	-	-	-	-	-	-	-	529	0	0	Nil	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	-	-
QC202211017-02	17/10/2022	938609	-	-	-	-	-	-	-	507	0	0	Nil	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	-	-
SP01_0.2_0.3	17/10/2022	933769	<0.05	-	-	-	<0.1	<0.1	-	561	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	14	-
SP02_0.2_0.3	17/10/2022	933769	<0.05	-	-	-	<0.1	<0.1	-	576	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	11	-
SP03_0.2_0.3	17/10/2022	933769	<0.05	-	-	-	<0.1	<0.1	-	618	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	15	-
SP04_0.2_0.3	17/10/2022	933769	<0.05	-	-	-	<0.1	<0.1	-	710	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	12	-
UST01_0.2_0.3	17/10/2022	933769	-	-	-	-	-	-	-	417	0	0	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-	-	-	-	-	22	-
UST01_0.4_0.5	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-

Table E: Addendum Soil Investigation Results
Project Number: 63325
Project Name: Edmondson Park Environmental and Geotechnical

Metals & Metalloids; TPHs (NEPC 1999)

Field_ID	Material Type	Sampled_Date_Time	Lab_Report_Number	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum of Total)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				2	0.4	5	5	5	0.1	5	5	20	20	50	50	50
NEPC 2013 EIL, Site Specific				100		520	220	1100		240	570					
NEPM 2013 Table 1A(1) HILs Rec C Soil				300	90	300	17000	600	80	1200	30000					
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																
PFAS NEMP 2020 Table 2 Health Public open space																
PFAS NEMP 2020 Table 3 Interim EDE All land uses																
NSW 2014 General Solid Waste CT1 (No Leaching)				100	20	100		100	4	40		650				10000
DG05_0_0.1	Fill	17/10/2022	933769	8	<0.4	15	11	1600	<0.1	<5	81	<20	<20	<50	<50	<50
DG05-0-0.1	Fill	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_0.2_0.3	Natural	17/10/2022	945947	-	-	-	-	16	-	-	-	-	-	-	-	-
DG05_E_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	18	-	-	-	-	-	-	-	-
DG05_E_5.0_0-0.1	Fill	21/12/2022	952797	11	<0.4	21	14	27	0.2	<5	29	<20	<20	<50	<50	<50
DG05_N_5.0_0.1-0.2	Fill	21/12/2022	952797	-	-	-	-	13	-	-	-	-	-	-	-	-
DG05_N_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	11	-	-	-	-	-	-	-	-
DG05_S_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	14	-	-	-	-	-	-	-	-
DG05_S_5.0_0-0.1	Fill	21/12/2022	952797	-	-	-	-	23	-	-	-	-	-	-	-	-
DG05_W_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	15	-	-	-	-	-	-	-	-
DG05_W_5.0_0-0.1	Fill	21/12/2022	952797	3.2	<0.4	10	82	16	<0.1	28	72	<20	<20	<50	<50	<50

TRHs (NEPC 2013); BTEXN

Field_ID	C6-C10	C10-C16	C16-C34	C34-C40	C10-C40 (Sum of total)	F1 (C6-C10 minus BTEX)	F2 (C10-C16 less Naphthalene)	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene_VOC
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	20	50	100	100	100	20	50	0.1	0.1	0.1	0.1	0.2	0.3	0.5
NEPC 2013 EIL, Site Specific														170
NEPM 2013 Table 1A(1) HILs Rec C Soil														
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil			1300	5600		180	120	65	105	125			45	
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil	800	1000	3500	10000										
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil														
PFAS NEMP 2020 Table 2 Health Public open space														
PFAS NEMP 2020 Table 3 Interim EDE All land uses														
NSW 2014 General Solid Waste CT1 (No Leaching)								10	288	600			1000	
DG05_0_0.1	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
DG05-0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_0.2_0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_E_5.0_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_E_5.0_0-0.1	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
DG05_N_5.0_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_N_5.0_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_S_5.0_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_S_5.0_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_W_5.0_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_W_5.0_0-0.1	<20	<50	<100	<100	<100	<20	<50	0.2	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5

PAH

Field_ID	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPC 2013 EIL, Site Specific																				
NEPM 2013 Table 1A(1) HILs Rec C Soil						3	3	3												300
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil					0.7															
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																				
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																				
PFAS NEMP 2020 Table 2 Health Public open space																				
PFAS NEMP 2020 Table 3 Interim EDE All land uses																				
NSW 2014 General Solid Waste CT1 (No Leaching)					0.8															
DG05_0_0.1	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DG05-0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_0.2_0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_E_5.0_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_E_5.0_0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DG05_N_5.0_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_N_5.0_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_S_5.0_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_S_5.0_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_W_5.0_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_W_5.0_0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Table E: Addendum Soil Investigation Results
Project Number: 63325
Project Name: Edmondson Park Environmental and Geotechnical

				Organochlorine Pesticides																					Polychlorinated Biphenyls							
				4,4-DDE	a-BHC	b-BHC	d-BHC	g-BHC (Lindane)	Aldrin	Dieldrin	Aldrin + Dieldrin	Chlordane	DDT	DDD	DDT+DDE+DDD	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Methoxychlor	Toxaphene	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	KCBs (Sum of total)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPC 2013 EIL, Site Specific																																	
NEPM 2013 Table 1A(1) HILs Rec C Soil											10	70			400				20			10		400	30								1
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																																	
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																																	
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																																	
PFAS NEMP 2020 Table 2 Health Public open space																																	
PFAS NEMP 2020 Table 3 Interim EDE All land uses																																	
NSW 2014 General Solid Waste CT1 (No Leaching)																																	<50
Field_ID	**Material Type**	**Sampled_Date_Time**	**Lab_Report_Number**																														
DG05_0_0.1	Fill	17/10/2022	933769	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DG05-0-0.1	Fill	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_0.2_0.3	Natural	17/10/2022	945947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_E_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_E_5.0_0-0.1	Fill	21/12/2022	952797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DG05_N_5.0_0.1-0.2	Fill	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_N_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_S_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_S_5.0_0-0.1	Fill	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_W_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_W_5.0_0-0.1	Fill	21/12/2022	952797	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Table E: Addendum Soil Investigation Results
Project Number: 63325
Project Name: Edmondson Park Environmental and Geotechnical

				PFAS																																		Chlorinated Benzenes	PA VIC - IWRG62	
				Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutanesulfonic acid (PFBS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecanesulfonic acid (PFDS)	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTSA)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTSA)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTSA)	1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2 FTSA)	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of VA DWER PFAS (n=10)*	Sum of PFAS	Hexachlorobenzene	Organochlorine Pesticides EPAVic	Other Organochlorine Pesticides EPAVic
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/KG	mg/kg	mg/kg	mg/kg
EQL				0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.05	0.05	0.1	0.1
NEPC 2013 EIL, Site Specific																																								
NEPM 2013 Table 1A(1) HILs Rec C Soil																																						10		
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																																								
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																																								
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil																																								
PFAS NEMP 2020 Table 2 Health Public open space								10																		1			1							1					
PFAS NEMP 2020 Table 3 Interim EDE All land uses								10																					1											
NSW 2014 General Solid Waste CT1 (No Leaching)																																								
Field_ID	**Material Type**	**Sampled_Date_Time**	**Lab_Report_Number**																																					
DG05_0_0.1	Fill	17/10/2022	933769	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.05	<0.1	<0.1
DG05-0-0.1	Fill	17/10/2022	938609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_0.2_0.3	Natural	17/10/2022	945947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_E_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_E_5.0_0-0.1	Fill	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.1	<0.1
DG05_N_5.0_0.1-0.2	Fill	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_N_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_S_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_S_5.0_0-0.1	Fill	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_W_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG05_W_5.0_0-0.1	Fill	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.1	<0.1

Table E: Addendum Soil Investigation Results
Project Number: 63325
Project Name: Edmondson Park Environmental and Geotechnical

	Asbestos - Eurofins																			Other
	Approximate Sample Mass	Asbestos Sample Dimensions	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in Soil	Mass FA	Mass Asbestos in FA	Mass AF	Mass asbestos in AF	Asbestos from FA & AF in Soil	Mass Asbestos in FA & AF	ACM - Comment	+A+ Comment	AF - Comment	Organic Fibres - Comment	Respirable Fibres - Comment	Synthetic Fibres - Comment	Asbestos Reported Result	Moisture Content (dried @ 103°C)
	g	Comment	g	g	% (w/w)	g	g	g	g	% (w/w)	g	Comment	Comment	Comment	Comment	Comment	Comment	Comment	%
EQL																			1
NEPC 2013 EIL, Site Specific																			
NEPM 2013 Table 1A(1) HILs Rec C Soil																			
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																			
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																			
NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil					0.02					0.001									
PFAS NEMP 2020 Table 2 Health Public open space																			
PFAS NEMP 2020 Table 3 Interim EDE All land uses																			
NSW 2014 General Solid Waste CT1 (No Leaching)																			
Field_ID	**Material Type**	**Sampled_Date_Time**	**Lab_Report_Number**																	
DG05_0_0.1	Fill	17/10/2022	933769	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
DG05-0-0.1	Fill	17/10/2022	938609	513	-	0	0	0	0	0	0	0	0	Nil	Nil	Nil	Nil	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	-
DG05_0.2_0.3	Natural	17/10/2022	945947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
DG05_E_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
DG05_E_5.0_0-0.1	Fill	21/12/2022	952797	516	-	0	0	0	0	0	0	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	6.2
DG05_N_5.0_0.1-0.2	Fill	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.6
DG05_N_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
DG05_S_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19
DG05_S_5.0_0-0.1	Fill	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
DG05_W_5.0_0.2-0.3	Natural	21/12/2022	952797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
DG05_W_5.0_0-0.1	Fill	21/12/2022	952797	778	-	0	0	0	0	0	0	0	0	Nil	Nil	Nil	Organic fibres detected	No trace asbestos detected	Nil	No asbestos detected at the reporting limit of 0.001% w/w	3.9

Appendix C Material Tracking

The system comprises the following elements:

- Definition of Roles and Responsibilities;
- Material quality information;
- Material movement tracking;
- Material emplacement;
- Documentation required;
- Dealing with non-conformance; and
- Dealing with expected and unexpected finds

C.1 Roles and Responsibility

The Remedial Contractor will be responsible for the following:

- Implementation and overall management of onsite procedures and protocols defined in the RAP document.
- Responsible for ensuring all subcontractors and consultants employed in material classification generation, movement and placement are adequately briefed in the requirements of the RAP.
- Ultimate responsibility for the movement and placement of materials intended for reuse.
- Ensuring clear lines of communication are maintained between all relevant responsible parties.
- Liaison with suppliers in sourcing of materials from offsite, whether imported VENM or material under a NSW EPA exemption.
- Ensuring the RAP is applied effectively in conjunction with other relevant documents and in line with the overarching Health, Safety and Environmental Plan and the Asbestos Management Plan to be developed for the site works.

JBS&G will be responsible for the following:

- Liaising with the Remedial Contractor with regards to the importation of materials to ensure materials meet the project requirements and to prevent unsuitable materials being inadvertently brought onto the site, such that the site cannot be validated.
- Undertaking inspections when material importation works are being undertaken to confirm materials sampled are consistent with those being imported.
- Reviewing materials tracking documents submitted by the Remedial Contractor and investigating/resolving any discrepancies.
- Cross checking of inspection findings with materials tracking sheets.
- Provision of directives (decisions) relating to a proposed and/or placed fill materials suitability.

C.2 Material Tracking

The movement of classified materials within the site will be controlled by an appropriately managed Materials Tracking System (MTS), as discussed below.

To minimize double handling on the site, improve cost effectiveness and reduce environmental impacts, every effort should be made to facilitate the movement of excavated or imported material directly to the area of placement.

It is, however, recognized that this objective may not always be practical and hence the following range of potential material movements is anticipated:

- Generation to Stockpile;
- Generation to Placement;
- Stockpile to Placement;
- Import to Stockpile;
- Import to Placement;
- Stockpile to Stockpile; and
- Offsite disposal.

C.3 Materials Characterisation Form

All material movements within the site will be controlled using Materials Classification Forms (MCF) and Material Tracking Sheets (MTS).

Each MCF outlines procedures for confirming material quality, quantity and summarising existing analytical data. The MCF will be completed by the Principal Contractor and/or the Civil Works Contractor and will include the following:

- A unique MCF document name/number;
- A summary of VENM/ENM reports prepared by the environmental consultant;
- Materials description; and
- Material reuse suitability summary.

Each MCF will be completed and signed off by the Remedial Contractor based on material characterisation reports prepared by the environmental consultant. Once completed, the MCF will be incorporation into the Principal Contractors materials tracking system prior to placement within the site.

An example of the MCF is presented in following this plan.

C.4 Materials Tracking Sheet

The MTS is a two-part document which requires information to be collected at the material source location and at one of the three potential destination sites. An example of the MTS is presented in following this plan.

All MTSs will be uniquely referenced and stored as a record of material movements.

This first part (Part A) of the document will record the following data:

i. Time and Date
ii. Truck registration or plant identification;
iii. Load quality; and

iv. MCF reference name/number. The MCF will provide details on items such as a source location reference, visual/olfactory observations, materials classification/reuse zone suitability summary.

The document will also be used for materials required for onsite placement or temporary stored prior to placement and will be completed at the point of unloading. The sheet will record the following details:

- Items i, ii, iii, as above;
- Visual and olfactory observations; and
- Zone of emplacement.

The final portion of the sheet (Part B) will be completed for materials which cannot be used within the site and are scheduled for off-site disposal in accordance with EPA (2014).

Items i, ii, iii and iv above will be recorded initially. The name of the haulage company responsible for transferring the material to the tip site and the details of the receiving site must also be recorded. Prior to leaving the site, the material should have undergone a waste classification in accordance with EPA (2014) and confirmation of this should be acknowledged on the sheet.

Finally, a note should be made of the consignment note number or receipt identification obtained.

The MTS will be reviewed and signed off as completed by the Remedial Contractor.

C.5 Material Placement

The vertical and lateral extents of material will be accurately surveyed. This will allow the interrogation of the data set to ensure reuse material loads have been correctly deposited and a record kept of cumulative loads deposited in any particular zone.

Material Classification Form (example)

MCF Reference # 1000_____

Completed by	John Smith
Date	24 July 2015
Material Identification (Stockpile name and grid reference, importation source name and unique identification name etc.)	Type A Soils - Organic Garden Mix from Benedict Industries
Source location (Stockpile name and grid reference, source location and grid reference, off-site source address and description of source site residential, quarry etc.)	On site □ Details: Off site (Source Site) ☒ Details: Stockpile located at Menangle Quarry Benedict Industries, Menangle Road, Menangle, NSW.
Environmental consultant material classification report reference	JBS&G 1000 Date: 24 July 2015
Summary of material characterisation report as prepared by JBS&G	VENM □ for importation ENM □ Reuse on Site □ Waste Classification □ Other ☒ please describe VENM silty sand blended with recovered fines topsoil, ash, fowl manure and composted organics to be imported to site
Volume of material	Survey Information □ Field Estimate □ Required Quantity (off-site source) ☒ Approximately 65 m^3
Material description (material type, colour, inclusions, etc.)	Type A Organic Garden Mix – brown VENM alluvial silty sand and topsoil blended with recovered fines topsoil, ash, fowl manure and compost organics
Is the material free of ACM, staining and malodourous soils	Yes ☒ No □ Details:
If assessment is of material from an off-site Source, is the material suitable for importation to the site?	Yes, the material is suitable to be imported to site.
If assessment is for off-site disposal of material, what is the final waste classification / reuse exemption conclusion?	N/A
If the assessment is for reuse of the material at the site, is the material suitable for reuse	Suitable for reuse: - below the capping profile in road corridor □ - above the capping profile in road corridor footprint and used in landscaped areas ☒ - below the capping profile in recreational areas □ - above the capping profile in recreational areas and used in landscaped areas ☒ - below the marker layer in Lots 8 and 9 □ - above the marker layer in Lots 8 and 9 and used within landscaped areas ☒ - below the marker layer in Lot 12 □ - above the marker layer in Lot 12 and used within landscaped areas ☒
Other comments:	Please ensure Benedict dockets are retained, the volume imported documented and all materials tracked in accordance with the materials tracking plan.

Material Tracking Sheet Part A (example)

MTS Reference #_____

Materials Tracking Form Part A (Materials Received, Excavated, Stored or Placed)										
Completed by:										
Date:										
Comment (Are there any visual or olfactory indicators of contamination):										
Load No.	**Time**	**Truck Rego / Plant ID**	**Load Quantity (m^3)**	**MCF Reference No**	**Source Location and ID**	**Temporary Stockpiled Y/N and New ID**	**Final Placement Location Y/N**	**Placement location**	**Reduced level of placement m AHD (final placement only)**	**GPS Coordinates (final placement only)**

Material Tracking Sheet Part B (example)

MTS Reference #_____

Part B Off-site Disposal							
Completed by:							
Date:							
Receiving Site:							
Hauling subcontractor:							
Load No.	Time	Truck Rego / Plant ID	Load Quantity (m^3)	Material Classified as waste Y/N	Waste Description and Environmental Consultant Reference No. including any visual or olfactory indicators of contamination	Source location	Receipt/Consignment No.

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