68-80 Banks Avenue, Pagewood NSW

Homes NSW

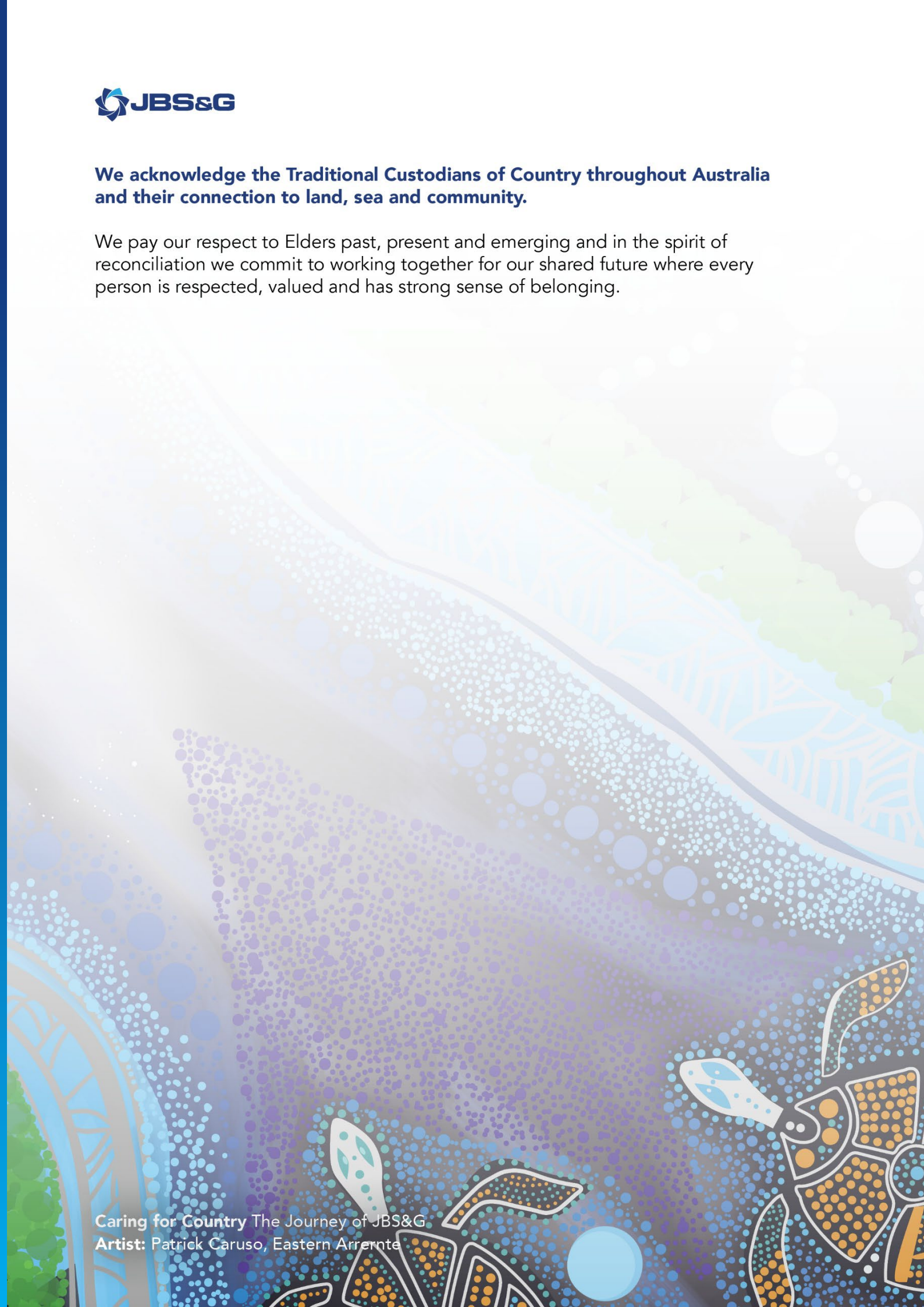
Remediation Action Plan

69149 | 169981 (Rev 0)

23 October 2025

We acknowledge the Traditional Custodians of Country throughout Australia and their connection to land, sea and community.

We pay our respect to Elders past, present and emerging and in the spirit of reconciliation we commit to working together for our shared future where every person is respected, valued and has strong sense of belonging.



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Abbreviations

Term	Definition
ACM	Asbestos Containing Materials
AEC	Areas of Environmental Concern
AHD	Australian Height Datum
AQ	Asbestos Quantification
bgs	Below ground surface
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CLM Act	Contaminated Land Management Act 1997
COC	Chain of Custody
COPC	Contaminants of Potential Concern
CSM	Conceptual Site Model
CRS	Chromium Reducible Sulfur
DA	Development Application
DSI	Detailed Site Investigation
DP	Deposited Plan
DQI/ DQO	Data Quality Indicators/ Data Quality Objectives
ENM	Excavated Natural Material
EPA	NSW Environment Protection Authority
ESD	Ecologically Sustainable Development
GSW	General Solid Waste
ha	Hectare
HAFF	Housing Australia Future Fund
JBS&G	JBS&G Australia Pty Ltd
LAA	Licensed Asbestos Assessor
LOR	Limit of Reporting
NATA	National Association of Testing Authorities
NEPC 2013	National Environment protection Council 2013
NEPM	National Environment Protection Measure
NEMP	National Environment management Plan
NHMRC	National Health and Medical Research Council
OCP	Organochlorine Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PARCCS	Precision, Accuracy, Representativeness, Comparability, Completeness and Sensitivity
PCB	Polychlorinated Biphenyls
PFAS	Per and polyfluoroalkyl substances
PFOS	Perfluorooctanesulfonic acid
PID	Photoionisation Detector
POEO Act	Protection of the Environment Operations Act 1997

Term	Definition
PSI	Preliminary Site Investigation
QA/QC	Quality Assurance/Quality Control
RAP	Remediation Action Plan
RPD	Relative Percentage Difference
RRE	Resource Recovery Exemption
RRO	Resource Recovery Order
RSW	Restricted Solid Waste
SAQP	Sampling Analytical and Quality Plan
SEPP R&H (2021)	State Environmental Planning Policy (Resilience and Hazards) 2021
SEARs	Secretary's Environmental Assessment Requirements
SSDA	State Significant Development Application
SWL	Standing Water Level
TCLP	Toxicity Characteristic Leaching Procedure
TRH	Total Recoverable Hydrocarbons
UCL	Upper Confidence Limit
UST	Underground Storage Tank
VENM	Virgin Excavated Natural Material
VOC	Volatile Organic Compound

Executive Summary

JBS&G Australia Pty Ltd (JBS&G) was engaged by Homes NSW (the client) to prepare a Remediation Action Plan (RAP) in support of a State Significant Development Application (SSDA) submission for the land located at 68-80 Banks Avenue, Pagewood NSW (the site). The site is legally identified as Lots 1 to 17 in deposited plan (DP) 35180, and Lot 1 in DP527564, and has an area of approximately 9,260 m^2. The site location and site layout are shown in **Figure 1** and **Figure 2** respectively.

The site is currently zoned as R3 Medium Density Residential and is occupied by five two- to three-storey walk-up buildings. Homes NSW has identified that the site could be redeveloped to include approximately 84 social housing dwellings and 140 private market dwellings within three 7-8 storey residential flat buildings. The target of 84 social dwellings is proposed to support a Housing Australia Future Fund (HAFF) application.

This plan has been prepared to support a Planning Submission to meet Secretary's Environmental Assessment Requirements (SEARs), including the requirements of Chapter 4 Remediation of Contamination under *State Environmental Planning Policy (Resilience and Hazards) 2021* (SEPP R&H 2021).

JBS&G previously completed a combined environmental Preliminary and Detailed Site Investigation (PSI/DSI, JBS&G 2025). The PSI/DSI assessment identified heavy metals and asbestos containing materials (ACM) in fill at the site, as well as low level concentrations of per- and poly-fluoroalkyl substances (PFAS) in groundwater. In accordance with the requirements of SEPP R&H (2021), for the site to be made suitable for the proposed land use, contaminated media will require remediation and/or management. This document presents a RAP that outlines the principles of remedial/validation works required for the site, that when completed, will demonstrate that the site has been made suitable for the intended land use.

Outstanding data gaps have been identified with regard to characterisation of the nature/extent of site contamination conditions including:

- The extent of heavy metal impacts in fill material associated with BH01, BH03 and BH04 in the northern portion of the site;
- The extent of asbestos impacts in fill material at identified locations (BH11/MW02 and BH12);
- The extent of asbestos impacts across the site;
- Fill characterisation beneath existing building footprints and areas of hardstand; and
- Surface soils following building demolition across the site.

The identified data gaps are able to be addressed via further delineation once access is available to the relevant site portions, with the results to be evaluated within the broader RAP framework.

The preferred remediation strategy is excavation of impacted fill material, followed by emu picking of asbestos impacted materials and off-site disposal of heavy metals impacts at a licensed waste facility. If additional unexpected asbestos or other impacts are identified, or the preferred remedial options or validation fails, alternate approaches may be adopted as outlined within this plan. Contingency including unexpected finds is dealt with in **Section 8**.

Subject to the successful implementation of the measures described in this plan, it is concluded that the site can be made suitable for the intended use.

1. Introduction

1.1 Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Homes NSW (the client) to prepare a Remediation Action Plan (RAP) in support of a State Significant Development Application (SSDA) submission for the land located at 68-80 Banks Avenue, Pagewood NSW (the site). The site is legally identified as Lots 1 to 17 in deposited plan (DP) 35180, and Lot 1 in DP527564, and has an area of approximately 9,260 m^2. The site location and site layout are shown in **Figure 1** and **Figure 2** respectively.

The site is currently zoned as R3 Medium Density Residential and is occupied by five two- to three-storey walk-up buildings. Homes NSW has identified that the site could be redeveloped to include approximately 84 social housing dwellings and 140 private market dwellings within three 7-8 storey residential flat buildings. The target of 84 social dwellings is proposed to support a Housing Australia Future Fund (HAFF) application..

This plan has been prepared to support a Planning Submission to meet Secretary's Environmental Assessment Requirements (SEARs), including the requirements of Chapter 4 Remediation of Contamination under *State Environmental Planning Policy (Resilience and Hazards) 2021* (SEPP R&H 2021).

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This RAP outlines the principles of remedial/validation works required for the site, that when completed, will demonstrate that the site has been made suitable for the intended land use. The RAP was prepared with reference to relevant guidelines made or approved by the NSW Environment Protection Authority (NSW EPA), inclusive of:

- *National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013.* National Environmental Protection Council (NEPC 2013);
- *Consultants Reporting on Contaminated Land – Contaminated Land Guidelines*. NSW EPA 2020 (EPA 2020);
- *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme (3rd Edition)*. NSW Environment Protection Authority 2017 (NSW EPA 2017); and
- *Environment Protection Authority – Sampling Design Part 1 – Application – Contaminated Land Guidelines*. NSW Environment Protection Authority, August 2022 (NSW EPA 2022).

1.2 Objectives

The objectives of the RAP were to:

- Provide a summary of known and potential site contamination conditions and potential exposure pathways via documentation of a Conceptual Site Model (CSM);
- Identify available remediation strategies as may be adopted for the site by an assessment of remediation options, including evaluation of options in accordance with the principles of ecologically sustainable development (ESD), and anticipated development objectives for the site; and

[1] *68-80 Banks Avenue, Pagewood NSW, Preliminary and Detailed Site Investigation.* 1 October 2025. JBS&G Australia Pty Ltd. Ref 69149/ 169431 (Rev 0) (JBS&G 2025)

- Document the procedures and standards to be followed in order to remove the potential contamination risks for the proposed development such that the site can be made suitable for the intended medium to high density residential land use with gardens/accessible soils (HIL-A), consistent with the requirements of 'Chapter 4 Remediation of Land' in SEPP R&H (2021).

1.3 Proposed Land Use Details

The site is proposed to be redeveloped as part of a program to increase the social and affordable housing across Australia. The proposed development would include approximately 84 social housing dwellings and 140 private market dwellings within three 7-8 storey residential flat buildings. Concept plans (see **Appendix A**) for the proposed development include two residential flat buildings to the north and one to the south, with two basement levels consolidated underneath the northern buildings and one basement level underneath the southern building.

2. Site Condition and Surrounding Environment

2.1 Site Identification

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

Table 2.1: Summary Site Details

Lot/Deposited Plan (DP)	Lots 1 to 17 DP35180 and Lot 1 DP 527564
Address	68-80 Banks Avenue, Pagewood NSW 2035
Local Government Authority	Bayside Council
MGA Coordinates (approximate centre of site, GDA2020 – MGA56)	Easting: 335935 Northing: 6243366
Site Zoning	R3 – Medium Density Residential
Current Use	Medium density residential
Previous Use	Medium density residential
Site Area	Approximately 9,260 m^2

2.2 Site Description

A detailed site inspection was completed by an appropriately qualified and experienced JBS&G environmental consultant as part of the PSI/DSI (JBS&G 2025) on 11 June 2025. The site layout is shown on **Figure 2**, and key site features are outlined below.

At the time of the site inspection, the site was in use for residential purposes. Five two storey dwellings constructed of brick were located across the site. Two asphalt paved parking areas were located towards the central northern, and central southern portions of the site, which had minor staining associated with spills/leaks from vehicles. The two parking areas were accessed via Banks Avenue.

The northern, eastern, southern and western boundaries primarily consisted of grass covered surfaces with concrete footpaths leading to the buildings, garden beds and common areas. Shrubs and small flowering plants were observed within garden beds and large trees were present across the site. All vegetation appeared to be thick and healthy. Low metal fences separating the site from the adjoining public open space were located along the east site boundary, whilst the remainder of the site was unfenced. The common areas along the eastern boundary were observed to include several small toilet blocks and clotheslines for the tenants.

No standing surface water was observed at the site. No obvious indicators of previous cut to fill activities were noted (e.g. retaining walls, mounding), with site levels noted to be consistent with surrounding land. The site was relatively flat with a general downward southwestern slope.

A fragment of asbestos containing material (ACM) was identified on the site surface, in the southern portion of the site near sample location BH19 (see **Figure 3**).

With the exception of those noted above, no other indicators of contamination, or the storage/use of chemicals that may result in contamination were observed at the site.

2.3 Land Use

Surrounding land-uses at the time of the site inspection are described following:

- North: Park Parade, beyond which was low density residential areas, and public and private recreational spaces including Rowland Park, and UNSW David Phillips Sport Field (approximately 500 m from site);

- East: Jellicoe Park, beyond which was a mix of low-density residential areas, commercial properties and public recreation spaces. It is understood that historically asbestos (as ACM) in fill material has been identified within Jellicoe Park that was subsequently contained on-site below a physical barrier with an ongoing environmental management plan (EMP) managed by Council;
- South: Park Parade beyond which was a mix of low to high residential areas, commercial properties, Westfield Eastgardens and Mutch Park to the southwest of the site; and
- West: Banks Avenue beyond which was Bonnie Doon Golf Course, small patches of low-density residential areas and the Botany Dams.

2.4 Environmental Setting

The site environmental setting is detailed in **Table 2.2** below, summarised from the JBS&G (2025) report.

Table 2.2: Environmental Setting Summary

Environmental Aspect	Details
Topography	The site has an elevation that ranges from 20 to 24m Australian Height Datum (AHD) with generally flat to gentle slopes occurring downwards towards the southwest. The surrounding land in the vicinity of the site generally sloped gently to the south and southwest, towards Botany Bay, approximately 3.4 km southwest of the site.
Geology and Soil Landscape	A review of the 1:100 000 Sydney Geological Survey Sheet (1983[2]) indicated that the site is underlain by Holocene aged medium to fine-grained "marine" sand with podsols. This unit is commonly referred to as the Botany Sand Beds (BSBs) and is comprised of unconsolidated to semi-consolidated permeable sands derived from marine deposited and aeolian reworked coastal sand dunes. The sands, being part of the Tuggerah Landscape Group are fine to medium-grained quartz marine sands with minor shell fragments and podzols. The sand is interspersed with lenses of layers of peat, peaty sands, silts and clays, which become more common in the lower part of the sequence. The BSBs can be up to 30 - 60 m thick and are generally underlain by Hawkesbury Sandstone. The limitations of the landscape include extreme wind erosion hazard, non-cohesive permeable soil, very low soil fertility, localised flooding and permanently high water tables.
Acid Sulfate Soils (ASS)	A review of the *Botany Bay Acid Sulfate Soil Risk Map* (DLWC 1997[3]), the site lies within an area of 'no known occurrences of acid sulfate soil (ASS) materials'. Based on review of geology maps, soil maps, site topography and site observations it is considered unlikely that acid sulfate soil conditions would be present on-site. In addition, given that the nearest area of high probability of acid sulfate soil occurrence is greater than 500 m downgradient of the site, there is no requirement for consideration of the potential impact of proposed works on areas of known ASS occurrence. As such, no further consideration of requirements for the management of acid sulfate soil is required.

[2] *Sydney 1:100 000 Sydney Geological Map Sheet 9130*, Clark, N.R. and Jones, D.C. 1983, 1st edition. Geological Survey of New South Wales, Sydney

[3] *Acid Sulfate Soil Risk Map – Edition Two, Botany Bay*. Department of Land and Water Conservation, published December 1997 (DLWC 1997)

Environmental Aspect	Details
Hydrology	The closest water body is Mill Stream and Botany Dam approximately 620 m north and northwest of the site which flows into Botany Bay to the southwest of the site. This is cross gradient to the site and as such, the nearest downgradient water body is Botany Bay approximately 3.4 km to the south of the site. The site comprised a combination of grassed areas, mulched garden beds and sealed concrete surfaces in areas external to site structures. Precipitation falling onto the site in grassed areas is expected to infiltrate surface soils, at a rate reflective of the permeability of the underlying soils. Precipitation falling onto the sealed areas of the site, and excess water in periods of heavy or prolonged rainfall is expected to follow the topographic gradient and be collected by the site's stormwater drainage network and transferred to the regional stormwater network, that will flow toward the south and discharge ultimately within Botany Bay. Botany Bay is considered to be a sensitive marine receptor.
Hydrogeology	The site is within the Botany Sands aquifer as associated with the BSBs, which is described as a porous, extensive, highly productive aquifer. As consistent with the extensive historical use of the Botany Sands aquifer, a significant number of registered bores were identified in proximity to the site. A review of the Botany Groundwater Management Zones map (DPIE 2024[4]) indicated that the site is located beyond the restricted zones where groundwater cannot be extracted, being situated approximately 900 m north of the boundary of management Zone 1. There are a significant number of registered bores within a 2 km radius of the site, with most registered for either water supply, monitoring, or commercial/industrial purposes. JBS&G (2025) review of the data for bores within a 250 m radius of the property indicated bores were generally completed to depths of between 7.00 and 37.40 m below ground surface (mbgs). Two main groundwater systems are known to exist in the vicinity of the site and more broadly across the BSBs: • A shallow unconfined to semi-confined aquifer system resident within the unconsolidated sediments of the BSBs; and • A deep confined groundwater system resident in the fractures / porous Hawkesbury Sandstone / Shale which form the base of the Botany Basin aquifer. The predominant lithology encountered was sand and the standing water levels (SWL) was reported at depths between 1.00 and 11.50 m bgs, comprising groundwater flow within the upper aquifer. Groundwater flow is anticipated to occur on a regional level toward the south and southwest, however may be locally influenced by groundwater extraction associated with irrigation bores within the golf course to the west and potentially within Jellicoe Park to the east of the site. Based on the results of the DSI (JBS&G 2025), groundwater was encountered between 5.275 m below top of casing (m btoc) (MW03) and 5.8 m btoc (MW01), with calculated standing water levels (SWLs) between 20.49 m Australian Heigh Datum (m AHD) (MW03) and 21.554 m AHD (MW01). Generally, groundwater levels appeared to be falling towards the south/southeast of the site, consistent with the overall interpreted regional flow directions.

[4] *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2024*. Department of Planning, Industry and Environment dated June 2024 (DPIE 2024)

2.5 Site History

Evaluation of historical uses of the site was undertaken during the DSI (JBS&G 2025). A brief summary of the site history is provided below:

- The site was identified as vacant from the earliest available records until the current buildings on the site were constructed during the period 1965 and 1970. The site was transferred New South Wales Land and Housing Corporation formerly The Housing Commission of New South Wales between 1947 and 1967.
- Potentially contaminating activities for the site relate predominantly to the possible introduction of fill to create site levels prior to and during development of the site and adjacent main roads and potential impacts associated with the current development.
- Due to the parklands and golf course in close proximity to the site and porous soils, nitrogen-rich fertilisers may also have implications for groundwater quality. It is noted that the groundwater assessment completed as part of the PSI/DSI (JBS&G 2025) did not identify potential contamination related to these land uses.

3. Previous Site Investigation (JBS&G 2025)

JBS&G completed a review of the DSI (JBS&G 2025) environmental report as available for the site and a summary of the findings is presented below.

JBS&G (2025) was engaged by Homes NSW (previously NSW Land and Housing Corporation) to complete a combined PSI/DSI at the site. The scope included review and collation all available existing site history and environmental setting data, preparation of a CSM with consideration to the proposed land uses, and implementation of a site investigation and a laboratory analysis program to obtain further data.

The intrusive investigation included 21 soil borehole locations, and installation and sampling of three groundwater monitoring wells. Sample locations are presented on **Figure 3**. Selected soil and groundwater samples were analysed for identified potential contaminants of concern (COPCs) including asbestos in soil, heavy metals, petroleum hydrocarbons (TRH/BTEX), polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), PFAS, organochlorine pesticides (OCPs), and polychlorinated biphenyls (PCBs). Tabulated laboratory results are included in **Appendix B** and bore logs are included in **Appendix C**. Analytical results were compared to site assessment criteria for residential land use with accessible soils (scenario A, NEPC 2013[5]), noting that PFAS assessment criteria gave consideration to NEMP 3.0 (HEPA 2025[6]) health and ecological values, following which site specific health based investigation levels where generated excluding consideration of home grown produce consumption given the nature/characteristics of the proposed development. The adopted assessment criteria have been presented in the summary tables presented in **Appendix B**.

Asbestos in the form of non-friable ACM was observed on the ground surface and in fill materials on the site. ACM in soil was reported above the health-based assessment criteria at two locations (BH11/MW02_0-0.3 and BH12_0-0.3, see **Figure 4A**) and below the criterion at one location (BH19_0-0.8). It was noted that soils represented by sample BH19_0-0.8 located in surface soil would exceed health-based criterion of “no visible asbestos in the top 100mm”. The presence of non-friable ACM fragments may pose an unacceptable health risk to future site users should the fragments be disturbed/abraded and asbestos fibres be released and become airborne and respirable.

With regard to the extent of asbestos in soil impacts identified during this assessment, it was noted that test pits are a preferred option for identifying and quantifying potential asbestos impacts, however boreholes were used for sample collection due to the active use of the site. Further, no assessment of the potential occurrence of asbestos in soil was completed within the current building footprints. Based on the identified presence of ACM at the site, and potential that historical demolition works may have involved potential asbestos building materials, the potential for further asbestos impacts in soil at the site exists.

Lead and chromium were reported in soil at concentrations above health based and ecological criteria within the northern portion of the site, particularly within BH03_0-0.1 as shown in **Figure 4A**. Surface soils at BH01, BH03 and BH04 present an unacceptable risk to future onsite receptors and will require management during redevelopment of the site.

Concentrations of COPCs in groundwater were reported as present below the adopted site assessment criteria except for minor exceedances in some samples for Perfluorooctanesulfonic acid (PFOS). The elevated levels of PFOS were consistent with levels typically observed in urban settings, and concentrations of COPC were consistent across upgradient and downgradient monitoring wells. As such, elevated concentrations of PFOS were not considered consequent of contamination source(s) on the site, and specific management with regard to the proposed land use will not be required. However, such concentrations will require

[5] *National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013.* National Environmental Protection Council (NEPC 2013)

[6] *PFAS National Environmental Management Plan (NEMP) Version 3.0*, Heads of EPA Australia and New Zealand 2025, (HEPA 2025)

management should dewatering be necessary during redevelopment to ensure the suitability of extracted water for off-site disposal.

Relatively acidic readings were recorded during field screening of pH in groundwater. However, this was noted to be inconsistent with laboratory pH results. While field pH is usually more accurate, the inconsistency should be further investigated via additional field and laboratory testing prior to discharge of groundwater from the site.

It was recommended that a RAP be prepared for the site to manage and remediate the identified impacts, including:

- Management of asbestos impacts during redevelopment;
- Management of lead impacted surface soils within the northern portion of the site;
- Management of potential unexpected finds identified during redevelopment; and
- Management of groundwater during redevelopment activities where dewatering may require extraction and potentially off-site disposal of water.

Based on the scope of the work undertaken, it was considered that the site can be made suitable for the proposed medium to high density residential development with gardens/accessible soils, following the implementation of a RAP.

4. Pre-Remediation Conceptual Site Model

4.1 Previous Assessments

Based on the available site history information, site inspection, and results of the recent JBS&G investigation (JBS&G 2025), the elements of the Conceptual Site Model (CSM) are discussed below. A desktop evaluation of the site is provided in **Section 2**, and review of currently available reports provided in **Section 3**. While there is significant data available for the site, there are limitations in relation to the extent of identified contamination, and the character of the fill material beneath buildings footprints and hardstand areas that will require consideration during implementation of the RAP.

4.2 Overview

NEPC (2013) identifies a CSM as a representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The development of a CSM is an essential part of all site assessments.

NEPC (2013) identified the essential elements of a CSM as including:

- Known and potential sources of contamination and contaminants of concern including the mechanism(s) of contamination.
- Potentially affected media (soil, groundwater, vapours etc.).
- Human and ecological receptors.
- Potential and complete exposure pathways; and
- Any potential preferential pathways.

4.3 Known and Potential Areas of Environmental Concern

Based on the history review and observations made during the JBS&G inspection of the site, areas of environmental concern have been identified and are presented in **Table 4.1**.

Table 4.1: Areas of Environmental Concern (AECs) and Contaminants of Potential Concern (COPC)

Area of Environmental Concern (AEC)	Primary Contaminants of Potential Concern (COPC)
Imported and/or reworked fill materials of unknown origin used to fill and create current site levels	Asbestos, heavy metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), organochlorine pesticides (OCPs), and per- and polyfluoroalkyl substances (PFAS)
Impacts as associated with the current residential structures, inclusive of hazardous building materials and property maintenance activities, storage and use of miscellaneous items including pesticides, petroleum based products, household/garden chemicals.	Heavy metals, OCPs, PCBs, TRH/BTEX, PFAS and asbestos
Potential for impacts to groundwater as a result of migration of contaminants associated with maintenance of adjoining public recreational facilities	Nitrogen compounds, heavy metals, PFAS

4.4 Known and Potentially Contaminated Media

Potentially contaminated media comprise:

- Surface/fill soils; and
- Groundwater.

Each of the AECs and corresponding COPCs identified in **Table 4.1** have the potential to impact soil and/or groundwater at the site. A summary of impacted media as identified during the previous JBS&G (2025) assessment is discussed below in relation to a residential land use scenario.

4.4.1 Heavy Metals

Lead and chromium exceeding site health-based and/or ecological investigation levels was previously reported in fill at three locations in the northern portion of the site (see **Figure 4A**).

4.4.2 Asbestos

Asbestos as ACM fragments was identified on the ground surface at one location in the south and in fill materials at two locations (see **Figure 4A**) at concentrations above the adopted site assessment criteria. A fragment was also observed within fill material at BH19 (near the surface fragment), below the adopted site assessment criteria. The potential for further asbestos impacts in soil across the site was noted by JBS&G (2025).

4.4.3 PFAS

PFOS was also reported in groundwater at levels above the most sensitive ecological investigation criteria (99% species protection) at all groundwater monitoring locations (see **Figure 4B**). These results were considered to be representative of background levels.

4.4.4 Summary of Impacted Media

Asbestos and heavy metals were identified in fill materials at the site exceeding assessment criteria. Based on the inert nature of bonded asbestos, and soil contaminant leachate results reported by JBS&G (2025), it is considered unlikely that impacts would have migrated to the underlying groundwater. Remediation will be required to make the site suitable for the proposed residential with gardens/accessible soils land use scenario.

4.5 Potential Human and Ecological Receptors

Both human and ecological receptors of potential contamination have been identified and documented below. Receptors groups have been identified by consideration of the current and proposed future land use. The primary potential human receptors of concern are:

- Users of the site who will occupy the site for residential uses in addition to associated visitors to the site, both of which may access landscaped areas (both private spaces and common areas) within the site and the basement infrastructure, noting that it has been assumed that whilst occupants/visitors will have access to landscaped areas of the site, inclusive of dermal contact with soils, the land use scenario has excluded the production of food within site soils for the purposes of establishing site PFAS compound health based criterion. This condition will require to be written into property/facilities management rules as associated with future use of landscaped common property; and
- Commercial workers who access the site for construction and site maintenance activities in addition to workers occupying roles associated with building management.

Ecological receptors are identified as follows:

- Plants/landscaped areas in the northern portion of the site, associated with the lead and chromium (III) impact;
- Future plants/landscaped areas (within existing site soil) as proposed to be established during development works in possible common areas; and
- Fauna which may incidentally frequent the site.

Exposure pathways have been defined for environmental media which represent a potential contamination source if not remediated during site redevelopment. Each potentially complete source, pathway, receptor (SPR) linkage is presented following:

- Human Receptors (lead and asbestos):
    - Soil -> direct contact (oral ingestion/inhalation of particulates and/or fibres/dermal contact) -> site occupants, visitors, users and commercial workers.
- Ecological Receptors (heavy metals):
    - Soil -> direct contact -> flora and fauna within the site occurring within landscaped areas.

There is considered to be a potential exposure should the ACM fragments on the ground surface be disturbed/abraded and asbestos fibres be released and become airborne and respirable. It is noted that only one fragment was identified on the ground surface at the time of the site inspection/investigation and this was removed from the site during the investigation.

Given that the identified surface soil ACM impacts were non-friable and that the site is currently covered by a mix of hardstand pavements, building footprints and grass cover, there is considered to be a low risk of exposure via the identified pathways for existing site contaminants via direct contact with site soils/fill material.

Fill material will require appropriate management in order to preclude unacceptable exposures to the impacts presented above to site workers during construction and future site occupants/users/visitors during the life of the development.

4.6 Potential Preferential Pathways for Migration

Man-made preferential pathways are likely present throughout the site, generally associated with areas of previously disturbed natural ground present beneath the existing ground surface and soils surrounding sewer, stormwater, or other below ground services infrastructure at the site. Fill materials and disturbed natural soil are anticipated to have a higher permeability than the underlying natural soils and/or bedrock and as such provide for preferential flow paths for the migration of contaminants, should they be present as associated with the site. Existing investigation data has not identified the potential occurrence of migration beyond the current site boundaries in contaminated media, resulting in either migration of contaminants onto, or away from the site.

Preferential pathways have been identified as natural and/or man-made pathways that result in the preferential migration of COPC in the solid state (sediments, dust, etc). As the site is primarily hardstand surfaces with pockets of unsealed grassed surfaces, the potential for surface water/ sediment migration and/or windblown dust migration of contamination from the site is generally low in its current condition.

4.7 Data Gaps

Based on the environmental assessment works undertaken, it is considered that there is sufficient data to inform this RAP. However, as with all environmental investigation/sampling programs, given the practical constraints associated with site investigation activities completed to date, there remains outstanding data gaps with regard to characterisation of the nature/extent of site contamination conditions including:

- The extent of heavy metal impacts in fill material associated with BH01, BH03 and BH04 in the northern portion of the site;
- The extent of asbestos impacts in fill material at identified locations (BH11/MW02 and BH12);
- The extent of asbestos in soil impacts across the site; and
- Fill characterisation beneath existing building footprints and areas of hardstand and associated surface soil conditions as may be identified following building demolition.

The current understanding of site conditions as defined in the updated CSM is considered sufficiently robust to enable development of a detailed remediation plan to make the site suitable for the proposed development. The identified data gaps are able to be addressed via further investigation once access is available to the relevant site portions, with the results to be evaluated within the broader RAP framework.

4.7.1 Site Inspection

An initial site inspection of the site should be completed by the Environmental Consultant prior to construction works beginning, due to potential changes to the site following this RAP being prepared. The confirmatory inspections will take place to confirm and/or document the following:

- The site condition;
- Presence of known ACM and heavy metal impacted areas; and
- Identification of any unexpected finds (e.g. any further ACM impacts on the ground surface).

4.7.2 Delineation of Heavy Metal and Asbestos Impacted Soil

Based on the previous investigation (JBS&G 2025), there are several areas which require further assessment to delineate identified impacts. These locations are presented on **Figure 4A** and include bonded asbestos impacts at three locations (surface observation in the south of site/BH19, BH11 and BH12) and heavy metals (lead and/or chromium III) at three locations (BH01, BH03 and BH04). Samples will be collected from four locations approximately 5 m around each exceedance location, and where possible, beneath the level of impact. Soil samples may either be assessed in the field using an X-ray fluoresence (XRF) portable field unit, and/or laboratory analysis to delineate the extent of soil requiring remediation, with additional locations completed as appropriate to confirm the extent of the impact.

It is recommended that the bonded asbestos delineation sampling be completed via test pits to allow for better characterisation of potential for ACM impacts. Where ACM impacts are visually observed during sampling works and/or via laboratory analysis of associated 500 ml soil samples, delineation sampling should be extended until no further ACM inclusions and/or impacted/contaminated soil is identified.

Asbestos sampling methodology will include 10L field asbestos quantification and laboratory analysis of 500mL samples in accordance with WA DOH (2009[7]) guidelines

4.7.3 Fill Assessment Beneath Buildings/Hardstand Areas, and Asbestos in Fill Assessment

It is assumed that the fill assessment would be completed following demolition works, possibly in conjunction with the asbestos in fill data gap investigation (unless this is completed prior to demolition works).

The previous intrusive investigation (JBS&G 2025) was limited to intrusive boreholes given the current operational status of the site with locations completed only beyond the current building footprints and hardstand areas covering a significant portion of the site. Following demolition of structures and hardstand

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

surfaces, a detailed ground surface inspection should be completed by an appropriately qualified and experienced consultant to establish the potential presence of ground surface asbestos in soil indicators. Subsequently, sample locations should be advanced (preferably via test pits) at least 0.5 m into the underlying natural soils, to characterise the surface soil and any fill material within the previously inaccessible portions of the site.

Given asbestos contamination was identified at three locations, the density of additional sampling locations to appropriately assess the previously inaccessible surface soils/fill at the site should consider WA DoH (2009), which recommends a systematic grid sampling density at double the frequency noted in EPA (2022) of sample locations for sites likely to have asbestos contamination. Asbestos quantification sampling should be completed at all sample locations for all fill types in accordance with DoH (2009), with laboratory analysis of 500mL samples.

4.7.3.1 Building Footprint Validation (Surface Soils)

The development works will involve the demolition of all the current buildings and associated infrastructure at the site. The demolition works are to be completed by an appropriate demolition contractor with appropriate controls and management plans in place. Demolition works are beyond the remit of this RAP.

Subsequent to the demolition and removal of building materials, assessment of surface soils within the footprints of the former structures will be required, using hand tools to assess the potential surface impacts from hazardous building materials. Samples must be collected on a 20 m grid from within the former building footprints for lead and asbestos, with some limited PCB analysis (see **Table 7.3**).

Additionally, an inspection of the footprint for demolition rubble, visible lead paint flakes, staining and/or ACM fragments must be completed by a suitably qualified environmental consultant.

5. Remediation Options Evaluation

5.1 Remediation Goals

The goal of the site management/remediation works is to ensure that the following is achieved:

- Undertake remediation works in a method consistent with principles of ESD.
- Prevention of the exposure of human populations occupying/working on/using the site to potential contamination on or underlying the site.
- Appropriate management and/or disposal of soil and/or water disturbed during development activities in accordance with in-force regulations and relevant EPA guidelines.
- Removal/remediation of fill material representative of human health and/or ecological exceedances of heavy metals, and asbestos contaminated material;
- Appropriate off-site disposal of all contaminated (where this remedial option is selected) and/or material excess to development requirements to suitable locations for waste disposal and/or beneficial reuse;
- Management of potential unexpected finds identified during redevelopment;
- Validation of site management and remedial works in accordance with the relevant EPA made or approved guidelines;
- Documentation of works as completed appropriately to demonstrate the suitability of the site for the proposed land use and compliance with applicable legislation, regulations, guidelines and development consent conditions as may apply to the site; and
- Management of groundwater during redevelopment activities where dewatering may require extraction and potentially off-site disposal of water.

5.2 Guidance Framework

The RAP has been prepared with consideration to the following list of NSW EPA made or approved guidelines:

- *National Environment Protection (Assessment of Site Contamination) Measure 1999, Amendment No.1 2013*, National Environment Protection Council (NEPC 2013).
- *Contaminated Land Guidelines: sampling design part 1 – application*. EPA (EPA 2022).
- *Consultants Reporting on Contaminated Land, Contaminated Land Guidelines*, EPA, April 2020, updated 5 May 2020 (EPA 2020).
- *Contaminated Sites: Guidelines for NSW Site Auditor Scheme*, 3rd edition October 2017 (NSW EPA 2017).
- *Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Australian and New Zealand Governments*, ANZG (ANZG 2025).
- *Guidelines for the Assessment and Management of Groundwater Contamination*, DECC March 2007 (DECC 2007).
- *PFAS National Environmental Management Plan (NEMP) Version 3.0*, Heads of EPA Australia and New Zealand 2025 (HEPA 2025).

In addition, consideration is also required to guidelines made or approved by the EPA under the *Protection of the Environment Operations (POEO) Act 1997* and associated regulations, including:

- *Waste Classification Guidelines, Part 1 - Classifying Waste*. NSW EPA 2014 (EPA 2014)

- *Addendum to the Waste Classification Guidelines (2014) – Part 1: classifying waste*. October 2016. NSW EPA 2016.
- *Waste Classification Guidelines, Part 2 – Immobilising Waste*. NSW EPA 2014

Other guidance that should also be considered in relation to site conditions includes:

- *Work Health and Safety (WHS) Act 2011* and *Work Health and Safety Regulation 2017*.
- *State Environmental Planning Policy (Resilience and Hazards) 2021* (SEPP R&H).
- *Code of Practice: How to safely remove asbestos Code of Practice*, SafeWork NSW, December 2022 (SWNSW 2022a).
- *Code of Practice: How to Manage and Control Asbestos in the Workplace*, SafeWork NSW, December 2022 (SWNSW 2022b).

5.3 Regulatory and Planning Requirements

Where a proponent seeks approval for a change of permitted use of the land, either in the form of a rezoning, sub-division or project approval, it is required that the proponent satisfies the consent authority, and relevant regulator (including the NSW EPA), that contamination conditions as may be present at the site will be appropriately managed such that the site may be considered suitable for the proposed use prior to commencement of the approved use.

5.3.1 State Environmental Planning Policy (Resilience and Hazards) 2021

Development consent for remediation works is addressed by reference to *State Environmental Planning Policy (Resilience and Hazards) 2021*.

It is anticipated that the remediation works may be undertaken ancillary to redevelopment of the site. On this basis, the works are classified as Category 1 Remediation Works as per the meaning provided in the SEPP Section 4.12. On this basis, it is anticipated that the state significant development application (SSDA) will seek consent for implementation of the works outlined in this RAP under the *Environmental Planning and Assessment Act 1997*.

It is noted that alternatively, consideration of SEPP (R&H) Section 4.8 indicates that it is expected that none of the triggers for Category 1 remediation would be met for the site. As such, and subject to final review by an appropriate planning practitioner, it is expected the works may comprise Category 2 remediation works, i.e. works for which development consent is not required. In this instance, consideration may be given to commencement of remediation works following the notification requirements as outlined in Section 4.11, inclusive of provision of 30 days written notice to Randwick Council.

5.3.2 Other Requirements

In addition to the requirements of *SEPP (Resilience and Hazards) 2021* as outlined above, consideration of the regulatory requirements under NSW legislation/regulation will also be necessary as briefly outlined following:

POEO Act (1997) and associated POEO Regulations

All potential discharges from the site during remediation works will require to be maintained below applicable assessment criteria/threshold guidelines during the remediation/development works. This would apply to potential emissions in air, water and discharges to surface and groundwater. Levels of discharges are typically assessed at a site boundary. This site RAP provides a process to be followed during the remediation activities and subsequent development works to ensure that the beneficial re-use and importation of materials does not cause site contamination and pollution of groundwater and/or waters, air or soil, by reference to any applicable criteria as may be used to assess pollution under the POEO Act (including s.120).

Evaluation of the proposed remediation/validation activities has been completed in relation to the categories and/or thresholds presented in POEO Act Schedule 1. Where works trigger one or more categories presented in Schedule 1, the works will require to be licensed by the EPA (as an Environmental Protection Licence (EPL)) in addition to the requirements of the consent authority. These activities may for this project relate to the treatment of contaminated soil and/or groundwater, etc.

The proposed remediation/validation activities are not expected to require a license given the work will not involve the treatment of contaminated soil originating on-site with the capacity: (i) to incinerate more than 1000 m^3 per year of contaminated soil, or (ii) to treat (otherwise than by incineration) and store more than 30 000 m^3 of contaminated soil, or (iii) disturb an aggregate area of 3 hectares of contaminated soil. In addition, the remediation works will not require the treatment of more than 100 megalitres per year of contaminated water.

Water Management Act (2000)

Where remediation works require the extraction (and treatment, reinjection or otherwise) of groundwater, consent for these works may be required under a temporary dewatering licence even if the triggers for an EPL are not met. Such requirements may potentially be stipulated as a condition of the development consent via the integrated development approvals process under the EPAA Act.

POEO (Waste) Regulation 2014

In addition to triggers for an EPL, consideration will be needed with respect to the POEO Waste Regulation in relation to non-licensed waste activities and waste transporting. This includes requirements for management of asbestos and other waste streams during transport/disposal, the approval of methods associated with the immobilisation of specific waste streams, etc. as may be required under this RAP.

Work Health and Safety Act 2011 and associated Regulations including those related to Asbestos

Given the identified asbestos in soil contamination and impacted materials at the site, the site is considered to have asbestos contaminated soils as per the definition in the regulations and as such, appropriate protections implemented with respect to the exposure of site workers and nearby sensitive receptors. In such instances, management requirements are outlined in *Code of Practice How to Safely Remove Asbestos*, SafeWork NSW, December 2022 (SWNSW 2022a). SafeWork NSW (2022a) further defines and refers to competent persons carrying out asbestos assessments and management activities and, therefore, a competent person must carry out such activities where non-friable asbestos is identified on site. Where friable asbestos impacts/contamination is identified, monitoring and validation is required to be completed by a SafeWork NSW Licensed Asbestos Assessor (LAA).

Waste Classification Guidelines (2014 and 2016)

All wastes generated and proposed to be disposed off-site shall be assessed, classified and managed in accordance with this guideline. Where wastes require immobilisation prior to offsite disposal (to reduce waste classifications) an immobilisation approval shall be sought in accordance with Part 2 of this guideline. Immobilisations are only anticipated to be required with unexpected finds that cannot be retained on site and cannot be disposed directly off-site to a licensed facility.

5.4 Extent of Remediation and/or Management Required

As identified by the current site contamination assessments used to generate the pre-remediation CSM as presented in **Section 4**, remediation/management at the site will be required to address the following issues:

- Removal/remediation of fill material representative of human health and ecological exceedances of heavy metals and asbestos contaminated material broadly across the site;
- Assessment and management (if required) of material identified as contaminated during implementation of the nominated data gap investigation works as outlined in **Section 4.7**;

- Management of potential unexpected finds identified as may be encountered during redevelopment; and
- Management of groundwater during redevelopment activities where temporary dewatering may require extraction and potentially off-site disposal of water.
    - It is noted that concentrations of PFAS have been identified in groundwater above adopted site assessment criteria in all monitoring well locations, however these concentrations are considered likely to be representative of regional levels. Whilst it is considered that groundwater will not require management with regard to suitability of the site for the proposed land use, should either/both remedial and/or construction excavation works require temporary dewatering, management of groundwater contamination conditions will be separately required such that water proposed to be discharged from the site is of a suitable quality for discharge to stormwater. Alternatively such water would be required to be removed from the site as waste.

5.5 Remediation Options

5.5.1 NSW EPA (2017) Guidance

The approach adopted in this RAP is consistent with the preferred hierarchy of options for clean-up and/or management provided in NEPC (2013), 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 (NSW 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. In cases where no readily available or economically feasible method is available for remediation, it may be possibly to adopt appropriate regulatory controls or develop other forms of remediation.

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

Table 5.1 Remediation Options Assessment Matrix

Remediation Option	Applicability	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.	Asbestos impacted fill material: Whilst there is no known technology to remove free asbestos fibres (i.e., AF/FA) from soils. Asbestos present in non-friable forms can be remediated by hand-picking of bonded ACM. This is not strictly treatment but does achieve a reduction in the amount of visible ACM present.	Given that ACM as identified is limited to visible bonded ACM fragments, it is considered that visible ACM can be picked and removed from the fill material such that the concentration of asbestos is below the adopted site assessment criteria. This is the preferred option considering asbestos impacts were not identified as widespread.
	Heavy metals impacted fill material: Heavy metals cannot be destroyed by treatment methods. However, there are a number of commercially available microencapsulation measures, including cement stabilisation, that effectively reduce hazards associated with soil heavy metal contaminant migration in leachable material. This option would require specific approvals, space, and time. Given there is already surplus soil to the development requirements and limited space, this is not considered a viable option.	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 site.	Asbestos impacted soils: There are currently no facilities licensed to accept asbestos impacted material for offsite treatment and return to the site. This process is not feasible in practice or economically and results in increased vehicle traffic and emissions in removing and returning the material to site.	Not a suitable option.
	Heavy metals impacted soils: Whilst stabilisation technologies are commercially viable, typically, the costs associated with returning the treated materials to site often result in them being disposed to landfill. Additionally, there is already a surplus amount of soil present on the site for the proposed development and therefore some material will require disposal.	Not a suitable option.
Option 3: Consolidation and isolation of the soil on-site by	Asbestos impacted soils: This option provides for the retention of asbestos impacted/ contaminated material on-site beneath a physical barrier such that there are no complete	Potentially suitable option and suitable alternative where Option 1 is not viable.

Remediation Option	Applicability	Assessment
containment within a properly designed barrier.	exposure pathways available between the impacted/contaminated material and sensitive human receptors. Retention could occur where a suitable capping profile may be installed, such as beneath the future paved ground surface areas, future basement footprints (potentially inclusive of 'borrow pit' excavation of natural soil/rock for off-site disposal and reinstatement with fill material), and/or paved areas beyond the basement footprint(s). In areas of new landscaping, installation of a marker layer and suitable soil profile could provide a suitable physical barrier. In such instances, a long-term environmental management plan (LTEMP) and asbestos register/AMP would be required at the site to document the presence/location of asbestos impacted materials and procedures for maintaining the barrier layer. This option minimizes the amount of waste produced from the proposed development works and is therefore consistent with ESD principles. Noting the requirement for on-going management, this option would require consideration during the development application/consent process to enable legal enforceability of the LTEMP and consideration would be required of potential implications of public notification/ costs for ongoing compliance/ management within a site infrastructure management plan (or strata scheme arrangement, where applicable) to identify the party(ies) responsible for all areas where material would be retained. As such, this option is considered suitable, subject to specific consideration of future land uses and identification of a suitable location(s) within the site.	
	Heavy metals impacted soils: As discussed above, this option would comprise the retention of heavy metal impacted material on-site beneath a physical barrier such that there are no complete exposure pathways available between the impacted material and sensitive ecological receptors. Opportunity to contain the material would be considered particularly where contaminant concentrations are related to ecological exceedances of site criteria. However, such an opportunity would be limited to material demonstrated to not have an unacceptable risk of contaminant migration, comprising material without significant heavy metal leachate conditions (such that material does not migrate to groundwater) as required under NSW EPA Guidance (EPA 1997). Opportunities and constraints for on-site containment locations would be consistent with those identified for asbestos impacts as discussed above, noting that given the proposed	Potentially suitable option and suitable alternative where Option 4 is not viable.

Remediation Option	Applicability	Assessment
	basement depth, placement beneath the building basement would not be appropriate as these would be below the groundwater table.	
Option 4: Removal of contaminated soil to an approved site or facility, followed where necessary by replacement with clean fill.	Heavy metals and asbestos impacted soil: This option comprising the excavation and subsequent off-site disposal of contaminated material to a NSW EPA licensed waste facility. The current data set indicates that the material may be provided a waste classification in accordance with NSW EPA Waste Guidelines (EPA 2014, 2016) and there are currently suitably licensed waste facilities in the Sydney Metropolitan region capable of accepting these types of contaminated soils. Off-site disposal of the impacted material is likely the fastest method of remediating the site. This option generates the highest quantity of waste, since the materials are disposed to landfill rather than retained on site (Option 3). This option also generates additional truck movements and associated fuel/emissions over Option 3. It is noted that waste generation and resource destruction associated with this option is not preferable as per ecologically sustainable development objectives. However it does provide for rapid resolution of contamination concerns and ensures the absence of ongoing liability/management requirements for all areas of the site.	Preferred option for heavy metals impacts given the anticipated limited quantity of material. Potentially suitable option where Option 1 and Option 3 are not viable for ACM.

5.6 Proposed Remediation Strategy

Based upon the above evaluation as per the assessment in **Table 5.1**, and the final land use proposed, the preferred remediation strategy is outlined below:

- Excavation of heavy metals impacted material, followed by off-site disposal to a licenced waste facility; and
- Excavation and hand picking (emu picking) of ACM impacted soils, followed by reuse of the remediated soil on-site and disposal of the ACM fragments (and associated waste) to a licensed waste facility.

As a contingency, if additional unexpected asbestos or other impacts are identified, or the preferred remedial options or validation fails, alternate approaches may be further considered for adoption. Contingency including unexpected finds is dealt with in **Section 8**.

6. Remediation Plan

The remedial scope of works is provided in the following sections.

6.1 Site Establishment

All safety and environmental controls are to be implemented as the first stage of remediation works within each stage of works. These controls will include, but not necessarily be limited to:

- Locate and isolate all required underground utilities within the site such that excavation works can safely proceed;
- Assess the potential impacts of the excavation works (where required) to existing infrastructure passing through the site and also to structures on neighbouring properties, such that appropriate controls (if required) can be implemented;
- Assess need for traffic controls;
- Work area security fencing;
- Stabilised site entry gate;
- Appropriate decontamination areas for personnel and plant;
- Sediment fencing (attached to security fencing);
- Stormwater runoff sediment controls; and
- Site signage and contact numbers.

6.2 Remedial Works

It is anticipated that the remedial works activities will be broadly sequenced based upon consideration of construction objectives associated with the proposed site development. The following has therefore been prepared to enable flexibility as to the timing and extent of works, which may be completed in stages across the site.

The remedial works are required to be undertaken by a remedial/civil works contractor with appropriate qualifications, licenses and experience, under the supervision of a similarly qualified/experienced environmental consultant and/or occupational hygienist (as relevant to asbestos removal works). The scope of works will comprise:

- Demolition of the existing building, hardstands, and associated infrastructure (if present);
- Data gap investigation within the areas identified in **Section 4.7**, followed by on-site treatment and/or off-site disposal of impacted material, if identified;
- Excavation and off-site disposal of heavy metal contaminated fill material the extent of which will be identified during the data gap investigation, including confirmation of waste classifications for off-site disposal; and
- Excavation and on-site treatment of the surface ACM and near surface fill material impacted by ACM.

6.2.1 Buildings and Hardstand Demolition

Demolition should be completed in a manner that avoids new contamination of soils in the vicinity of and beneath the buildings and/or hardstand. Although demolition is not strictly part of the remediation works, the key processes for the demolition are briefly summarised below:

- Removal and disposal of building hazardous materials in accordance with relevant regulatory guidance and *Waste Classification Guidelines 2014* (EPA 2014);
- Completion of a hazardous materials clearance inspection (where required);
- Demolition of the remainder of structures/pavements;
- Beneficial reuse of environmentally validated material onsite where possible, or lawful removal of all excess materials off-site; and
- Exposure of the underlying soils for pre-remedial characterisation assessment as per data gap requirements (**Section 4.7**).

6.2.2 Heavy Metal Impacted Material Remedial Works Excavations

Where contaminated soil has been identified as unsuitable for onsite reuse under the proposed land use and/or is excess to development requirements, this material will require excavation and off-site disposal to a lawful waste facility (or relevant premises with consent in the event of beneficial reuse). The procedure for undertaking this excavation activity will be as follows:

- Excavation of the contaminated soils will occur to a lateral and vertical extent identified during the data gap investigation, and/or as designated by the environmental consultant during excavation works;
- Following excavation, the environmental consultant will complete validation activities as per the requirements outlined in **Table 7.3** with subsequent field testing/laboratory analysis to demonstrate the unsuitable material has been successfully removed and the balance of the site fill/natural soil material is suitable to be retained. The excavation will be inspected by an environmental consultant prior to sampling of the walls and base of each of the excavations for the relevant COPCs where applicable;
- Should the initial validation assessment identify the presence of unacceptable contamination conditions by either inspection, field test (AQ) results and/or laboratory analysis results exceeding the site validation criteria, the excavation will be extended laterally and/or vertically at appropriate increments to the maximum extent achievable (i.e.. site/stage boundary, physical limitation as defined by project engineers, etc) with additional field inspection/sampling/analysis of validation samples collected for analysis to demonstrate the validation has been successful;
- It is anticipated that excavated material will be directly loaded onto vehicles for off-site disposal to a lawful waste facility;
- Where excavated material is required to be temporarily stockpiled outside of identified impacted areas on plastic or geofabric, a visual inspection only of the stockpile footprint will be required following loading into trucks for offsite disposal. Where impacted material is temporarily placed on unsealed ground, the area is to be validated by the environmental consultant as per **Section 7.3**; and
- Once successful validation of the remedial excavation is achieved, the consultant will advise the contractor that the excavation area can be reinstated with validated site won or imported soil (**Section 7.5.3**), or if reinstatement is not required for development levels, the area may be released from requirements for remediation/site management controls.

6.3 Asbestos in Soil Management/Remediation

Based on the available characterisation information as discussed in **Section 4**, a portion of the fill material at the site is known and/or assumed to be impacted with asbestos. Further assessment of site conditions will be completed as part of a data gap investigation to verify the nature and extent of the asbestos impacts within fill at the site, inclusive of conditions underlying the current buildings/hardstands.

Asbestos contaminated soil necessitating management for potential asbestos exposure is defined in SafeWork NSW (2022a) as:

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

The current dataset identifies the presence of material impacted with low concentrations of bonded asbestos in/on soil.

Excavation and removal or otherwise disturbance, of bonded asbestos contaminated soils is required to be conducted by a Class B (or Class-A) licensed asbestos removal contractor. Before starting any affected works, the appointed contractor is required to obtain a site-specific permit approving the proposed asbestos works from SafeWork NSW. A permit will not be granted without a current licence, and the permit application must generally be made at least five days before the work is due to commence (or as advised by SafeWork NSW). The details of the relevant Class-B contractor shall be further advised to the relevant parts of the materials tracking form(s).

Environmental, health and safety management requirements for the handling of these materials will be documented in an Asbestos Management Plan (AMP) to be prepared based on the requirements provided for asbestos-related works in SafeWork NSW (2022a). This will include preparation of an asbestos register and associated asbestos removal control plan (ARCP) as outlined in SafeWork NSW (2022b).

As per the requirements of SafeWork NSW (2022b), the asbestos removal works during the remediation and materials management of fill is required to be supervised by a competent person (or LAA), with appropriate controls and monitoring program to be implemented in accordance with the requirements of SafeWork NSW (2022a and 2022b), the AMP, ARCP, and **Section 10.6**.

6.3.1 Asbestos Air Monitoring

During ground disturbance/asbestos removal works activities, asbestos air 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]*. Further details are provided in **Section 10.4**.

6.3.2 Emu Picking and Removal of Bonded ACM

In areas of identified bonded ACM impact as discussed in **Section 4.4.2**, a combination of ground surface emu picking and/or excavation, spread and emu picking will be completed to separate the identified ACM fragments as further discussed below.

Ground Surface Emu Picking:

- Surface ACM fragment impacts are to be collected by picking from ground surface within the remedial area(s) by the Remediation Contractor. Picking activities will include inspection of the current ground surface and subsequent raking of the top 100 mm of surface soils. Collected ACM fragments should be disposed off-site to an appropriately licensed waste facility. A minimum of two passes of picking should be made with a 90° direction change between each pass.
- The remedial extent should then be validated by a Competent Person or LAA across the entire extent of the surface works area. Validation inspections will comprise the Competent Person/LAA walking two sets of 1 m spaced transects set at right angles, to observe the presence of remaining ACM fragments. Where greater than 2 fragments are identified within the clearance area, validation will be considered to have failed.

- Should validation fail, the remedial area the Remediation Contractor will be directed to complete another round of picking, prior to a repeat of the validation inspection(s) by a Competent Person or LAA until such time as validation is achieved at which point the remediation/management requirements will be removed from the relevant clearance area.
- All collected materials should be tracked from source, through required remedial activities to final placement/disposal, noting remediation undertaken and validation outcome.
- Alternatively to above, the surface 100 mm soil profile may be the subject of a surface scrape and temporarily stockpiled under asbestos conditions. Should this process be adopted, such temporarily stockpiled material would require to be remediated/managed as per the requirements of the following to ensure material may be suitable for beneficial reuse without ongoing asbestos management.

Bonded ACM Impacted Material Excavation, Spread and Pick:

- Fill materials impacted by ACM will alternatively be excavated and spread in an appropriate area of the site into treatment pads of no greater than 0.1 m thickness, in preferably 20 m by 20 m portions (or similar suitable dimensions);
- The resultant excavation will be validated consistent with the methodology outlined in **Section 6.2.2** above noting that inspection of the excavation faces will initially be completed to confirm the absence of visible ACM prior to collection of representative 500 ml grab samples of the walls and base to confirm the absence of asbestos in soil above the adopted site assessment criteria;
- The asbestos picking pads are to be placed in designated areas, preferably on hardstand to prevent cross contamination to underlying soils, or otherwise following stripping of surface vegetation and exposure of an underlying levelled soil base;
- The Remediation Contractor will complete inspection/raking of the spread material to remove all identifiable ACM via adopting perpendicular transects consistent with the ground surface inspection/ raking methodology discussed above;
- Upon advice from the Remediation Contractor that each pad has been successfully treated, that pad will be inspected by the Competent Person/LAA by walking two sets of 1 m spaced transects set at right angles, to observe the presence of remaining ACM fragments. Where greater than 2 fragments are identified in a pad, the Remediation Contractor will be directed to complete another round of picking, prior to a repeat of the validation inspection by the consultant;
- If the visual inspection does not identify residual ACM fragments within that pad, then a representative 500 mL soil sample will be collected for asbestos in soil laboratory analysis to confirm the absence of ACM/AF/FA above the adopted validation criteria;
- Until such time as both the inspection and laboratory analyses are able to validate the material, the pad material will be quarantined. While awaiting laboratory validation result, the material may be temporarily stockpiled to allow room for additional pads to be raked/inspected. Once the results are obtained, each pad/stockpile will either be validated as suitable for reuse on site, or otherwise deemed to have failed validation and will require further remedial works (bonded ACM impacts only) or offsite disposal (where AF/FA identified). During such works, appropriate material tracking records will be maintained by the Remediation Contractor to ensure it can be demonstrated each pad of material has been appropriately remediated and validated prior to subsequent reuse within the site; and
- At the completion of the management / remedial works, the stockpile and picking pad footprints will require to be validated. Where on hardstand pavements, this will comprise a validation inspection of the cleared area to verify the absence of residual ACM and/or potentially impacted material. Where the area is underlain by soil, the footprint shall be inspected by a Competent person/LAA consistent with the above ground surface validation requirements. If bonded ACM is identified, surface soils will

be required to be walked and picked (to depth of 100 mm) or scraped (100 mm) by the remediation contractor (for either pad picking/remediation or off-site disposal), and the footprint then re-inspected until such time as visual validation is successfully obtained. Following visual validation, soil samples (500 ml asbestos in soil) will be collected from the footprint on a systematic 10 m by 10 m grid, and analysed for the presence of asbestos in soil. Should the laboratory analysis results identify asbestos in soil concentrations at unacceptable levels, the above process will be repeated until such time as the area has been successfully validated both visually and via laboratory analysis of representative samples.

- Subject to confirmation and clearance by the competent person or LAA confirming that no visible ACM is present and no asbestos is detected in soil samples at concentrations above the site adopted criteria, pad and temporary stockpile footprints can be cleared for non-asbestos associated works to commence.
- All ACM fragments collected during 'picking' will be required to be bagged in accordance with NSW SafeWork Code of Practice requirements and then disposed of off site. Disposal dockets will be required to be provided to JBS&G to confirm the appropriate disposal.

6.4 Soil Off-Site Disposal

Material identified as requiring removal from the site is proposed to be disposed of off-site to a facility lawfully able to receive it. Materials shall be classified in accordance with NSW EPA *Waste Classification Guidelines* (EPA 2014) requirements or an appropriate exemption as created under the *Protection of the Environment Operations (Waste) Regulation 2015*.

Details of completed additional assessment activities including material characterisation reports will be included in the final validation documentation to be prepared in accordance with the requirements of the RAP. Records associated with material tracking, including trucking receipts, landfill disposal records, etc will also be reviewed to ensure material removed from the site can be accounted for and has been disposed of lawfully.

Following completion of remedial excavation works, excavation validation sampling/analysis data may be used where appropriate for provision of material characterisation reports to support the off-site disposal of material excess to development requirements. Where exposed material is observed by the environmental consultant to be non-odorous and without staining, characterisation samples will be completed as per **Table 7.3** if required, to assess the material for potential classification as virgin excavated natural material (VENM) prior to off-site removal until the bulk excavation levels are achieved.

6.5 Groundwater Management

Where temporary dewatering is required to facilitate excavation of the contaminated material and/or non-contaminated VENM within the basement envelope(s), extracted water will require characterisation so as to demonstrate contaminant concentrations are suitable for off-site disposal to stormwater in accordance with the requirements of the *Protection of the Environment Operations Act, 1997* (POEO Act 1997). Should conditions demonstrate the presence of unacceptable concentrations of contaminants, consideration may be given to either off-site disposal as liquid waste by a licensed contractor, or alternatively on-site treatment (including use of granular activated carbon (GAC), or similar) to a standard suitable for off-site discharge. Should such options be selected, treatment specifications, including treatment trial expectations will be established via implementation of a remedial work plan (RWP) prepared in conjunction with the remediation contractor that will support an application to discharge water to be submitted to the receiving asset manager (Sutherland Shire Council or Sydney Water as relevant) prior to commencement of works.

6.6 Material Importation

Based on the scope of remedial works described herein, it is anticipated that there will not be a significant requirement to import general fill material to establish site levels. However, it is noted that detailed excavations may result in requirements for importation of select materials, potentially including the interim placement of structural fill material (crushed sandstone or similar) for foundation installation (piling pads), services trench backfill aggregate, pavement basecourse, growing media, etc, and similar materials.

Prior to importation of all material, appropriate assessment must be completed to demonstrate the material is both fit for purpose and suitable from a contamination view point. In accordance with EPA requirements, the extent of assessment will be determined by the type of material proposed to be imported. The following overall principles will require consideration.

Imported materials will only be accepted to the site if they:

- Meet the definition of Virgin Excavated Natural Material (VENM) as defined in relevant legislation/regulation; **OR**
- Is quarried natural material, and by virtue not considered to be a 'waste' under the POEO Act; **OR**
- Meet the definition of a current resource recovery order and exemption (RRO/RRE) with reference to the list of current orders and exemptions on the NSW website (or a site specific RRO/RRE issued by EPA). This may include one or more of the following: Excavated Natural Material (ENM), recycled aggregate, basalt fines compost, mixed organic waste, pasteurised garden organics/ mulch and recovered fines, compost, as defined in relevant regulations; **AND**
- Appropriate documentation verifying the relevant characterisation is provided to and approved by the environmental consultant prior to importation.

In addition to the above, the following specific requirements must be met.

6.6.1 Virgin Excavated Natural Material (VENM)

The Protection of the Environment Operations Act 1997 defines VENM as:

'*Natural material (such as clay, gravel, sand, soil or rock fines):*

- *That has been excavated or quarried from areas that are not contaminated with manufactured chemicals or process residues, as a result of industrial, commercial, mining or agricultural activities; and*
- *That does not contain any sulfidic ores or soils or any other wastes.*'

Material imported to the site as VENM must meet this definition.

VENM materials to be imported are required to be assessed in accordance with the requirements of EPA (2022) and NEPC (2013). This will incorporate a review of the source site history and inspection of materials prior to, as well as during, importation onto the site. A Virgin Excavated Natural Materials Assessment Report (or similar) prepared by a suitably qualified environmental consultant must be provided to the environmental consultant for approval prior to importation of any VENM.

The VENM assessment sampling and reporting will consist of the following, prior to import:

- Details of the source site history, source site address, characteristics of the material (such as colour, soil type, odours), environmental setting (e.g. geology, potential acid sulfate soil, salinity), and potential for impact from activities at the source site and surrounds, including consideration of potential for impacts from per- and poly-fluoroalkyl substances (PFAS);
- Sampling and laboratory analysis for COPCs at the source site (and with consideration to those of the receiving site), based upon volume of proposed import, as nominated in **Table 7.3**, plus QA/QC samples

per source site, with overall consideration to the potential historical site user and characteristics identified upon inspection of the consistency of the material;

- Laboratory report(s) from a NATA accredited laboratory and chain of custody documentation, in addition to other QA/QC documentation to demonstrate the samples were obtained using appropriate procedures by suitably qualified personnel, samples were analysed within relevant holding times, and data is reliable.

Potential VENM will also be assessed to ensure it does not contain acid sulfate soils (ASS) or potential acid sulfate soils (PASS), with reference to the ASSMAC (1998) *Acid Sulfate Soil Manual* and additional sample analysis by sPOCAS and S_{Cr} method, if required (i.e. where pH of material is less than 5 and/or review of applicable ASS Risk Maps indicates the potential presence of ASS, as per the ENM Order 2014).

6.6.1.1 Quarried Natural Material

Quarried natural materials are not considered to be a 'waste' under the POEO Act, and are therefore exempt from the majority of the VENM assessment protocol, with the exception that the appointed Environmental Consultant should be notified and supplied with source site documentation for each quarried natural material source site prior to importation to the site. A source site inspection may be required depending on JBS&G's review of provided source site documentation, and to verify material arriving on site is consistent with that reported to be supplied by the source quarry.

6.6.2 Resource Recovery Order/Exemption Materials

Sampling/analysis and documentation of materials as per an EPA RRO is required to be undertaken by the supplier in accordance with the RRO and provided to the proposed receiving site as defined by the NSW EPA RRO. In addition, where materials are proposed for beneficial reuse under a NSW EPA exemption (i.e. imported to the site), fill material will need to be further assessed by the environmental consultant for land use suitability prior to acceptance to site. Such sampling/analysis will include, if not provided by the supplier, asbestos in soil/material analysis consistent with NEPC (2013) requirements in addition to PFAS given existing RROs typically do not require specific analysis of such COPCs.

Samples shall be collected from the source site premises and submitted for laboratory analysis as per the detailed nominated in **Table 7.3**. The materials shall be further inspected for any aesthetic indicators of contamination including foreign inclusions, staining and odours.

Verification inspections of material will be completed by the environmental consultant upon receipt of material at the receiving site to ensure the delivered material is consistent with that documented at the supplier's premises.

6.6.3 Supporting Documentation

All materials proposed to be imported to site must be accompanied by appropriate supporting documentation which demonstrates the materials conformance to all regulatory requirements.

The supporting documentation must be provided to the environmental consultant at the earliest practical date so as to enable review and confirmation that the material and documentation satisfy all regulatory requirements and is considered suitable for importation and use at the site under this RAP.

As a minimum, importation documentation will be required to include:

- Location of the source site;
- Source site history and potentially contaminating activities;
- Material description/observations and volume imported;
- Sampling density, pattern and methodology;

- Summary of results; and
- Material classification.

6.6.4 Non-Conformances Prior to Import

In the event proposed materials do not meet the requirements detailed above, materials will not be approved for importation to the site and an alternative source site will need to be provided by the supplier and be investigated to confirm conformance.

6.6.5 Approval Prior to Importation

The environmental consultant will be required to provide written correspondence approving each material type for importation to the site prior to the commencement of importation. These documents will form part of the validation of the site and subject to review by the appointed NSW EPA accredited Site Auditor (as relevant).

6.6.6 Transport Requirements

The supplier/importer/transporter of fill will be responsible for ensuring appropriate transport of approved fill/material to the site and, if necessary where material is deemed unsatisfactory upon arrival, will be responsible for the return of unaccepted material to the source site or lawful disposal to an off-site waste facility.

6.7 Material Tracking

Material tracking records in addition to the import assessment report are required to be included in the final validation report for the site. It is envisaged that three types of material movement may occur during remediation/construction works:

- Off-site disposal of contaminated and/or material excess to site requirements;
- Importation and placement of material as part of development works; and
- Movement of material, contaminated or otherwise, within the site.

Movement of materials within the site shall be moved in accordance with a material tracking plan (MTP) designed to track the quantity and character of materials from their source location (whether on-site or imported), through temporary storage (as required) to final placement.

The Principal 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 reuse 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 off-site, 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 AMP to be developed for the site.

The appointed environmental consultant will be responsible for the following:

- Liaising with the Principal 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 cannot be validated as suitable for proposed permissible uses.
- 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 Principal 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.

Where material is excavated within the site and proposed to be the reused, the Principal Contractor, or its appointed Civil Works Contractor shall document the source, confirmation of the material characterisation and management requirements, and proposed final location within a material tracking system (MTS).

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 **Appendix D**.

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

1. Time and Date
2. Truck registration or plant identification;
3. Load quality; and
4. Material/stockpile reference name/number. This will provide sufficient details on source location reference, visual/olfactory observations, materials classification/reuse zone suitability summary.

The final portion of the MTS (Part B) will be completed for materials which are not to be reused/placed within the site, including that surplus to capacity limits, and are scheduled for off-site disposal in accordance with EPA (2014).

Items 1 to 4 above will be recorded initially. The name of the haulage company responsible for transferring the material to the disposal site and the details of the receiving site must also be recorded. Prior to leaving the site, the material requires a waste classification issued by the environmental consultant in accordance with EPA (2014a) and confirmation of this should be acknowledged on the MTS.

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 Principal Contractor and/or Civil Works Contractor.

6.8 Validation

Validation of the remedial works will be conducted by the environmental consultant to demonstrate the remediation/management objectives have been achieved and to document the final condition of the site at the completion of works such that conclusions may be drawn on the end use suitability of the site for the proposed development. Details of the validation program are provided in **Section 7**.

The environmental consultant is required to be a suitably trained and experienced in site contamination. Noting the presence of asbestos in fill at the site, the environmental consultant will also be required to be a competent person and/or Licenced Asbestos Assessor, in accordance with SafeWork NSW requirements for relevant portions of the RAP implementation.

6.9 Site Dis-establishment

On completion of the remediation works all plant/equipment and safety/environmental controls shall be appropriately decontaminated and removed from the site. Details are provided in the Site Management Plan in **Section 9**.

7. Validation Plan

7.1 General

Data will be required to be collected during remediation/management and construction works to assess the effectiveness of the implemented management actions and document the final condition of the site at the completion of all works. Such information will allow conclusions to be drawn on the end suitability of the site for the proposed use. The general principles to be implemented with regard to the validation assessment are discussed in accordance with EPA (2017) requirements in the following sections.

It is anticipated that the validation assessment will be required to address the following broad issues:

- Confirm the site conditions are consistent with those identified during previous site investigation activities as documented herein;
- Confirmation that all identified data gaps as documented herein have been appropriately characterised and any resultant impacts are addressed under the Unexpected Finds Protocol (UFP);
- Characterisation of impacted soils identified on site for off-site disposal, and verification of lawful disposal;
- Validation that soil remediation activities have been appropriately completed to the extent practicable to resolve the potential risks to future site users/occupants and ecological receptors;
- Characterisation and off-site disposal and/or beneficial use of materials excess to development requirements;
- Validation that the final site surface does not contain unacceptable aesthetic issues;
- Characterisation of material required to be imported to achieve development objectives, potentially including piling pads, subgrade material, trench aggregate, growing media, etc to demonstrate its lawful importation and suitability for use at the site; and
- Assessment and close out of any Unexpected Finds assessments.

7.2 Data Quality Objectives

Data quality objectives (DQOs) have been developed for the validation assessment, as discussed in the following sections.

7.2.1 State the Problem

Previous investigations have identified soil impacts on the site as discussed in **Sections 3** and **4** which require remediation and/or management as required, such that at the completion of works, a final validation assessment may confirm the suitability of the site for the proposed use.

As such, during remediation activities sufficient data in the form of observations, sample analytical data, material tracking records, survey data, disposal docket, etc. is required to be collected and assessed in a defensible manner to appropriately demonstrate that the identified environmental and health based risks to site users have been adequately managed to render the site suitable for the proposed land use.

7.2.2 Identify the Decision

The validation SAQP decisions have been developed by review of NEPC (2013) and EPA (2017 and 2020). As such, the decisions which are required to be made for validation of the site are as follows:

- Are there any unacceptable risks to future human or ecological site receptors from any residual contamination remaining following the implementation of remediation works at the site?

- Are there any outstanding aesthetic issues associated with contamination following remediation works?
- Are there any inconsistencies in the classification and disposal off-site of material removed to a facility/ies licensed to accept the classified waste?
- Are there any outstanding concerns associated with material imported to site to achieve development objectives (if required) being demonstrated as suitable to be lawfully imported to the site and fit for use?
- Have the site remediation activities been undertaken in compliance with the regulatory requirements set by the EPA, WorkSafe NSW, local government and other agencies?
- Have all unexpected finds been appropriately identified, assessed, documented and addressed, and have the associated residual fill/soils been considered appropriately validated in accordance with the RAP objectives?
- Have the works been completed in accordance with the RAP, or where variations to the works required by the RAP were required, have these been appropriate to meet the objectives of the RAP, with respect to site validation?
- Is the site suitable for the proposed land use either with or without any requirement for ongoing management of contamination?

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

7.2.3 Identify the Inputs to the Decision

The inputs to the decision are:

- Previous investigation results as discussed in **Section 3**;
- The proposed development and final proposed landform and site features;
- Any applicable development consent requirements;
- Field observations in relation to inspection of all existing ground surfaces, excavation bases, walls, stockpiles and final site surfaces for indicators of potential contamination, including aesthetic or asbestos impacts;
- Environmental data as collected from the validation of ground surfaces, remedial excavations and treated material pads;
- Survey information with respect to the lateral extent of the site area, the final proposed landform and site features;
- Material characterisation data obtained during assessment of contaminated material for off-site disposal;
- Disposal dockets and relevant documents in relation to appropriate disposal of material to be removed from site as part of the remediation works (landfill dockets, EPA IWTS, beneficial reuse / recycling dockets, trade waste disposal, etc.);
- Material characterisation data (including field observations, sampling and analytical data) obtained during assessment of material proposed to be imported to the site (if required) as well as the concentration limits of applicable resource recovery orders for material imported to site;
- Relevant guideline criteria for validation and waste classification; and
- Data quality indicators (DQIs) as assessed by quality assurance / quality control (QA/QC).

Specifically, sufficient data needs to be collected from the identified potentially impacted media (i.e. fill material) across the site for associated COPC (**Section 4**).

7.2.4 Define the Study Boundaries

The overall site boundaries are defined in **Section 2.1** and presented on **Figures 1** and **2**. The surrounding land uses are outlined in **Section 2.3**. The vertical extent of the works will be the maximum depth of works required to achieve remedial objectives, services infrastructure installation and/or basement/bulk excavations as applicable.

Validation works will be completed over the course of remediation works and any earthworks or civil works completed up to the time of validation.

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

Groundwater will require management during all stages of the proposed development should there be interaction between potential future basements and the groundwater table.

7.2.5 Develop the Decision Rules

The decision rules adopted to answer the decisions identified in **Section 7.2.2** are discussed below in **Table 7.1** following.

Table 7.1 Summary of Decision Rules

Decision Required to be Made	Decision Rule
1. Are there any unacceptable risks to future human or ecological site receptors remaining following from any residual contamination following the implementation of the proposed in-ground development works at the site?	Remediation areas specified in the RAP will be excavated/the subject of emu picking and resultant inspections/validation samples collected of the excavations, treated material and/or ground surfaces. Soil validation data will be compared against the validation criteria established for the site as presented in **Section 7.6**. For the validation sample sets, statistical analysis of the data will be undertaken in accordance with relevant guidance documents, as appropriate, to facilitate the decisions. The following statistical criteria will be adopted for chemical contaminant population data sets: Either: the reported concentrations will be all below the site criteria; Or: the average site concentration for each analyte will be below the site validation criterion for each chemical COPC; no single analyte concentration exceeds 250% of the adopted site criterion; and the standard deviation of the results will be less than 50 % of the site criteria. No statistical analysis will be completed for assessment of asbestos validation data. And: the 95 % UCL of the average concentration for each analyte will be below the adopted site criteria. If the criteria are satisfied, the answer to the decision is **No**. If the criteria are not satisfied, the answer to the decision is **Yes**. In this instance, further remediation works may

Decision Required to be Made	Decision Rule
	be considered prior to a repeated review of the decision to facilitate an alternate answer.
2. Are there any outstanding aesthetic issues associated with contamination following remediation works?	If the final site surface and near surface accessible soils are free of aesthetic impacts (e.g. significant odours, visual indicators of staining associated with contamination, asbestos impacts, significant presence of foreign material inclusions, etc), that may pose an aesthetic issue the answer to the decision will be **No**. Otherwise, the answer to the decision will be **Yes**, and aesthetic issues may be subject to implementation of further remedial actions.
3. Are there any inconsistencies in the classification and disposal off-site of material removed to a facility/ies licensed to accept the classified waste?	All material disposed from the site is required to be accompanied by adequate characterisation data (as appropriate) and provided with a waste classification in accordance with NSW EPA guidance. Documentation from the operation receiving the material including the dates, tonnage/volume and classification of the accepted material will be required to be reviewed to facilitate the decision. Where material has been appropriately classified and suitable documentation is provided demonstrating the lawful disposal of the material, the answer to the decision is **No**. If either a waste classification was not provided in accordance with NSW EPA guidelines and/or if receipts provided recording the disposal of material are incomplete or inconsistent with the classification, the answer to decision is **Yes**.
4. Are there any outstanding concerns associated with material imported to site to achieve development objectives (if required) being demonstrated as suitable to be lawfully imported to the site and fit for use?	Supplier documentation, supplier provided or site consultant obtained analytical data sets and inspection data will be reviewed for each proposed material type/source against established definitions for acceptable material (i.e. VENM, resource recovery orders, etc) and EPA made or approved criteria established in the RAP as validation criteria. If the supplier documentation and complete data set for the applicable material meets the requirements relevant to the material type, the answer to the decision is **No** and imported materials are considered acceptable to have been imported to site. If the supplier provided documentation is incomplete and/or the analytical data sets/inspection details are inconsistent with the requirements for characterisation of the material as suitable for importation and use (under the validation criteria), the answer to the decision is **Yes**. If all documentation has been provided AND all analytical data sets/inspection details meet the requirements of the RAP, the answer to the decision is **No**.

Decision Required to be Made	Decision Rule
5. Have the site remediation activities been undertaken in compliance with the regulatory requirements set by the EPA, WorkSafe NSW, local government and other agencies?	Qualitative assessment of the works in relation to EPA, WorkSafe NSW, Department of Planning, Council etc. approvals will be undertaken during and following the completion of remediation/management activities. If all requirements are considered to have been met with respect to the regulatory approvals, the answer to the decision will be **Yes**. Otherwise, the answer to the decision will be **No**.
6. Are there any outstanding issues associated with unexpected finds being appropriately identified, assessed, documented and addressed, or the associated residual fill/soils being validated in accordance with the RAP objectives?	If no unexpected finds are encountered, the answer to the Decision will be **No**. If unexpected finds occurred, assessment of field observations and analytical results will require to be undertaken via comparison with site validation criteria, or alternatively the material disposed of to landfill via application of procedures outlined in the RAP, or otherwise where practicable, contained on site under management. Where suitable evidence has not been documented demonstrating any/all unexpected finds have been adequately addressed, then the answer to the Decision will be **Yes**. Otherwise, the answer will be **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?	Were any of the answers to the above questions indicative of conditions whereby all issues have been resolved? If so, the answer to the decision is **Yes**. If not all the RAP requirements have been all addressed, or there remains outstanding issues, the answer to the decision is **No**. In this instance, further assessment will be required to establish the nature and extent of additional remediation/management as may be required.
8. Is the site suitable for the proposed land use either with or without any requirement for ongoing management of contamination?	Where the answer to the above Question 7 is **Yes**, and the response to Questions 1 -3 is **No**, then the answer to the decision is also **Yes**, the site is considered suitable for use without ongoing management. Alternatively, where the answers to Question 8 is **Yes**, then the decision answer is also **Yes**, subject to the suitability of proposed ongoing management measures 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.

7.2.6 Specify Limits of Decision Error

This step is to establish the decision maker's tolerable limits on decision errors, which are used to establish performance goals for limiting uncertainty in the data. Data generated during this project must be appropriate to allow decisions to be made with confidence.

Specific limits for this project have been adopted in accordance with the appropriate guidance from the NSW EPA, NEPC (2013), appropriate data quality indicators (DQIs used to assess QA/QC) and standard JBS&G procedures for field sampling and handling.

To assess the usability of the data prior to making decisions, the data will be assessed against pre-determined DQIs) established for the project as discussed below in relation to precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS parameters). The acceptable limit on decision error is 95% compliance with DQIs.

The DQIs and data assessment criteria are summarised as presented in **Table 7.2**.

- **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.
- **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.
- **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 site, and by using an adequate number of sample locations to characterise the site 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; 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 field and laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted site assessment criteria.

Table 7.2 Summary of Quality Assurance / Quality Control Program

Data Quality Indicators	Frequency	Data Quality Criteria
Precision		
Blind duplicates (intra laboratory)	1 / 20 samples – heavy metals, TRH/BTEX, PAHs, VOCs, OCPs/PCBs, asbestos 1 / 10 samples – PFAS (as per HEPA 2025)	<50% RPD[1] Asbestos detection or non-detection agreement with primary sample
Blind duplicates (inter laboratory)	1 / 20 samples – heavy metals, TRH/BTEX, PAHs, VOCs, OCPs/PCBs, asbestos 1 / 10 samples – PFAS (as per HEPA 2025)	<50% RPD[1] Asbestos detection or non-detection agreement with primary sample
Laboratory Duplicates	1 / 20 samples for all chemical analytes	<50% RPD[1]
Accuracy		
Surrogate spikes	All organic samples	PFAS: 50-150% Other: 70-130%
Laboratory control samples	1 per chemical analysis lab batch	PFAS: 50-150% Other: 70-130%

Data Quality Indicators	Frequency	Data Quality Criteria
Matrix spikes	1 per chemical analysis lab batch	70-130%
Representativeness		
Sampling appropriate for media and analytes	All samples	-[2]
Samples extracted and analysed within holding times.	-	VOCs – 7 days TRH/BTEX/PAHs/OCPs – 14 days Heavy metals/PCBs/PFAS – 28 days Asbestos – no holding time
Trip spike	1 per chemical analysis sampling event	70-130% recovery
Trip blank	1 per chemical analysis sampling event	<LOR
Rinsate blank	1 per chemical analysis sampling event when non-disposable sampling equipment used	<LOR
Field Blank	1 per sampling event, PFAS only	<LOR
Comparability		
Standard operating procedures for sample collection & handling	All Samples	All samples
Standard analytical methods used for all analyses	All Samples	All samples
Consistent field conditions, sampling staff and laboratory analysis	All Samples	All samples[2]
Limits of reporting appropriate and consistent	All Samples	All samples[2]
Completeness		
Sample description, field purging/sampling notes and COCs completed and appropriate	All Samples	All samples[2]
Appropriate documentation	All Samples	All samples[2]
Satisfactory frequency and result for QC samples	All QA/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 site assessment criteria	All Analytes	All limits of reporting less than the adopted site validation 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.

If any of the DQIs are not met, further assessment will be necessary to determine whether the non-conformance will significantly affect the usefulness of the data. Corrective actions may include requesting

further information from samplers and/or analytical laboratories, downgrading of the quality of the data or alternatively, re-collection of the data.

7.2.7 Optimise the Design for Obtaining Data

The purpose of this step is to identify a resource-effective field validation sampling design that generates data that are expected to satisfy the decision 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 site remediation activities to demonstrate the successful completion of works in compliance with the RAP goals. The validation/characterisation sampling and analytical program for the site is outlined in the sections below.

7.3 Validation Inspection, Sampling and Analyses

The proposed soil validation sampling, quantification and analytical program to be undertaken by the consultant is outlined in **Table 7.3**.

Table 7.3 Validation Analytical Schedule

Validation Area	Sampling Frequency	Analysis
Excavation formed by the removal of lead and/or chromium impacted soil	1 validation sample per 10 m linear of wall and 1 m depth, 1 validation sample per 100 m^2 area for the base, with a minimum of one per wall and one base sample per excavation	Lead Chromium
Excavations formed by the removal of asbestos contaminated areas (friable and non-friable)	1 validation sample per 10 m linear of wall and 1 m depth, 1 validation sample per 100 m^2 area for the base with a minimum of one per wall and one base sample per excavation	Visual inspection of surfaces by LAA or competent person 10L field asbestos quantification (AQ) Asbestos (500ml samples in accordance with WA DOH 2009 guidelines)
Building Footprint Validation	1 validation sample per 20 m grid area for the base 1 validation sample per 10 m linear of wall and 1 m depth (if present)	10L field AQ, asbestos (500ml), OCPs and lead – all samples PCB – 50% of samples
Temporary Stockpile Footprints (where area is unpaved)	1 validation sample per 25 m^2 area, with a minimum of two samples per stockpile footprint	Samples to be analysed for COPCs associated with the stockpiled material
Emu picking pads	1 validation sample per pad	Visual inspection by LAA or Competent Person Asbestos (500ml)
Characterisation of contaminated material requiring off-site disposal as waste	As per EPA (2022) sampling design guidelines: 1 sample per 25 m^3, with a minimum of 3 samples. For stockpiles >200 m^3, samples may be collected at a reduced frequency subject to a 95 % UCL calculated for all applicable analytes.	Heavy metals, TRH/BTEX, PAHs, OCPs/PCBs, asbestos (500 mL), and PFAS. VOCs (as required) TCLP as required

Validation Area	Sampling Frequency	Analysis
	Existing data will be used where/if possible.	
Stockpiles to be reused on site	As per EPA (2022) sampling design guidelines: 1 sample per 25m^3, with a minimum of 3 samples. For stockpiles >200m^3, samples may be collected at a reduced frequency subject to a 95% UCL calculated for all applicable analytes. Existing data will be used where/if possible.	Heavy metals, TRH/BTEX, PAHs, OCPs/PCBs, asbestos (500 mL) and PFAS OR As per source area contaminants of concern
Excavations formed by non-asbestos related Unexpected Finds	1 validation sample per 10 m linear of wall and 1 m depth, 1 validation sample per 100 m^2 area for the base with a minimum of one per wall and one base sample per excavation	Dependant on the nature of the unexpected finds (TBC by the supervising Environmental Consultant)
Materials Importation		
Imported VENM material	If adequate documentation is not available, minimum of 3 samples per source site / material type to 500 m^3 then 1 sample per 500 m^3 thereafter	Heavy metals, TRH/BTEX, PAHs, OCPs/PCBs, PFAS and asbestos (500 mL). Scr / sPOCAS as required for ASS
Quarried Materials (e.g. aggregate, sandstone, shale)	Confirmation that the material is quarried material prior to importation, and visual confirmation.	n/a
Material subject to a NSW EPA Resource Recovery Order/Exemption	Confirmation by the supplier that the material meets the terms of the order. Where appropriate, environmental consultant sampling at a minimum of 3 samples per source site / material type to 500 m^3 then 1 sample per 500 m^3 thereafter, prior to importation.	Analytes dependent upon EPA exemption or source site characteristic. Samples should include as a minimum TRH/BTEX, PAHs, heavy metals, OCPs/PCBs, PFAS, and asbestos (500 ml)

7.4 Validation Requirements

7.4.1 Validation and Soil 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 7.2**.

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 (NATA) accredited laboratory under Chain of Custody (COC) protocols.

The decontamination of personnel, personal protective equipment (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 of samples. Where dedicated disposable sampling equipment cannot be used, non-dedicated sampling equipment will be scrubbed and washed in Decon 90/Liquinox solution and rinsed with de-ionised water. Disposable equipment will not require decontamination and reuse (i.e. nitrile gloves).

7.4.2 Excavation Validation – Heavy Metal Impacted Fill

Validation excavations resultant from the removal of heavy metal impacts shall be undertaken in accordance with the following process:

- Identification of the exceedance location, 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 suitably trained and experienced environmental consultant to confirm the extent of potentially impacted materials have been removed. If additional potentially impacted material is identified, further excavation will be conducted and the affected area will be re-inspected until such time as visual validation is obtained.
- Judgemental sampling of excavation walls at the rate specified in **Table 7.3**;
- Analysis of soil samples for COPCs relevant to the validation assessment;
- Comparison of soil analytical results with validation criteria (**Section 7.5**); and
- If the individual concentration or 95 % UCL mean (where appropriate) of COPCs exceed the criteria, then the area of impact will be the subject of additional works prior to a repeat of the validation process. Alternatively, where impact exceeding criteria is not identified by the laboratory, the remedial areas will be deemed to have been successfully remediated and validated.

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.

7.4.3 Excavation Validation – ACM Impacted Fill

Validation excavations resultant from the removal of asbestos impacts 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 excavation base and walls by a Competent Person or LAA (where AF/FA is present). If any asbestos or 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;
- Systematic sampling of excavation walls, where present, at the rate specified in **Table 7.3**;
- Analysis of soil samples for COPCs relevant to the validation assessment;

- Comparison of soil analytical results with validation criteria (**Section 7.5**); and
- If the concentration of COPCs in any of the excavation validation samples exceed the criteria, then the area of impact will be the subject of additional works prior to a repeat of the validation process. Alternatively, where impact exceeding criteria is not identified by the laboratory, the remedial areas will be deemed to have been successfully remediated and validated.

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.

7.4.3.1 Asbestos Quantification Sampling

Where assessment of the quantity of asbestos in soil is required for comparison with validation criteria, consistent with NEPC (2013) guidance, bulk soil samples (minimum 10 L) will be collected at each sampling location for material from each 1m depth interval/fill profile.

The collected bulk sample will be sieved in the field (≤7 mm passing) or spread out on contrasting plastic, and separated fragments retained and weighed. The asbestos concentration as ACM in soil will be calculated in accordance with NEPC (2013) and based on the weight of collected fragment/s (assuming 15% asbestos content) divided by the weight of the collected 10 L soil sample, providing a w/w%. A log for each sampling location will be recorded, noting the presence (and type) or absence of observable asbestos (ACM or friable asbestos), soil description, borehole dimensions, volume of soil sampled at each depth, and other observable indicators of contamination.

A 500 mL soil sample will be collected from the bulk sample, labelled and sent to the laboratory for asbestos analysis according to NEPC (2013) protocol.

Calculation of Bonded ACM and FA Concentration

Asbestos percentage will be calculated as per the formula below:

$$\%\frac{w}{w}\ asbestos\ in\ soil = \frac{\%\ asbestos\ content\ \text{x}\ (bonded\ ACM\ or\ FA)(kg)}{soil\ volume\ (L)\ \text{x}\ soil\ density\ (\frac{kg}{L})}$$

For bonded ACM, an asbestos content of 15% will be used, in accordance with enHealth (2005[8]).

For FA, a conservative asbestos content of 100% will be used.

7.4.4 Validation of Surficial Asbestos Impacts

Following removal of the identified surficial asbestos impacts, validation of the ground surface and/or excavated area or stockpiled material footprints will comprise a site walkover at 1 m spaced transects in two perpendicular directions to inspect the site 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 of 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] *Management of Asbestos in the Non-Occupational Environment*, EnHealth Council, 2005 (enHealth 2005)

7.4.5 Stockpile Footprint Validation

Where temporary 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 successful visual validation, soil samples will be collected from the footprint on a 10 m grid, and analysed in accordance with **Table 7.3**, based on the material type previously stockpiled; and
- If contamination is identified in a validation sample at concentrations above the site validation criteria, the soil represented by the failed validation sample will require to be scraped, 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.

7.4.6 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 and/or ground surface as relevant 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.

7.4.7 Imported Material Validation

Imported material source site documentation will be reviewed initially following which the site 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 site criteria. Alternatively, 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 site is validated.

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 site.

Sampling requirements for all non-quarried materials are detailed in **Table 7.3**.

7.4.8 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 site validation purposes.

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

7.4.9 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 8.1**.

Samples will be collected and analysed in accordance with the analytical schedule (**Table 7.3**) 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.

7.4.10 QA/QC Requirements

Field duplicate and triplicate samples for the characterisation/validation assessment will be obtained during soil sampling using the procedures outlined at a frequency outlined in **Table 7.2**. The primary samples 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 / plastic bags. Jars will be filled completely with no headspace to reduce the potential for loss of volatiles. Samples will be separately labelled as the primary, duplicate and triplicate samples before being placed in the same chilled esky for laboratory transport.

Trip spike and/or storage blank samples will be collected where analysis for volatile compounds and/or PFAS is required. Rinsate samples will be collected where reusable equipment has been utilised during sampling.

For water samples, the collected samples will be divided laterally into three samples with minimal disturbance to reduce the potential for loss of volatiles and placed in pre-preserved bottles as appropriate for the contaminant analysis.

7.4.11 Laboratory Analysis Methods

All laboratories to be used for the analysis of primary and secondary samples obtained during the remediation works 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 noting that the LORs will be required to be less than the validation criteria.

7.5 Validation Criteria

7.5.1 Soil Validation Criteria

It is anticipated that the site will be redeveloped for high density residential land use with areas with gardens and accessible soils. The NEPC (2013) definition of HIL-A is therefore most applicable, as HIL-B does not account for complete exposure pathways that are likely to be present on the site in areas of landscaping.

For PFAS, validation criteria have been adopted with regard to HEPA (2025) guidance, noting that site specific adjustment of the health based validation criterion is proposed given that it has been assumed that whilst occupants/visitors will have access to landscaped areas of the site, inclusive of dermal contact with soils, the land use scenario has excluded the production of food within site soils for the purposes of establishing site PFAS compound health based criterion. This condition will require to be written into property/facilities management rules as associated with future use of landscaped common property. The

proposed validation criteria are presented against the current site characterisation data set in **Table A** (**Appendix B**).

Where there are no NSW EPA made or approved thresholds, the laboratory LOR will be adopted as an initial screening value for the purposes of the validation assessment.

Reference will be made to NEPC (2013) under the adopted land use setting to establish what constitutes an aesthetics issue. It is anticipated that the criteria will comprise significant proportions of non-soil inclusions comprising, but not limited to:

- materials that may cause injury to people, including metal, glass or other sharp objects;
- Visible ACM present at concentrations below the adopted HSL A criteria of 0.01 % w/w; and/or
- Building and demolition materials such as concrete, brick, terracotta and plastic;

The presence of soil discolouration/staining associated with chemical causes and/or the presence of large quantities and/or odorous or otherwise unpleasant olfactory characteristics of soils will also be considered with regard to aesthetic characteristic concerns.

7.5.2 Waste Classification for Off-Site Disposal

Where contaminated fill/soil is not suitable for onsite management or is surplus to construction requirements, materials are proposed to be remediated by off-site disposal. Contaminated soils to be disposed off-site require a waste classification in accordance with EPA (2014) *Waste Classification Guidelines Part 1: Classifying Waste* and the *Addendum to the Waste Classification Guidelines (2014) – Part 1: classifying waste* (EPA 2016), or an appropriate Resource Recovery Order as created under the *Protection of the Environment Operations (Waste) Regulation 2014*.

7.5.3 Imported Materials

In accordance with current EPA policy, only material that does not represent an environmental or health risk at the receiving site may be considered for resource recovery. Imported materials required for the remediation works will only be accepted on the site if they meet this restriction 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 a Resource Recovery Order/Exemption issued by the EPA.

Imported materials for civil works and not relating to remediation are not considered in this RAP, but should also be demonstrated as environmentally suitability in accordance with NSW legislation including requirements of the NSW Resource Recovery Framework. Quarried products are also considered suitable for use at the site, subject to review of source site documentation.

All material imported onto the site is required to be accompanied by appropriate documentation that has been verified by the appointed site contamination (environmental) consultant. All materials will be required to be inspected upon import to the site by the 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 RRO (e.g. ENM) is required to be undertaken by the facility in accordance with the relevant Order to demonstrate the material may lawfully be reused. In addition, where materials are proposed for beneficial reuse under a NSW EPA exemption (i.e. imported to the site), such fill material will need to be further assessed by an environmental consultant to demonstrate the material is suitable for importation to the site prior to placement (ie. addressing site COPCs in addition to those associated with the RRO).

7.5.4 Statistical Criteria

Statistical analysis of the data will be completed, where appropriate, in accordance with relevant EPA made or approved guidance, to facilitate data assessment. The statistical criteria applicable to each population data set will be applied during validation data assessment :

Either:

- the reported concentrations are all below the site criteria;

Or:

- no single analyte concentration exceeds 250 % of the adopted site criterion;
- the standard deviation of the results is less than 50 % of the site criterion; and
- the 95 % UCL of the average concentration for each relevant analyte is below the adopted site criterion.

Statistical assessment will not be undertaken for asbestos in soil.

7.6 Validation Reporting

At the completion of the remedial works at the site a Validation Report will be prepared in general accordance with the NSW EPA *Guidelines for Consultants Reporting on Contaminated Land* (EPA 2020) requirements, documenting the works as completed. This report will contain information including:

- Update relevant portions of the site description and CSM as prepared in this RAP to the condition of the validation assessment footprint at the time of the validation assessment;
- Present all sampling field notes and laboratory data including calibration certificates for field monitoring equipment, environmental monitoring etc.;
- Undertake an assessment of QA/QC of analytical data generated by the works and identify data that are reliable for use in characterising the site;
- Sort data into data sets as required by the decision rules;
- Assess whether sufficient data have been obtained to meet required limits on decision error;
- Undertake assessment to the decision rules;
- Provide a summary of waste disposal/off-site removal activities and volumes of material removed from the site including supply of all waste disposal dockets confirming final waste disposal/landfill destination;
- Provide a summary of material imported to site for remediation including material source, type, assessment of suitability, approximate quantities, date of importation and final placement location;
- Details of the remediation works conducted;
- Information demonstrating that the objectives of the RAP have been achieved, in particular the validation sample results and assessment of the data against both the pre-defined data quality objectives and the remediation acceptance (validation) criteria;
- Information demonstrating compliance with appropriate regulations and guidelines;
- Document any variations to the strategy undertaken during the implementation 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;

- Other information as appropriate, including requirements (if any) for ongoing monitoring / management; and
- Provide a comment on the suitability of the site for the proposed use and requirements for any ongoing monitoring/management (where applicable).

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

8. 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 part of an Unexpected Find during remediation and/or earthworks/construction works, the remedial options screening matrix in **Table 5.1** will be reviewed. Notwithstanding, due to the site history it is anticipated that any additional impacts will likely be consistent with those previously identified in areas of the site and given the existing sampling spacing are expected to be relatively isolated and could be appropriately managed through controlled excavation and off-site disposal.

8.1 Unexpected Finds Protocol

It is acknowledged that previous works have been undertaken to identify contaminants of potential concern. However, ground conditions between sampling points may vary, and further hazards may arise from unexpected sources and/or in unexpected locations during remediation. The nature of any residual hazards which may be present at the site are generally detectable through visual or olfactory means, for example:

- Asbestos and other contamination encountered outside the extent of known impacts, such as from hazardous building materials including asbestos and lead-based paints in building footprints following demolition;
- Petroleum contaminated soils (staining / discolouration visible);
- Construction / demolition waste (visible) outside the known extent;
- Bottles / containers of chemicals (visible);
- Other previously unidentified contaminated soils / fill materials (visible).

As a precautionary measure to ensure the protection of the workforce and surrounding community, should any of the abovementioned materials be identified (or any other unexpected potentially hazardous substance), the procedure summarised in **Figure 8.1** and detailed in the following sections is to be followed.

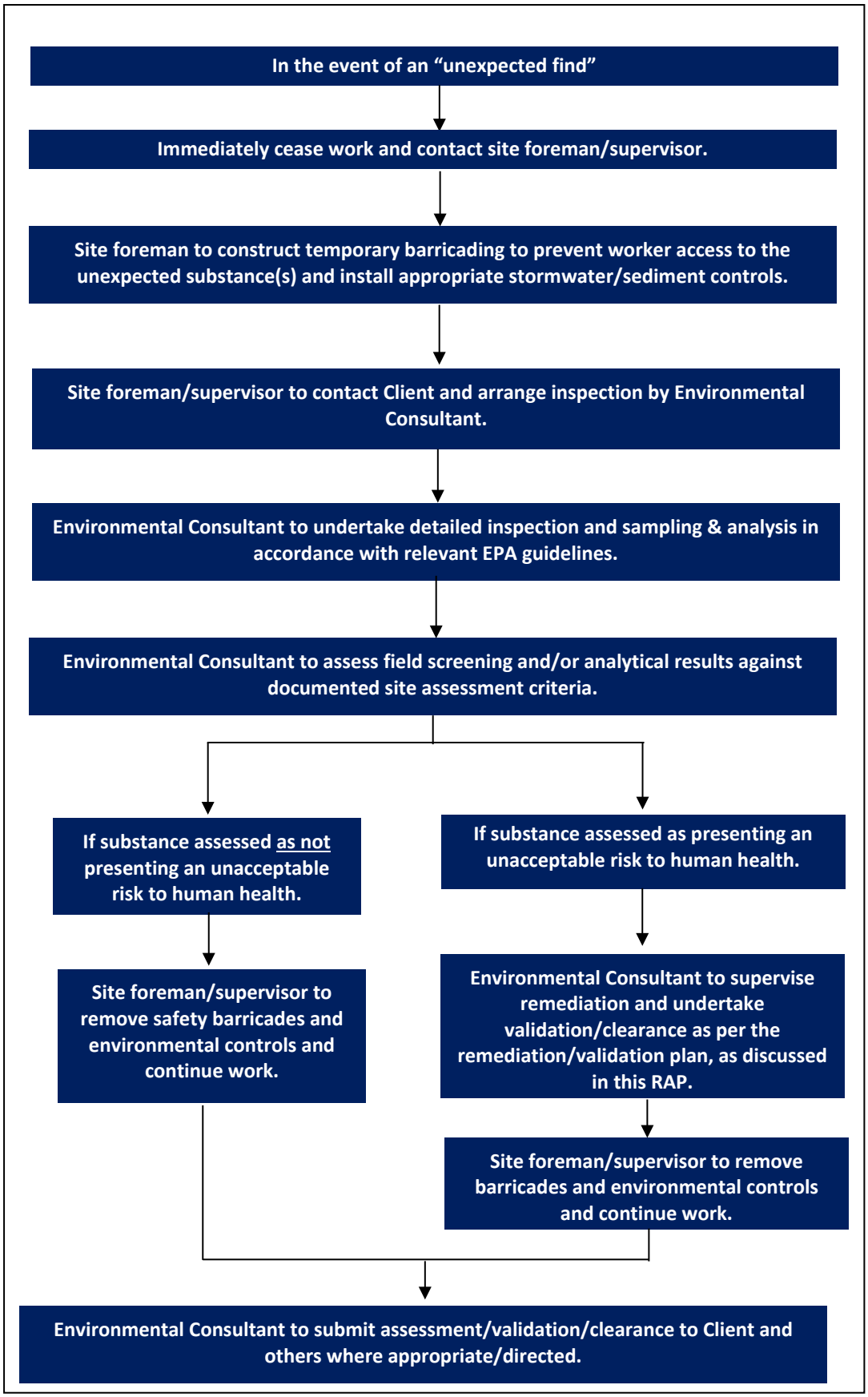
An enlarged version of the unexpected finds protocol, suitable for use on site, should be posted on site by the Client or Contractor.

The sampling strategy for each “unexpected find” shall be designed by a suitably qualified environmental consultant and should aim to determine the nature of the substance and whether it is 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 EPA (2022).

Where the preferred or contingent remedial strategies presented in this RAP may not be feasible based on assessment of an unexpected find, an alternate remedial strategy will require documentation, including any additional/alternate site management controls and validation requirements.

Figure 8.1 – Unexpected Finds Protocol



8.2 Contingency Scenarios

8.2.1 Change in Development Plans

In the event that the development plans are significantly changed from those available at the time of preparation of this RAP, consideration of the suitability of the proposed remediation strategy will be required. Any changes to the development plans must be considered with respect to the assumptions of the CSM and where the assumptions are no longer satisfied, further evaluation of the suitability of the preferred remedial approach must be undertaken.

8.2.2 Remedial Strategy Failure

In the unforeseen event that the proposed remediation works do not meet the validation criteria, or if the selected remedial strategy is unsuccessful, possible 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. Reassessment of remedial options for excavations may include:

- Continued controlled excavation and off-site disposal until validation is achieved; and/or
- Alternate on-site treatment options; and/or
- On-site containment of non-leachable contaminated soils.

8.2.2.1 On-site Containment of Impacted Soils (Contingency)

Where the potential for on-site containment of in-situ material is identified as feasible, it is anticipated that such works would be implemented in conjunction with civil works to establish proposed development levels and installation of new site infrastructure, with final capping arrangements to be completed with either the overlying structure pavements or alternatively, the landscaping works, which will comprise a portion of the cap.

Where the strategy requires the movement of contaminated material from its current location to the proposed area of containment, the following will require to be implemented:

- The contractor will commence excavation of the material required to be relocated under the supervision of the environmental consultant. Environmental Consultant to complete validation inspection and sampling of the resultant excavation as required;
- Where feasible, material may be encapsulated in-situ without the need to excavate, relocate and validate the resultant excavation. The lateral extent of the impacted material must be investigated and confirmed to ensure all materials are appropriately encapsulated.
- Visual inspection will be undertaken by the Environmental Consultant to verify the suitable installation of the marker layer across required areas;
- Material to be used as a capping layer must be validated by the Environmental Consultant as environmentally suitable (see **Section 6.6**). Contaminant concentrations in any capping layer material must not exceed the adopted site validation criteria for soils;
- The capping layer must be placed at an appropriate thickness to be determined by the Environmental Consultant;
- In all areas where cap and containment has been implemented, the Remedial Contractor must provide a survey of the placed marker layer and capping layer prepared by a registered surveyor that demonstrates the lateral and vertical extents of each layer; and
- At the conclusion of remediation/validation works, should contaminated material be the subject of retention on-site under permanent capping arrangements, a long-term environmental management plan (LTEMP) will be prepared according to the requirements outlined *NSW EPA Guidelines for the*

NSW Site Auditor Scheme (3rd edition) (NSW EPA 2017) to detail the required measures to ensure the continued suitability of the site for its proposed use.

8.2.3 Groundwater Dewatering

If groundwater is encountered during redevelopment works that will require dewatering, a dewatering license shall be obtained in accordance with the *Water Management Act 2000*. The license must be obtained prior to the installation of the dewatering system. The license application must be submitted to the WaterNSW, and a Dewatering Management Plan should be included as part of the submitted licence application.

It is noted that excavation dewatering may require treatment prior to disposal, potentially including pH correction, sediment concentrations and potentially chemical contaminants. Procedures for treatment and validation of water will be documented in the Dewatering Management Plan. Sampling and analysis to assess potential groundwater management during (and potentially following) dewatering should be informed by the existing site groundwater characterisation data results.

It is anticipated that Council as the regulatory authority for discharge from the site, will require that no wastewater, chemicals or other substances harmful to the environment shall be permitted to discharge to Council's stormwater system. Only clean, unpolluted water is permitted for discharge. Wastewaters not suitable for discharge to stormwater must be the subject of on-site treatment to address contaminant concentrations prior to stormwater disposal, disposed of using a licensed liquid waste contractor or alternatively directed to the sewer of the Sydney Water Corporation (SWC) under a Trade Waste Agreement (TWA). The pre-treatment of wastewater may be a requirement of SWC prior to discharge.

8.2.4 Materials 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 Remediation Environmental Management Plan, REMP (**Section 9.2**) shall include a documented process for identifying and responding to such incidents.

8.2.5 Emissions Complaints

Due to the nature of the activities and type of contaminants identified within the site, there is a low potential for complaints to be received from members of the public and/or occupants of surrounding properties relating to environmental emissions including:

- Odour emissions arising from handling of malodorous soil (if encountered);
- Noise and vibration arising from excavation, piling and other works;
- Dust emissions arising from excavation, material handling and placement; and
- Visibly impacted water quality in surface water discharge from the site.

Monitoring of all environmental emissions shall be undertaken during the works as detailed in the REMP (discussed in **Section 9.2**) and appropriate actions taken to further control emissions following receipt of a complaint. The REMP shall contain provision for contingency actions where excessive emissions occur, however it is anticipated that one or more of the following actions will be considered:

- Increased application of odour screening/masking chemicals on odorous materials (as required);
- Disturbance of soils during meteorologically favourable periods only; and/or
- Covering of impacted soils.

9. Site Management Plan

This section contains procedures and requirements that are to be implemented as a minimum requirement during the remedial works at the site. Please note that the procedures outlined in the following sections may require to be updated to reflect any future conditions of consent for the development and are mainly applicable during ground disturbance/soil excavation activities during site development works.

9.1 Contact Persons

Contact details for key personnel involved in remediation and validation works are summarised in **Table 9.1**.

Table 9.1 Contact Details

Client Supervisor / Manager	Details
Name	To be advised
Company	To be advised
Address	To be advised
Contact Phone	To be advised
Remediation Contractor	**Details**
Name	To be advised
Company	To be advised
Address	To be advised
Contact Phone	To be advised
Environmental Consultant	**Details**
Name	To be advised
Company	To be advised
Address	To be advised
Contact Phone	To be advised

9.2 Environmental Management Plan

9.2.1 Preparation of a REMP

Prior to commencement of any ground disturbance works, a site specific REMP shall be prepared by the Principal Contractor (or its appointed civil works contractor), which documents the environmental monitoring and management measures required to be implemented during the remediation and construction related activities associated with the construction of development.

The REMP shall address each of the nominated items in the following section and shall include the relevant portions of the Contingency Plan and UFP, referred to in **Section 8** above.

9.2.2 Required Elements/Procedures

An assessment of the proposed activities and the associated elements required to be incorporated into the REMP is provided in **Table 9.2**. The REMP is required to address each of the required elements and procedures in full detail and to include detailed monitoring processes and procedures, corrective actions and reporting requirements. Following confirmation of the Development Consent details, any additional terms and conditions not discussed below should be incorporated in the REMP.

Table 9.2 Minimum Elements to be Addressed in the REMP

Element	Specific Minimum Requirements to be included in the REMP
Dust and Airborne Hazard Control	Asbestos air monitoring (as required) the requirements of which are discussed in **Section 10.4**. Provisions for dust control based on real time monitoring results Overall, the control measures, monitoring requirements and acceptance limits / criteria to be met to prevent potential adverse impacts to the health and safety of surrounding human and ecological receptors.
Visual Impacts	Visual monitoring at site boundary. Specific colour requirements for various controls/measures, including PPE, signage etc.
Emergency Response	As appropriate. Procedures required for spill incident response including material storage breach and potential unexpected finds (as applicable).
Noise Control	Hours of operation, consistent with the consent conditions. Boundary monitoring at commencement of work site activities with potential for environmental noise emissions. Potential noise monitoring at nearest receptors. Procedures for control and management of noise emissions, as appropriate (e.g., restricted hours). Reference should be made to Consent Conditions with regards to control measures, noise criteria, hours during which noisy works can occur and any Council/ Community liaison requirements. Overall, the control measures, monitoring requirements and acceptance limits / criteria to be met to prevent potential adverse impacts to the health and safety of surrounding human and ecological receptors.
Traffic	Controls on vehicle movements on public roads, including consideration of pedestrian movements. Reference should be made to Consent Condition requirements including loads covering and vehicle cleaning requirements
Protection of Adjoining Structures	As appropriate and in accordance with any Consent Conditions (where relevant).
Odour Control	No odours should be detectable at the site boundary. Controls on odour generating activities. Equipment and machinery will be adequately maintained to minimise exhaust emissions.
Handling of Contaminated Soil and Sediment and Water	Soil and water management (stockpiling, site access, excavation pump out, reinstatement). Reference should be made to DA conditions. No wastewaters, chemicals or other substances harmful to the environment shall be permitted to be discharged to the environment or the stormwater system. Only unpolluted water is permitted to discharge from the site.
Soil Storage/Placement Areas	Soil and water management (stockpiling, site access, excavation pump out, reinstatement). Bunding. Heavy vehicle/personnel decontamination. Interim storage requirements for materials requiring later treatment. Site drainage requirements, incorporating clean/dirty areas and modifications to existing surface water and drainage controls beneath retained pavements.

Element	Specific Minimum Requirements to be included in the REMP
	Monitoring as required.
Sediment Control	Bunding. Collection/treatment/handling impacted sediments. Reference should be made to DA conditions.
Operation of Site Office and Amenities	As appropriate.
Decontamination of Heavy Equipment	As appropriate, reference should be made to DA conditions.
Environmental Monitoring	Monitoring of dusts, noise, odour and fibres as applicable. Monitoring as required for vibration and water releases. Inspection checklists and field forms. Reference should be made to DA conditions.
Environmental Criteria	Soil and groundwater criteria as sourced from RAP.
Material Classification	As detailed in this RAP which includes NSW EPA and Consent authority requirements. Materials tracking, including QA/QC, inspection, and sampling.
Community Relations Plan	Refer to project specific communication commitments, incorporating nomination of specific contact persons, and details and requirements for communications/response register. Reference should be made to DA requirements.
Incident Reporting	As appropriate, including standard form/checklist.
Security and Signage	Secure site perimeter. Site boundary signage. Reference should be made to DA requirements.
REMP Review	As appropriate.
Training	As appropriate.
Contact Details	Company/personnel details, including names/phone numbers for: - Principal Contractor - Site Auditor (if required) - Environmental Consultant - Remediation Contractor - WH&S Compliance - Environmental Compliance
Chemical Storage or dispensing (e.g., refuelling of plant)	If applicable, as part of construction related activities. Procedures may be required for chemical handling, storage and spill incident response.

9.2.3 REMP Endorsement

The Contractor is required to have the REMP reviewed and endorsed as acceptable by the environmental consultant prior to the commencement of remediation works.

A copy of the REMP and the endorsement to the satisfaction of environmental consultant are required to be provided by the Principal Contractor to the client and its representatives prior to commencement of remediation works.

9.2.4 Hours of Operation/Duration of Works

Remediation works shall be completed in accordance with the permissible hours of work and noise as nominated in of the Development Consent.

The Principal Contractor will be required to include a proposed schedule of remediation works within the REMP submitted for endorsement as discussed above.

9.3 Soil and Water Management

All works shall be conducted in general accordance with Soils and Construction Managing Urban Stormwater Standards (Landcom 2004) or as updated, which outlines the general requirements for the preparation of a soil and water management plan.

To prevent the migration of impacted soil offsite, silt fences shall be constructed at the down-gradient site boundaries by the Remediation Contractor.

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

9.4 Stockpile Management

All materials stockpiled onsite should be managed by the Remediation Contractor. Unique numbers should be provided for each stockpile, the source of the stockpile, its volume, material characterisation and its location onsite recorded.

The following procedures should be implemented by the Remediation 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 drainage lines gutters or stormwater pits or inlets;
- All stockpiles of soil or other materials likely to generate dust or odours shall be covered (where practical);
- 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;
- If left for a period exceeding 24 hours, stockpiles shall be covered, wetted down or be subject to application of stabilising agent to prevent dust generation. Additionally, where rain is forecast (>10 mm/24 hr period), the stockpiles shall be bunded to prevent leachate generation; and
- Stockpiles should be routinely inspected (at least daily) to ensure that containment provisions are adequate. Contingency measures are provided in **Section 9.2**.

9.5 Dust Control

During the remedial works, the potential for dust emissions will be managed such that no emissions will occur beyond the site boundary. The following dust control procedures may be employed to comply with this requirement:

- Erection of dust screens around the perimeter of the site;
- Ensuring vehicles leave via the designated (stabilised) site access and all equipment have dust suppressors fitted by the Contractor.
- Securely covering all loads entering or exiting the site;

- Use of water sprays across the site to suppress dust;
- A wetting or bonding agent may be used to further bind the soil to minimise asbestos fibre release;
- Covering of all stockpiles of contaminated soil remaining more than 24 hours (where practical); and
- Keeping excavation surfaces moist.

Further, 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.

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

Meteorological conditions will be monitored by the environmental 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.

9.6 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 site vehicles must leave the site 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 site. 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.

9.7 Community Consultation

Owners and/or occupants of premises adjoining and across the road from the site will be notified at least 7 days prior to the commencement of site remediation works. This shall at least include:

- The details of an appropriate contact person;
- 'Layman' descriptions of the type of contaminants present and the remediation proposed;
- Details of the proposed environmental monitoring program; and
- A general description of potential nature and extent of environmental emissions that may occur from the site works.

A Complaints Register shall be additionally maintained by the contractor during the works. This shall include documented procedures for responding to community complaints.

Complaints from adjoining site occupants or workers on site will be directed initially to the civil/remediation contractor on site. Following that, discussion with the client and the environmental consultant (if relevant), and the complaint investigated and the issue remedied as required or as best able to be addressed.

9.8 Site Security

The site/remedial areas shall be secured against unauthorised access by means of an appropriate fence by the contractor.

10. Health and Safety Plan

This health and safety plan contains procedures and requirements that are to be implemented as a minimum during the remediation works. However, it is recommended that a Work Health and Safety Management Plan (WHSP) is prepared to document the procedures to be followed and manage the risks associated with the remediation works.

The objectives of the health and safety plan are:

- To apply standard procedures that reduce risks resulting from the above 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 and mandatory safety practices and procedures; and
- Provision for contingencies that may arise while operations are being conducted at the site.

This health and safety plan does not provide safety information specific to construction or excavation activities carried out by contractors, such as the safe operation, maintenance and inspection of plant, etc. Contractors will be required to prepare their own Safe Work Method Statements for their work activities. All parties working on the site shall comply with all applicable Health and Safety legislation, regulations, codes and guidelines.

10.1 Responsibilities

Remediation Supervisor

The remediation supervisor is responsible for ensuring that the work is carried out in accordance with the health and safety plan. This will include:

- Ensuring all works are undertaken as per the RAP and in accordance with appropriate instruction from the client supervisor/manager and environmental consultant;
- Ensuring all works are undertaken in accordance with appropriate regulations and standards;
- Ensuring all works are undertaken as per the health and safety plan;
- Ensuring a copy of the health and safety plan is available at the site during the remediation/validation activities;
- Confirming individuals are competent in performing allocated tasks;
- Liaison with the contractor representatives, as appropriate, regarding safety matters; and
- Investigation and reporting of incidents and accidents.

Environmental Consultant

The environmental consultant is responsible for:

- Undertaking remediation and validation sampling as per the RAP;
- Ensuring consultant works are undertaken as per the health and safety plan;

- Liaison with the contractor representatives, as appropriate, regarding safety matters; and
- Undertaken air monitoring, validation, and reporting as per the RAP.

Other Members of the Site Workforce

Every individual worker is responsible for conducting their allocated tasks in a safe manner and in accordance with their training and experience. They must give due consideration to the safety of all others in their proximity and cooperate in matters of health and safety. All workers must leave their work areas in such a condition that the location will not be hazardous to others at any time.

10.2 Hazards

Job Risk Assessments (JRAs) and Safe Work Method Statements (SWMS) will need to be supplied by the Remediation Contractor and incorporated into the Health and Safety plan detailing all the known or potential hazards associated with the work activities, some are listed below.

10.2.1 Inhalation Hazards

The main inhalation hazards from the remediation/validation works are consequent of the presence of asbestos.

Measures are required to be put in place to prevent/ minimise the generation of airborne fibres. These have been described in the environmental controls for the works. Where there is a potential for airborne emissions to be generated, personal protective equipment (PPE) shall be required to be worn to prevent potential exposure, as described in **Section 10.3**.

10.2.2 Chemical Hazards

In addition to the previously identified asbestos hazards, chemical hazards may be identified at the site during remediation activities (e.g. hydrocarbon impacts).

When working with contaminated materials in general, care must be taken to ensure that the contamination is not introduced to the worker via ingestion, inhalation or dermal absorption. PPE and decontamination requirements related to asbestos remedial works and summarised in **Sections 10.3** and **10.5** are sufficient for managing any potential exposure to hydrocarbons or VOCs in soils.

10.2.3 Physical Hazards

Operating Machinery

Heavy plant and equipment operating in the vicinity of field personnel presents a risk of physical injury. Personnel should be cognisant of their position in relation to operating machinery at all times.

Never walk behind or to the side of any operating equipment without the operator's knowledge. Do not assume that the operator knows your position. Personnel should stay at least 1 m from the operational area of heavy equipment and should not stand directly below any load or piece of equipment (e.g. backhoe/excavator).

Work In or Near Excavations

All excavations shall be shored, sloped or otherwise constructed so as to minimise the potential for collapse. Appropriate physical barriers should be erected during and on completion of excavations to prevent any personnel entering the excavation area.

Cuts and Abrasions

The manual work associated with the remediation program may give rise to the risk of cuts and abrasions to personnel working in the area. As well as the direct consequences of any cut or abrasion, such injuries can lead to the possibility of exposure to contaminants through the wound as well as diseases such as tetanus.

To minimise the risk of direct or indirect injury, personnel will wear the personal protective equipment described in **Section 10.3**.

Heat Stress and UV Exposure

Site personnel may experience heat stress due to a combination of elevated ambient temperatures and the concurrent use of PPE; this depends in part on the type of work and the time of year.

In addition to heat stress, overexposure to UV radiation in sunlight can result in sunburn to exposed skin. The use of a high protection sunscreen (SPF30 or greater) on all exposed skin is recommended. Hats (including hard hats in specified areas) will also provide additional sun protection during the peak (i.e. 10:00 am to 3:00 PM) sun period. Sunglasses should be worn (where appropriate) to protect eyes from effects of UV exposure.

Underground Services

There is the potential for underground services (electricity, natural gas lines, water, telephone, sewer, and stormwater) to be present beneath the work area. The remediation contractor shall ensure that appropriate procedures will be taken to minimise the risk associated with excavation near services.

Aboveground Electrical Hazards

All electrical plant and equipment must comply with the requirements of Australian Standard AS 3000. Hand held portable tools shall comply with AS/NZS 3160 "hand-held portable electric tools" and shall be double insulated. Cord connected portable hand lamps shall comply with AS/NZS 3118. A Residual Current Device (RCD) shall protect plug-in portable equipment, which is connected to a supply above Extra Low Voltage - 12-24volts (including equipment supplied from a generator or welding set). RCD protection shall be provided during maintenance of portable electrical equipment at all times while the equipment is connected to a power supply above Extra Low Voltage, irrespective of whether power is switched ON or OFF. RCD's shall comply with AS 3190 and shall be type II units, rated to trip at or below 30 milliamps within 40 milliseconds.

No excavator, drill rig or crane may work within 6 m of overhead distribution power lines.

Manual Handling

When lifting or handling heavy objects, use correct lifting techniques, bending the knees not the back. If the item to be lifted is too heavy or awkward for one person to lift, seek assistance from other company employees or use mechanical help.

Noise

Long-term exposure to high levels of noise is unlikely during this project. However, operating machinery may cause significant noise exposures for short periods. Earplugs or earmuffs should be worn in any situation where noise levels make normal conversation difficult.

10.3 Personal Protective Equipment

All workers who may come into direct contact with contaminated soil will wear the following minimum personal protective equipment (PPE):

- Overalls or long sleeved collared shirt;
- Heavy duty outer gloves (e.g. leather) where there is a risk of cuts or abrasions, otherwise PVC outer gloves if in direct contact with contaminated soil;
- Steel capped boots;
- Safety glasses;
- High visibility vest or jacket; and

- Hard hat.

In addition to the above, the following personal protective equipment will be worn by the licensed personnel responsible for removing the asbestos impacted fill material, or potentially exposed to airborne emissions:

- During any work in the asbestos impacted area prior to final clearance, overalls, gloves, rubber soled work shoes or gum boots should be worn by personnel involved in the work. These shoes will remain inside the work area for the duration of the work.
- Approved respirators shall be worn in the asbestos impacted area at all times to provide respiratory protection. The minimum protection is an approved properly fitting P2 disposable respirator or half faced respirator fitted with a particulate cartridge.
- Respirators should be issued for personal use only and shall be kept in a clean condition. Alcohol based antiseptic swabs should be made available for the cleaning of respirators.
- Any respirator defects should be reported for subsequent repair. They should be maintained in a clean and safe working condition.
- Employees must receive instruction in the correct method of using the respirator and on the importance of correct facial fit and maintenance.

In the event that the PPE detailed above differs from those required by the Class B licensed contractor, the requirements of the Class B contractor will prevail.

It is further noted that, as part of the SafeWork NSW permitting process, additional PPE may be required. If this occurs, then the above PPE requirements will be upgraded to reflect SafeWork's requirements. However, given the extent of the identified asbestos contamination, this is considered unlikely.

10.4 Asbestos Air Monitoring Procedures

Airborne asbestos fibre monitoring is recommended to be conducted during non-friable asbestos remediation works where proximal to sensitive populations (e.g. close to residences or public areas) or any friable asbestos remediation works, in accordance with 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 dust [NOHSC 3002:2005].

Where monitoring is required, the consultant shall undertake airborne asbestos fibre monitoring at a minimum of four static locations daily (where there is one area of works) during remediation works that will disturb asbestos impacted or contaminated materials. Monitoring locations will works area perimeter and/or site perimeter locations and downwind locations, dependent upon whether there are multiple work zones inclusive of asbestos work zones and non-asbestos work zones. 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.

Where friable asbestos impacts are identified and/or reasonably suspected, air monitoring will be conducted by a LAA (as per Safe Work NSW requirements). All removal works will further be required to be completed by a Class A Asbestos licenced removalist. Where non-friable impacts are identified (i.e. Asbestos impacts identified in JBS&G (2025)) removal works can be completed by a Class B or Class A Asbestos licenced removalist.

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.

In establishing site trigger levels for evaluation of the monitoring results, reference is made to the appropriate TWA (*Workplace Exposure Standards for Airborne Contaminants*, 17 December 2019 – SafeWork Australia) levels:

- Amosite - 0.1 fibre/mL;
- Chrysotile – 0.1 fibre/mL;
- Crocidolite - 0.1 fibre/mL;
- Other forms of asbestos - 0.1 fibre/mL; and
- Any mixture of these, or where the composition is unknown - 0.1 fibre/mL.

With consideration to these levels the following trigger levels have been developed:

- If airborne fibre levels reach 0.01 fibres/mL the source of fibre release is to be found and rectified. Work in the affected area does not have to stop; and
- If airborne fibre levels reach 0.02 fibres/mL work in the work area should stop and additional controls measures employed. This will involve additional water spraying during excavations.

Air monitoring results will be obtained within 24 hours of sample collection on week days. While this precludes "real time" monitoring, inspections will be made during all excavation works and, if there are any visible dusts, light water sprays will be used to wet the excavation and prevent the release of any airborne asbestos fibres.

If respirable asbestos fibres are confirmed as present between 0.01 and 0.02 fibres/mL, the following controls must be implemented by the licensed asbestos removalist, in accordance with SWNSW (2022a):

- 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 SWNSW (2022a):

- 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 air monitoring report will be prepared documenting the previous/same day's airborne asbestos fibre air monitoring results. This report will be made available to all relevant stakeholders and site workers.

10.4.1 Additional Consideration of Chemical Contaminants

In addition to general assessment of the potential for exposure to chemical contaminants, the WHSP should also consider the chemical substances potentially or known to be present based on the results of previous investigations. As a precautionary measure, the WHSP should include the requirement for the plan to be revised in the event of an unexpected find of contaminated material during remediation and/or construction.

When working with contaminated materials in general, care needs to be taken to ensure that the contamination is not introduced to the worker via ingestion, inhalation or absorption. The WHSP must detail the PPE and decontamination requirements to be followed to control the risks posed by potential exposure to chemical contaminants at the site.

10.5 Decontamination Procedures

The decontamination procedures specified below will be followed whenever personnel, plant or equipment leave the site.

Personnel

The following steps should be taken to ensure personnel do not leave the site with potentially contaminated clothing:

1. Disposal of coveralls and respirator;
2. Wash boots in clean water;
3. Remove outer gloves and store for reuse;
4. Remove overalls (if used) and store for reuse;
5. Remove respirator and goggles (if used) and store clean for reuse or decontamination, as appropriate; and
6. Thoroughly wash hands and face.

If any part of a worker's body comes into direct contact with any potentially contaminated material, the affected part(s) should be immediately washed with clean water.

Vehicle, Plant and Equipment

All equipment, including personal protective equipment, will be washed or otherwise cleaned to ensure that contaminated soil, water or dust is removed before it leaves the site. All plant and equipment will have their outer bodies thoroughly cleaned of soil and sediment before moving off the site.

10.6 Asbestos Management

Notwithstanding any part of the proposed requirements for occupational health and safety as outlined here – all works on the remedial site must be undertaken in accordance with relevant SafeWork NSW codes of practice.

Based on the available characterisation information as discussed in **Section 4**, fill materials in portions of the site are impacted with asbestos. Asbestos contaminated soil necessitating management for potential asbestos exposure is defined in SWNSW (2022b) as:

- Soil that contains visible asbestos as determined by a competent person; or
- 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 need to meet the requirements provided for asbestos-related works in SWNSW (2022b), inclusive of preparation of an asbestos removal control/management plan.

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 site, a competent person shall be considered to be a person who holds a tertiary degree in a science or engineering discipline, has experience in contaminated site assessment and has completed a SafeWork NSW approved Asbestos Removal Supervisor course.

10.7 Emergency Response

The remediation contractor will be responsible for preparing an emergency response plan, which will provide details on appropriate action and evacuation procedures in the event of an emergency.

In the event of an emergency arising on the site, appropriate action should be taken. Site evacuation procedures should be followed, as necessary.

In the event of an accident: evaluate the seriousness of the injury, and contact emergency services via 000, if necessary; provide first aid, as appropriate, and if safe to do so evacuate the injured person via the Decontamination Zone; make the area as safe as possible without jeopardising safety.

Following the above, if a serious accident occurs, do not disturb the scene, except to make safe and prevent further injury or damage, and keep all unauthorised people out, and report all accidents to the client's representative.

11. Conclusions and Recommendations

11.1 Conclusions

Overall, it is considered that the proposed actions outlined in this plan 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 plan and the recommendations below, it is concluded that the site can be made suitable for the intended use.

11.2 Recommendations

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

- An Asbestos Management Plan (AMP) to ensure the risks and impacts associated with asbestos removal and validation works are controlled appropriately;
- A Remediation Environmental Management Plan (REMP), to document the monitoring and management measures required to control the environmental impacts of the works and ensure the validation protocols are being addressed; and
- A Work Health and Safety Management Plan (WHSP) to document the procedures to be followed to manage the risks posed to the health of the remediation workforce.

Upon completion of the works within the site, a validation report will be required to be submitted to the consent authority documenting that the site is considered suitable for the proposed use(s).

12. 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 report has been prepared specifically for the client for the purposes of the commission, and no warranties, express or implied, are offered to any third parties and no liability will be accepted for use or interpretation of this report by any third party.

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. This report should not be amended in any way without prior approval by JBS&G, or reproduced other than in full including all attachments as originally provided to the client by JBS&G.

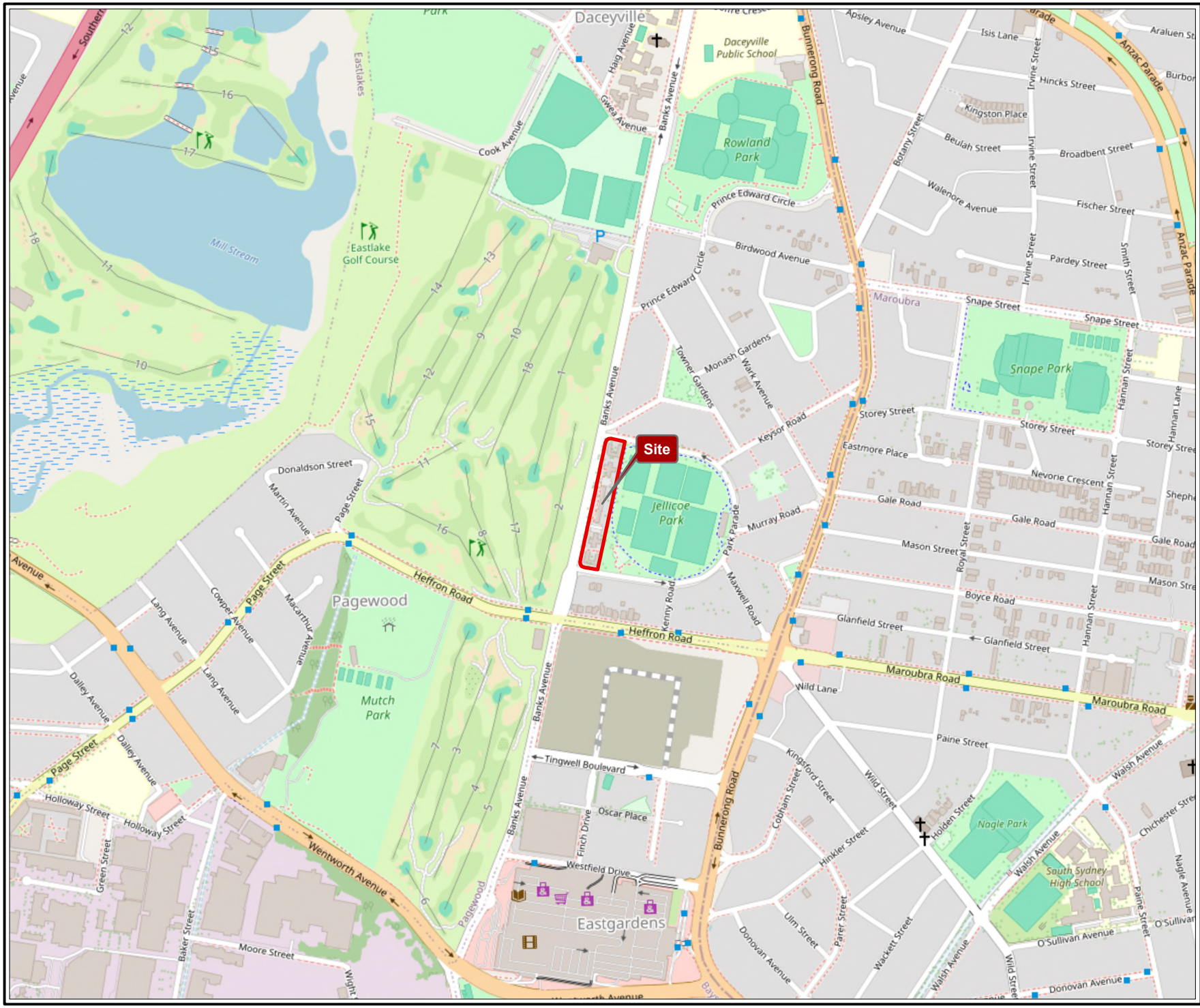
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the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

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. 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 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: 69149

Client: Homes NSW

Version: R02 Rev 0	Date 14/05/2025
Drawn By: TS	Checked By: NB

Scale 1:10,000

0 100 200

metres

Coord. Sys. GDA2020 MGA Zone 56

68-80 Banks Avenue, Pagewood, NSW

SITE LOCATION

FIGURE 1

File Name: 69149_PagewoodHAFFGeotechandEnviroPSIDSI_R01RevA

Legend

- Approximate Site Boundary
- NSW Cadastre
- Approximate Proposed Basement Extents

JBS&G

Job No: 69149	
Client: Homes NSW	
Version: R02 Rev 0	Date 2/10/2025
Drawn By: TS	Checked By: NB
Scale 1:2,000	

0 25 50
metres

Coord. Sys. GDA2020 MGA Zone 56

68-80 Banks Avenue, Pagewood, NSW

SITE LAYOUT

FIGURE 2

File Name: 69149_PagewoodHAFFGeotechandEnviroPSIDSI_R02RevA
Reference: Nearmap - www.nearmap.com (Capture Date: 02/04/2025)

Legend

- Approximate Site Boundary
- NSW Cadastre

Sample Locations

- Soil/Groundwater Locations
- Soil Sample Location
- Surface ACM Fragment

JBS&G

Job No: 69149

Client: Homes NSW

Version: R02 Rev 0	Date 18/07/2025
Drawn By: TS	Checked By: NB

Scale 1:1,500

0 25 50

metres

Coord. Sys. GDA2020 MGA Zone 56

68-80 Banks Avenue, Pagewood, NSW

SAMPLE LOCATIONS

FIGURE 3

File Name: 69149_PagewoodHAFFGeotechandEnviroPSIDSI_R01RevA
Reference: Nearmap - www.nearmap.com (Capture Date: 02/04/2025)

Legend

- Approximate Site Boundary
- NSW Cadastre

Sample Locations

- Soil/Groundwater Locations
- Soil Sample Location
- Surface ACM Fragment

JBS&G

Job No: 69149

Client: Homes NSW

Version: R02 Rev 0 | Date 23/07/2025

Drawn By: TS | Checked By: NB

Scale 1:1,500

0 25 50

metres

Coord. Sys. GDA2020 MGA Zone 56

68-80 Banks Avenue, Pagewood, NSW

SOIL EXCEEDANCES

FIGURE 4A

File Name: 69149_PagewoodHAFFGeotechandEnviroPSIDSI_R01RevA
Reference: Nearmap - www.nearmap.com (Capture Date: 02/04/2025)

MW01 Analyte	Concentration	Criteria
PFOS	0.002µg/L	PFAS NEMP 99% Marine Species Protection

MW02 Analyte	Concentration	Criteria
PFOS	0.038µg/L	PFAS NEMP 99% Marine Species Protection

MW03 Analyte	Concentration	Criteria
PFOS	0.0017µg/L	PFAS NEMP 99% Marine Species Protection

Legend

- Approximate Site Boundary
- NSW Cadastre

Sample Locations

- Soil/Groundwater Locations
- Soil Sample Location
- Surface ACM Fragment

JBS&G

Job No: 69149

Client: Homes NSW

Version: R02 Rev 0 | Date 23/07/2025

Drawn By: TS | Checked By: NB

Scale 1:1,500

0 25 50

metres

Coord. Sys. GDA2020 MGA Zone 56

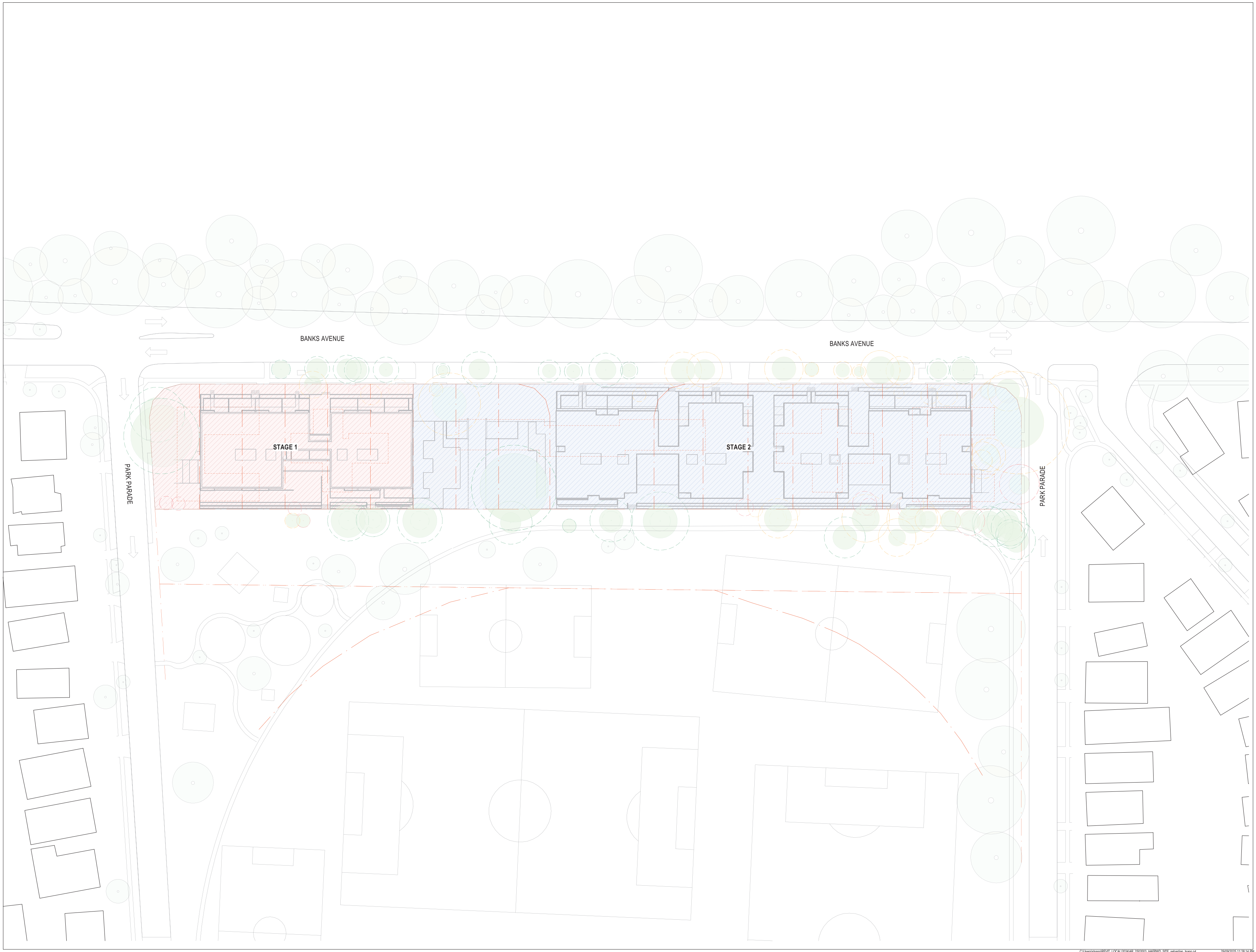
68-80 Banks Avenue, Pagewood, NSW

GROUNDWATER EXCEEDANCES

FIGURE 4B

File Name: 69149_PagewoodHAFFGeotechandEnviroPSIDSI_R01RevA
Reference: Nearmap - www.nearmap.com (Capture Date: 02/04/2025)

Appendix A Proposed Development Plans



BVN

ARCHITECTS REGISTRATION BOARD /
NOMINATED ARCHITECTS

NSW
7115 JULIAN ASHTON
7053 MATTHEW BLAIR
7151 PHILLIP ROSSINGTON
7439 PETER TITMUSS
8011 WILLIAM DOWZER
10447 ALISON BOUNDS
10705 CATHERINE SKINNER

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NOTE
CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCEMENT OF WORK OR PREPARATION OF SHOP DRAWINGS AND TO BRING ANY INFORMATION DISCREPANCIES BETWEEN DOCUMENTS TO BVN'S ATTENTION. DO NOT SCALE THIS DRAWING

ISSUE	DATE	FOR	CHKD
1	29/09/2025	FOR INFORMATION	

CONSULTANT

CONSULTANT

CONSULTANT

CONSULTANT

PROJECT MANAGER

CLIENT

Homes NSW

HOMES NSW

CLIENT NUMBER

PROJECT

HAFF PAGEWOOD
e.g. 255 PITT STREET,
SYDNEY NSW
AUSTRALIA

BVN PROJECT NUMBER

2502003

DRAWING KEY

TRUE NORTH

GRAPHIC SCALE
0 2000 5000

SCALE
1 : 500@A1

STATUS

DRAWING

STAGING PLAN

	ISSUE
AR-DA-10A-XX-10	1

C:\Users\sbang\REVIT_LOCAL\2024\AR_2502003_HAFFPWD_SITE_sebastian_bang.rvt 29/09/2025 11:28:14 PM

BVN

ARCHITECTS REGISTRATION BOARD / NOMINATED ARCHITECTS

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NOTE

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CLIENT

Homes NSW

HOMES NSW

CLIENT NUMBER

PROJECT

HAFF PAGEWOOD
e.g. 255 PITT STREET,
SYDNEY NSW
AUSTRALIA

BVN PROJECT NUMBER

2502003

DRAWING KEY

TRUE NORTH

GRAPHIC SCALE

0 2000 5000

SCALE

1 : 500@A1

STATUS

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GA - OVERALL - LEVEL 00

	ISSUE
AR-DA-10B-00-01	6

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ISSUE

2

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GA - OVERALL - LEVEL 03

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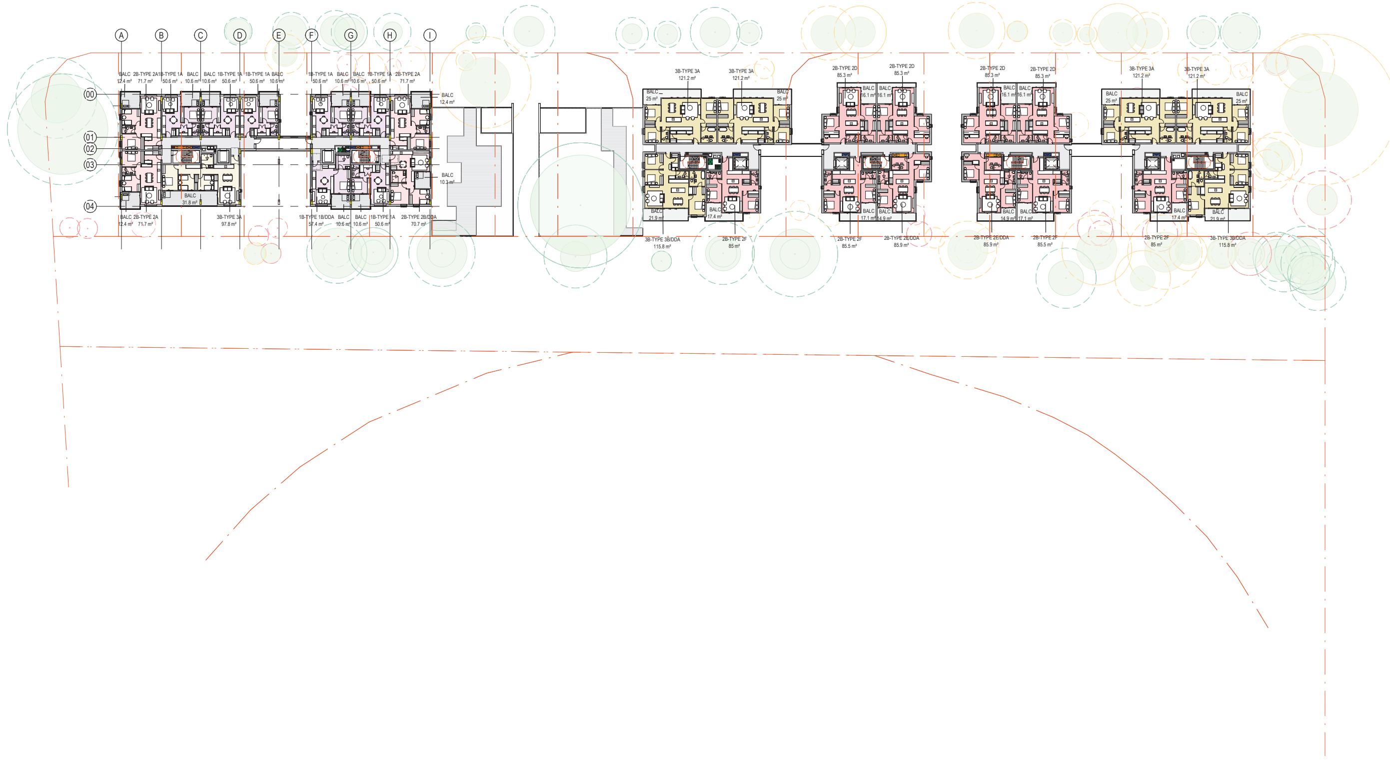

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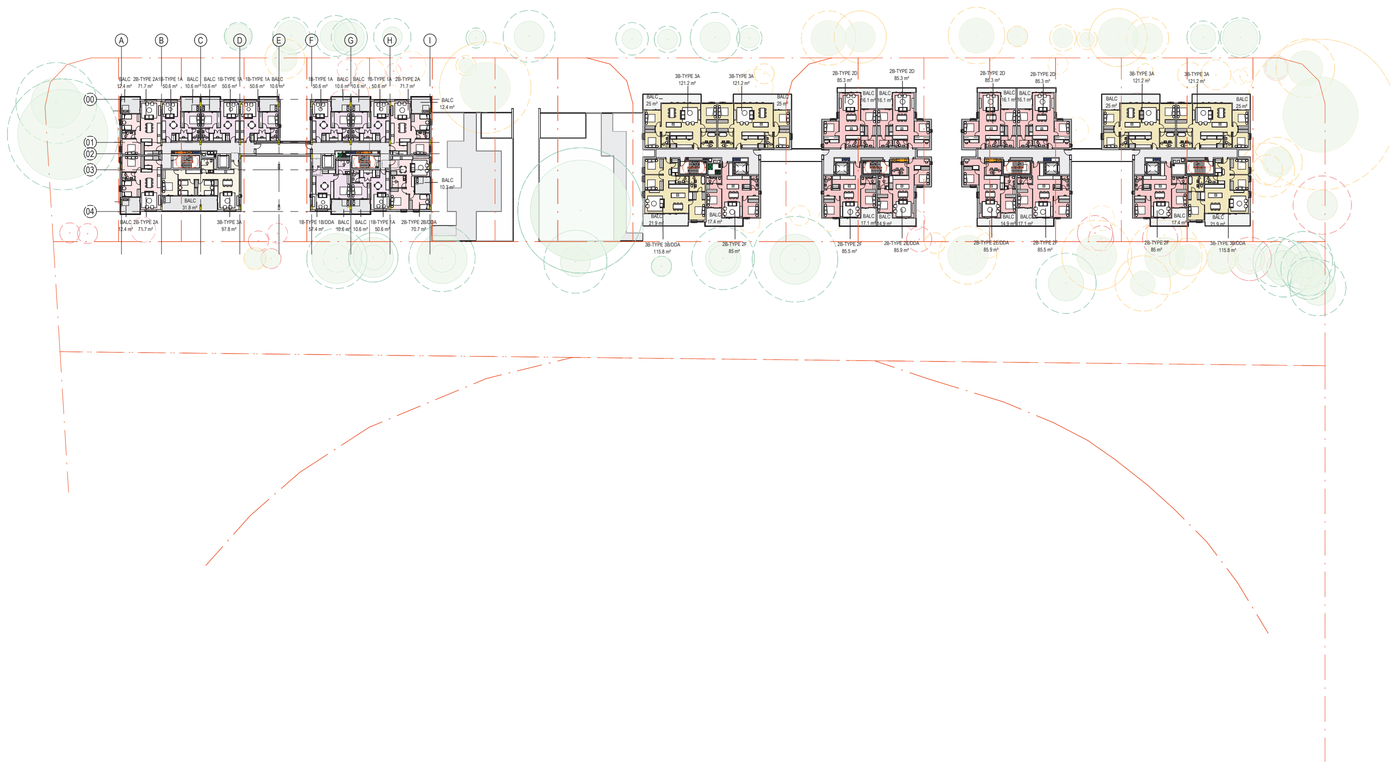

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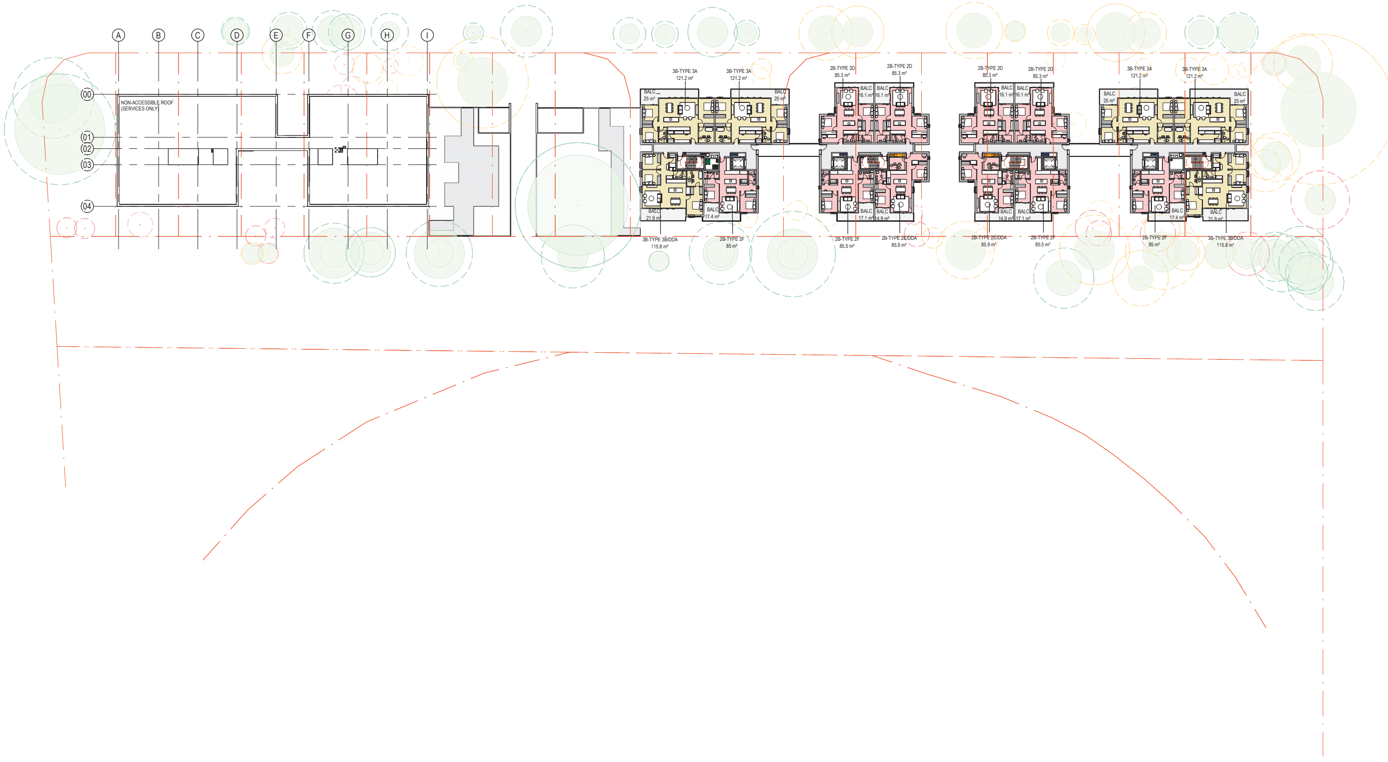

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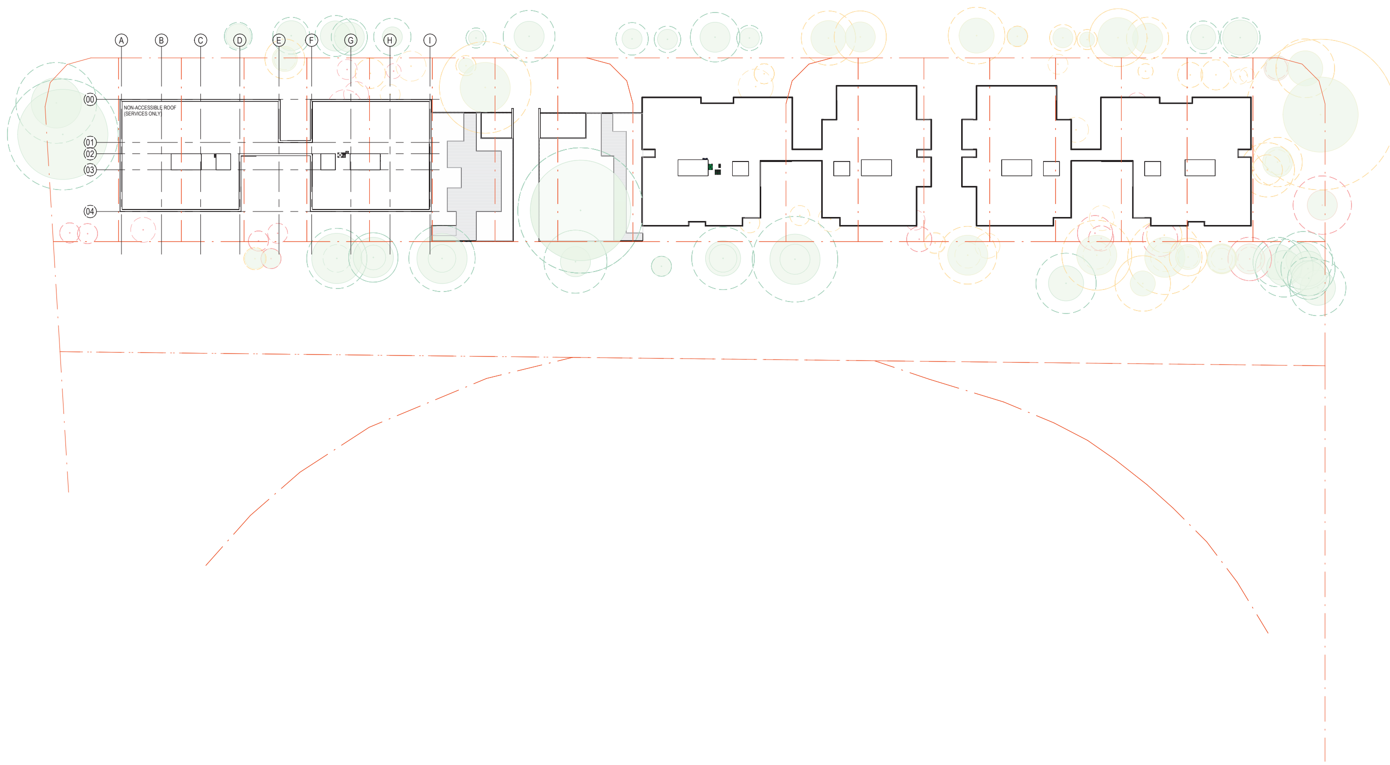

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STATUS

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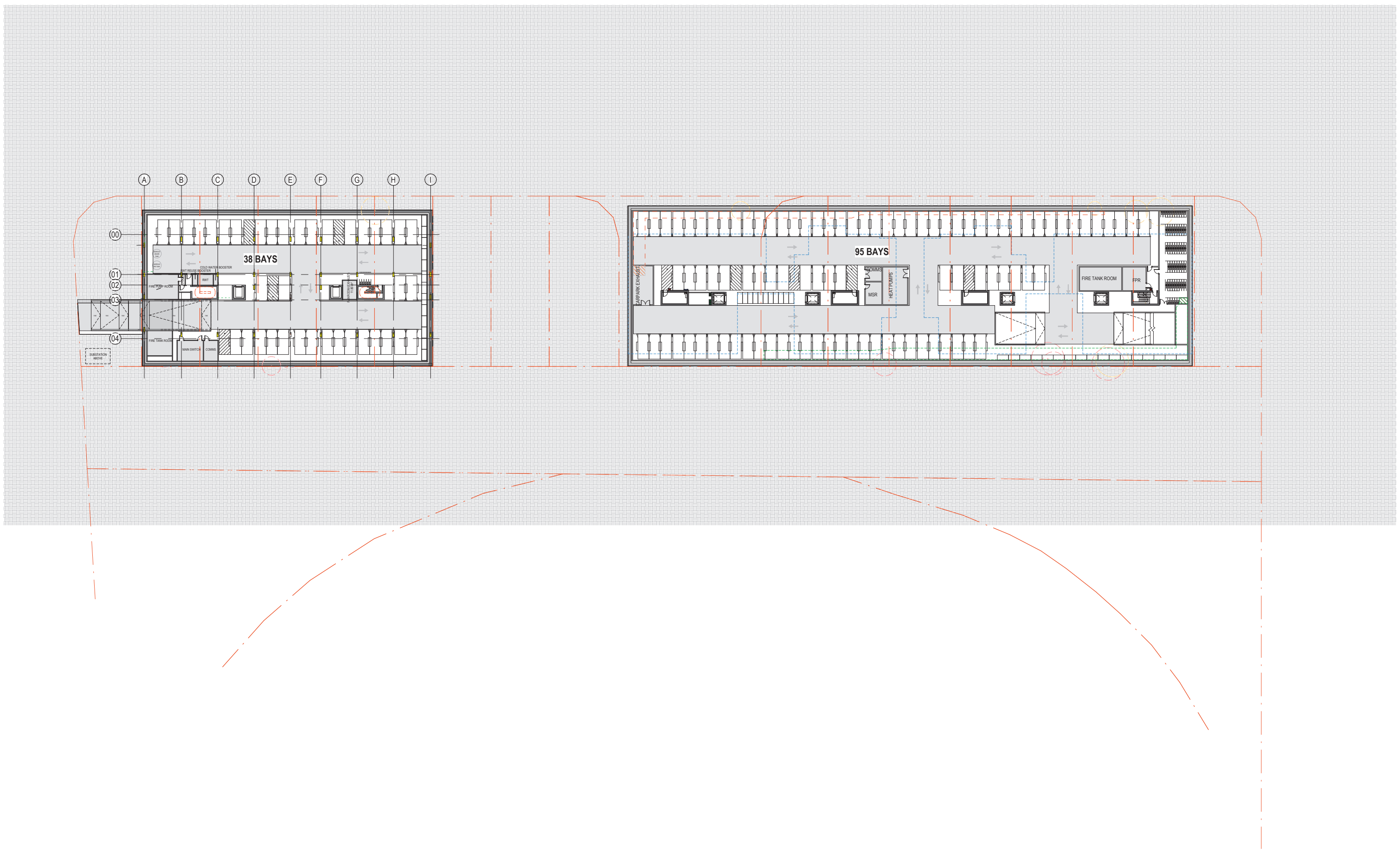

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GA - OVERALL - LEVEL B1

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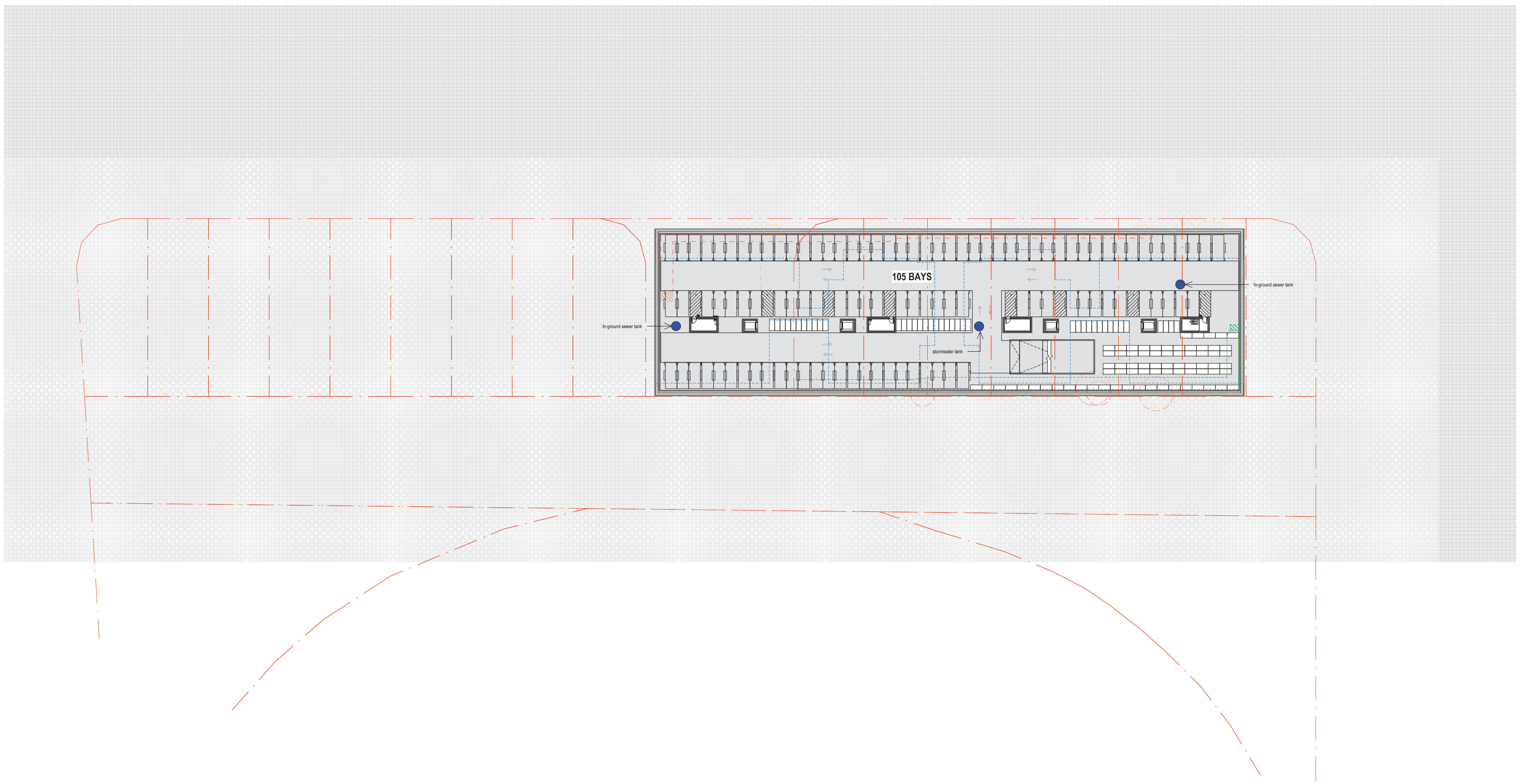
ISSUE

6



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GA - OVERALL - LEVEL B2

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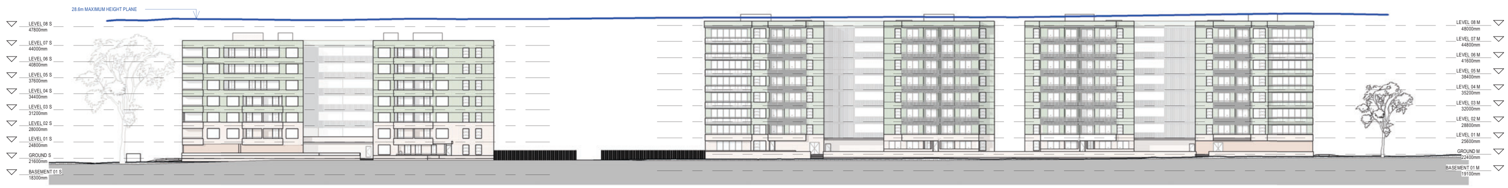
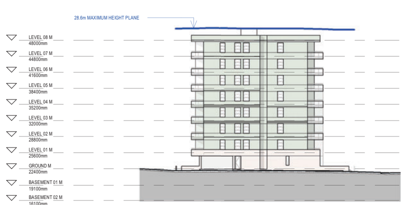


2 EAST ELEVATION - OVERALL

1 WEST ELEVATION - OVERALL

3 SOUTH ELEVATION - SOCIAL

5 NORTH ELEVATION - SOCIAL



4 NORTH ELEVATION - MARKET

6 SOUTH ELEVATION - MARKET

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ISSUE

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SOCIAL HOUSING

PROJECT BRIEF

UNIT MIX SUMMARY

UNIT TYPE	PERCENTAGE
1B	65%
2B	35%
3B	0%

ADG SOLAR ACCESS

SOLAR	PERCENTAGE
NO SOLAR	MAX 15%
MORE THAN 2HRS	MIN 70%

ADG CROSS VENTILATION

CROSS VENTILATION	PERCENTAGE
	MIN 60%

BUILDING HEIGHT

MAX HEIGHT 28.6m

PROPOSED HEIGHT 23.8m
24.8m (INC LIFT OVERRUNS)

PARKING

HOUSING SEPP RATES	0.4 (1B)	0.5 (2B)	1.0 (3B)
REQUIRED	38.7 (INC DDA SPTIAL ALLOCATION @ 50% OF ADAPTABLE UNITS)		
VISITOR	0		

TOTAL REQUIRED 43

PROPOSED CARSPACES 45

BICYLE PARKING

TOTAL REQUIRED ?

PROPOSED BICYCLE SPACES ?

*REFER TO TRAFFIC CONSULTANT DOCUMENTS

PROJECT PARAMETERS

SSDA_SOCIAL HOUSING...	
UNIT TYPE	Percentage
1B	63%
53	
2B	32%
27	
3B	5%
4	
Total units: 84	

SSDA_SOCIAL HOUSING SOLAR ACCESS		
SOLAR	Count	Percentage
MORE THAN 2HR	59	70.2% *
LESS THAN 2HR	25	29.8%
	84	

NO SOLAR = 0 %

*100% OF UNITS RECEIVES 1hr 45mins BETWEEN 9am - 3pm MIDWINTER

SSDA_SOCIAL HOUSING CROSS VENTILATION		
CROSS VENTILATION	Count	Percentage
Yes	51	61%
No	33	39%
	84	

SSDA_GBA EFFICIENCY SOCIAL	
Level	Area
BASEMENT 01	2124.24 m²
GROUND	1233.12 m²
LEVEL 01	1210.38 m²
LEVEL 02	1210.38 m²
LEVEL 03	1210.38 m²
LEVEL 04	1210.38 m²
LEVEL 05	1205.56 m²
LEVEL 06	1205.56 m²
	10609.98 m²

SSDA_GFA EFFICIENCY SOCIAL	
Level	Area
GROUND	744.0 m²
LEVEL 01	875.0 m²
LEVEL 02	875.0 m²
LEVEL 03	875.0 m²
LEVEL 04	859.9 m²
LEVEL 05	859.9 m²
LEVEL 06	859.9 m²
	5948.6 m²

SSDA PARKING SCHEDULE_SOCIAL_PROVIDED	
Comments	Level
	BASEMENT 01 S
: 38	
Grand total: 38	

MARKET HOUSING

PROJECT BRIEF

SSDA_SOCIAL HOUSING UNIT MIX SUMMARY

UNIT TYPE	PERCENTAGE
1B	20%
2B	60%
3B	20%

ADG SOLAR ACCESS

SOLAR	PERCENTAGE
NO SOLAR	MAX 15%
MORE THAN 2HRS	MIN 70%

ADG CROSS VENTILATION

CROSS VENTILATION	PERCENTAGE
	MIN 60%

BUILDING HEIGHT

MAX HEIGHT 28.6m

PROPOSED HEIGHT 27.3m
28.3m (INC LIFT OVERRUNS)

HOUSING SEPP RATES	1.0 (1B)	1.0 (2B)	2.0 (3B)
REQUIRED	171 (INC DDA SPACE ALLOCATION @ 50% OF ADAPTABLE UNITS)		

VISITOR 28.0

TOTAL REQUIRED 199

PROPOSED CARSPACES 200

BICYCLE PARKING

TOTAL REQUIRED 140 (1 PER UNIT)

PROPOSED BICYCLE SPACES 86

INC 54 BICYCLE PARKING ARE PROVIDED WITHIN BASEMENT STORAGE CAGES

*REFER TO TRAFFIC CONSULTANT DOCUMENTS

PROJECT PARAMETERS

SSDA_MARKET HOUSING...	
Name	Percentage
1B	21%
29	
2B	57%
80	
3B	22%
31	
Total Units: 140	

SSDA_MARKET HOUSING SOLAR ACCESS		
SOLAR	Count	Percentage
MORE THAN 2HR	92	65.7% *
LESS THAN 2HR	48	34.3%
	140	

NO SOLAR = 0 %

*100% OF UNITS RECEIVES 1hr 45mins BETWEEN 9am - 3pm MIDWINTER

SSDA_MARKET HOUSING CROSS VENTILATION		
CROSS VENTILATION	Count	Percentage
Yes	121	86%
No	19	14%
	140	

SSDA_GBA EFFICIENCY MARKET	
Level	Area
BASEMENT 02	3965.36 m²
BASEMENT 01	3965.36 m²
GROUND	2499.09 m²
LEVEL 01	2497.69 m²
LEVEL 02	2497.69 m²
LEVEL 03	2497.69 m²
LEVEL 04	2497.69 m²
LEVEL 05	2497.69 m²
LEVEL 06	2497.69 m²
LEVEL 07	2497.69 m²
	27913.65 m²

SSDA_GFA EFFICIENCY MARKET	
Level	Area
GROUND	1560.1 m²
LEVEL 01	1770.6 m²
LEVEL 02	1770.6 m²
LEVEL 03	1770.6 m²
LEVEL 04	1770.6 m²
LEVEL 05	1773.9 m²
LEVEL 06	1773.9 m²
LEVEL 07	1773.9 m²
	13964.1 m²

SSDA PARKING SCHEDULE_MARKET_PROVIDED	
Comments	Level
MARKET	BASEMENT 01 M
BASEMENT 01 M: 95	
MARKET	BASEMENT 02 M
BASEMENT 02 M: 105	
MARKET TOTAL PARKING: 200	

GENERAL

SOCIAL + MARKET

PROJECT PARAMETERS

SSDA_GFA EFFICIENCY TOTAL		
Name	Level	Area
Market	GROUND	1560.13 m²
Market	LEVEL 01	1770.60 m²
Market	LEVEL 02	1770.60 m²
Market	LEVEL 03	1770.60 m²
Market	LEVEL 04	1770.60 m²
Market	LEVEL 05	1773.86 m²
Market	LEVEL 06	1773.86 m²
Market	LEVEL 07	1773.86 m²
		13964.11 m²
Social	GROUND	744.02 m²
Social	LEVEL 01	874.96 m²
Social	LEVEL 02	874.96 m²
Social	LEVEL 03	874.96 m²
Social	LEVEL 04	859.90 m²
Social	LEVEL 05	859.90 m²
Social	LEVEL 06	859.90 m²
		5948.61 m²
Total GFA		19912.73 m²

SITE AREA

AREA	9,262m²
FSR	2.15:1
MAX GFA	19,913m²

SETBACKS

FRONT (BANKS AVENUE) = VARIOUS, min 5.9M

The building setback to a road is compatible with the predominant front setback. (Source: Bayside DCP)

SIDE (PARK PARADE)
NORTH = 10M
SOUTH = 13 - 14.6M

Side and rear setbacks are to be consistent with the Apartment Design Guide. (Source: Bayside DCP)

REAR (JELLICOE PARK) = VARIOUS, min 3M

BUILDING SEPARATION

BUILDING SEPARATION

Up to four storeys (approximately 12m)
Five to eight storeys (approximately 25m)
(Source: ADG Part 02)

ACHIEVED = 42M

LANDSCAPE / DEEP SOIL

LANDSCAPE AREA 30% Site Area (Source: Housing SEPP)
15% Site Area (Source: Bayside DCP)

COMPLIANT = 2,779m² (30%)
= 1,389m² (15%)

ACHIEVED = 4,500m²

ASSUMES NO ROOF COMMUNAL TERRACES TO EITHER SOCIAL / MARKET BUILDINGS

ADG DEEEP SOIL 7% Site Area (Source: ADG Part 03)

COMPLIANT = 648.3m²

ACHIEVED = 2,175m²

COMPLIANT TO "Minimum 6m" DIMENSION

COMMUNAL AREAS

MINIMUM COS 25% of Site Area (Source: ADG Part 03)

COMPLIANT = 2,316m²

ACHIEVED = 1,500m²

COMPLIANT TO "Minimum of 50% direct sunlight to the principal usable part of the communal open space for a minimum of 2 hours between 9 am and 3 pm on 21 June (mid winter)"

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BVN PROJECT NUMBER
2502003

DRAWING KEY

TRUE NORTH

GRAPHIC SCALE
0 2000 5000

SCALE
@A1

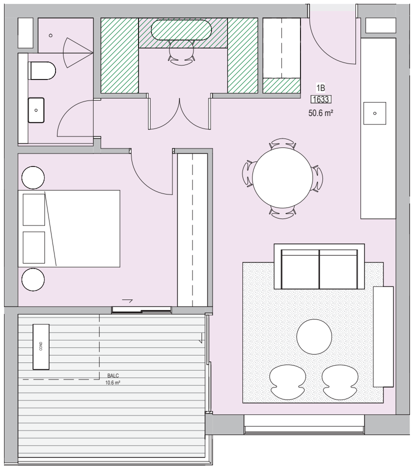
STATUS

DRAWING

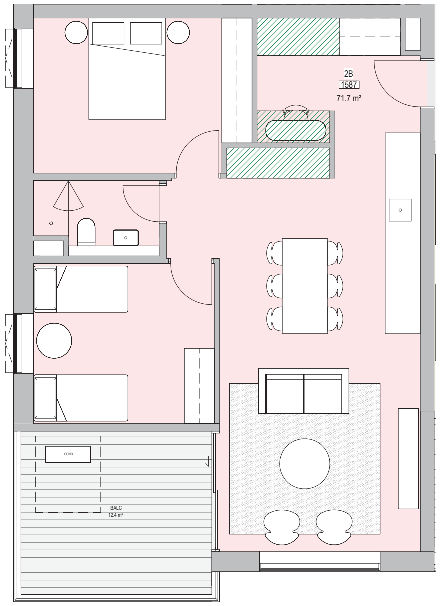
DEVELOPMENT MATRIX

ISSUE

AR-DA-01A-XX-02 3



1 SSDA_1BED - SOCIAL TYPE 1A



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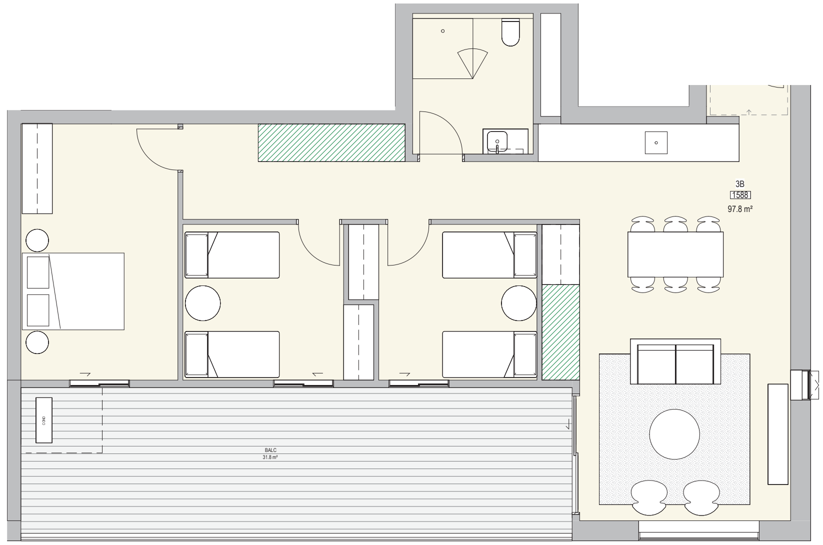
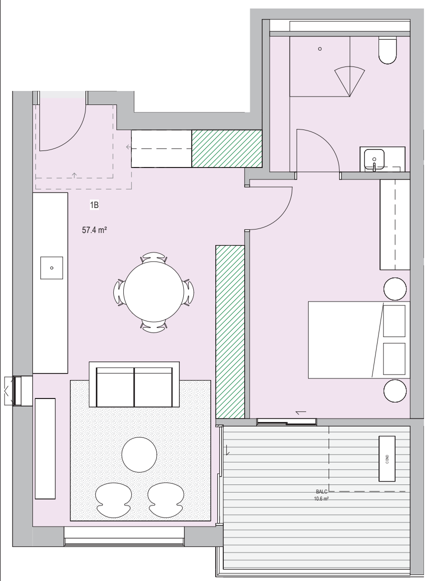
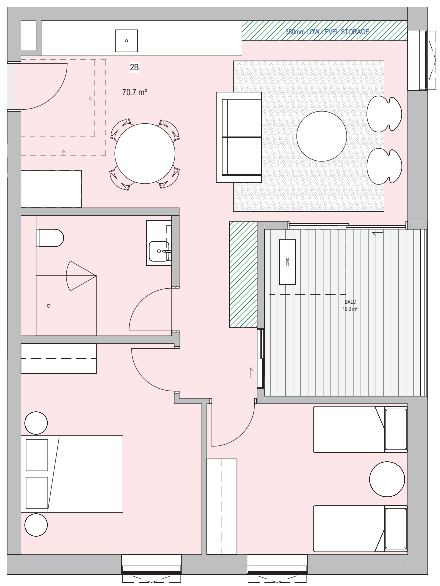


5 SSDA_3BED - SOCIAL TYPE 3A (DDA)



2 SSDA_1BED - SOCIAL TYPE 1B (DDA)



4 SSDA_2BED - SOCIAL TYPE 2B (DDA)

SSDA_SOCIAL HOUSING...	
UNIT TYPE	Percentage
1B	63%
53	
2B	32%
27	
3B	5%
4	
Total units: 84	

SSDA_SOCIAL HOUSING UNIT TYPE SUMMARY	
	TYPE
1B	1B-TYPE 1A
44	
1B	1B-TYPE 1B/DDA
9	
2B	2B-TYPE 2A
20	
2B	2B-TYPE 2B/DDA
7	
3B	3B-TYPE 3A
3	
3B	3B-TYPE 3B
1	
Total units: 84	

ADG_STORAGE SOCIAL		
	STORAGE_VOLUME	
1B-TYPE 1A	8.40 m³	STORAGE CALC
	8.40 m³	
1B-TYPE 1B/DDA	7.74 m³	STORAGE CALC
	7.74 m³	
2B-TYPE 2A	8.59 m³	STORAGE CALC
	8.59 m³	
2B-TYPE 2B/DDA	4.03 m³	STORAGE CALC
	4.03 m³ EXC. 5m3 BASEMENT STORAGE CAGE	
3B-TYPE 3A	9.14 m³	STORAGE CALC
	9.14 m³ EXC. 5m3 BASEMENT STORAGE CAGE	
3B-TYPE 3B	5.92 m³	STORAGE CALC
	5.92 m³ EXC. 5m3 BASEMENT STORAGE CAGE	

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SYDNEY NSW
AUSTRALIA

BVN PROJECT NUMBER

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DRAWING KEY

TRUE NORTH

GRAPHIC SCALE

0 2000 5000

SCALE

1 : 50@A1

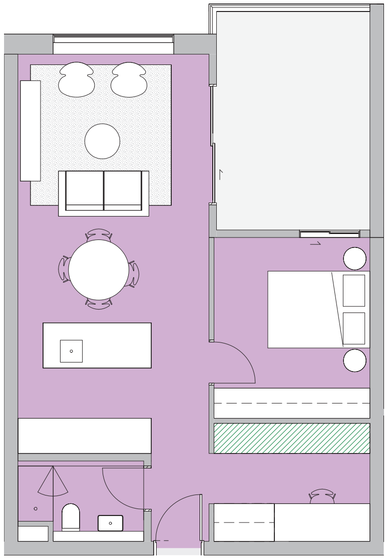
STATUS

DRAWING

TYPICAL LAYOUTS (SOCIAL)

ISSUE

AR-DA-50B-XX-01 1



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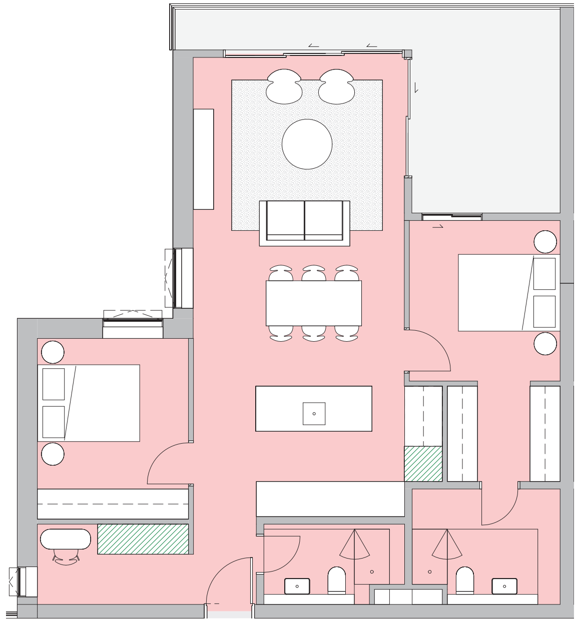

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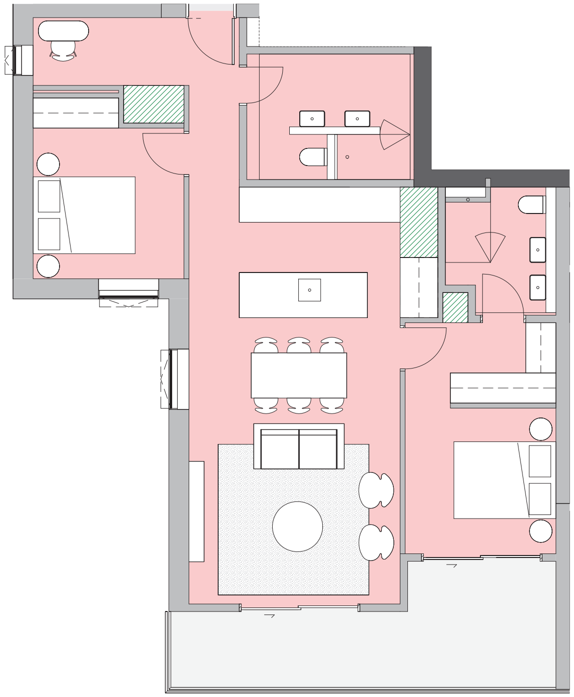

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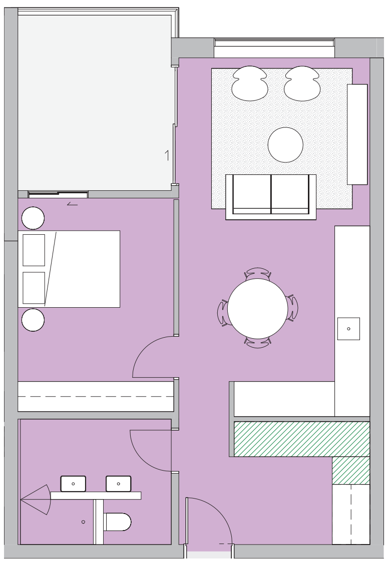

2 SSDA_1BED - MARKET TYPE 1B (DDA)

SSDA_MARKET HOUSING...	
Name	Percentage
1B	21%
29	
2B	57%
80	
3B	22%
31	
Total Units: 140	

SSDA_MARKET HOUSING...	
	UNIT TYPE
1B	1B-TYPE 1A
24	
1B	1B-TYPE 1B/DDA
5	
2B	2B-TYPE 2D
32	
2B	2B-TYPE 2E/DDA
14	
2B	2B-TYPE 2F
28	
2B	2B-TYPE 2G /DDA *
2	
2B	2B-TYPE 2H *
2	
2B	2B-TYPE 2J *
2	
3B	3B-TYPE 3A
16	
3B	3B-TYPE 3B/DDA
14	
3B	3B-TYPE 3C *
1	
Total Units: 140	

ADG_STORAGE MARKET		
	STORAGE VOLUME	
1B-TYPE 1A	4.91 m³	STORAGE CALC
	4.91 m³	
1B-TYPE 1B/DDA	6.67 m³	STORAGE CALC
	6.67 m³	
2B-TYPE 2D	4.80 m³	STORAGE CALC
	4.80 m³	
2B-TYPE 2E/DDA	6.52 m³	STORAGE CALC
	6.52 m³	
2B-TYPE 2F	10.15 m³	STORAGE CALC
	10.15 m³	
2B-TYPE 2G /DDA	7.01 m³	STORAGE CALC
	7.01 m³	
2B-TYPE 2H	5.70 m³	STORAGE CALC
	5.70 m³	
2B-TYPE 2J	5.89 m³	STORAGE CALC
	5.89 m³	
3B-TYPE 3A	9.38 m³	STORAGE CALC
	9.38 m³	
3B-TYPE 3B/DDA	9.49 m³	STORAGE CALC
	9.49 m³	
3B-TYPE 3C	5.38 m³	STORAGE CALC
	5.38 m³	

EXC. BASEMENT STORAGE CAGES TO ALL UNITS
*ATYPICAL UNITS NOT SHOWN ON 50B SERIES, REFER TO 10B SERIES

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PROJECT

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BVN PROJECT NUMBER

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DRAWING KEY

TRUE NORTH

GRAPHIC SCALE
0 2000 5000

SCALE
1 : 50@A1
STATUS

DRAWING

TYPICAL LAYOUTS (MARKET)

ISSUE

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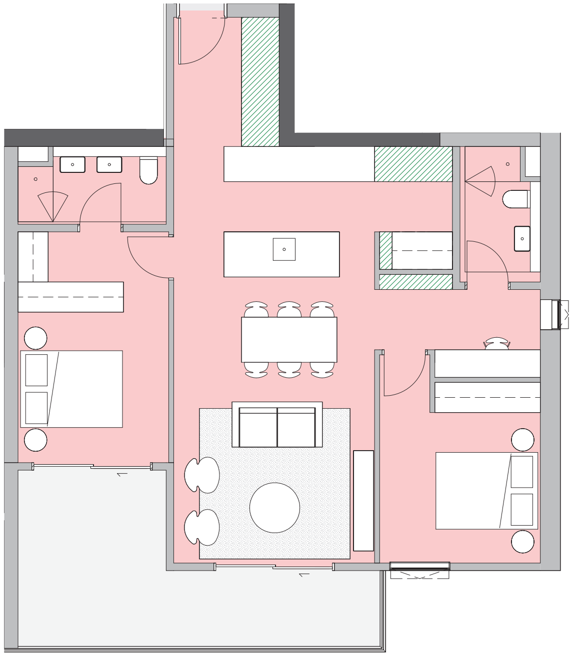

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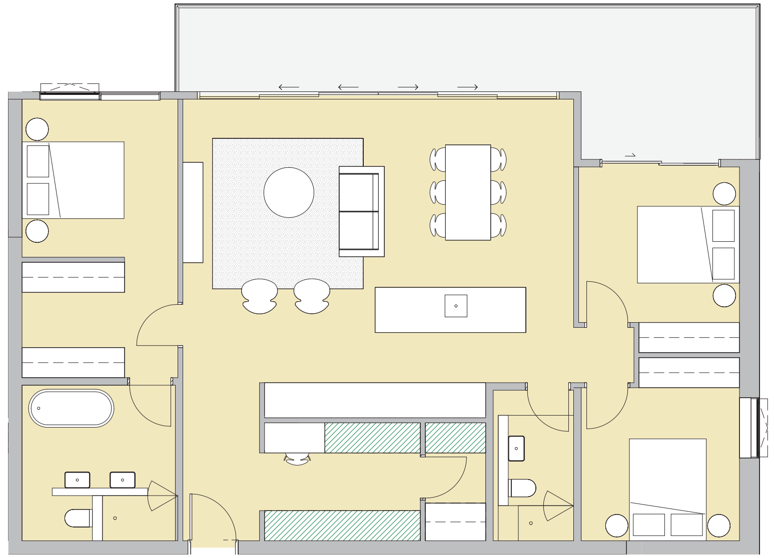

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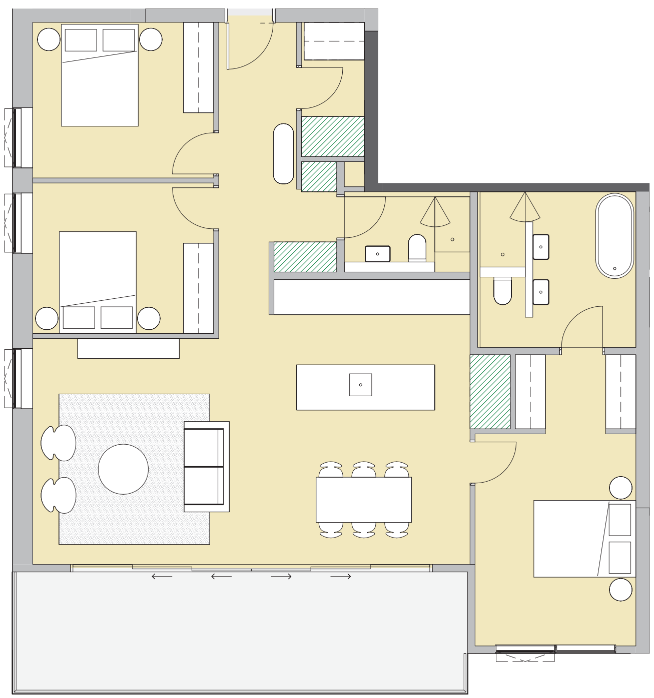

3 SSDA_3BED - MARKET TYPE 3B (DDA)

SSDA_MARKET HOUSING...	
Name	Percentage
1B	21%
29	
2B	57%
80	
3B	22%
31	
Total Units: 140	

SSDA_MARKET HOUSING...		ADG_STORAGE MARKET		
	UNIT TYPE		STORAGE VOLUME	
1B	1B-TYPE 1A	1B-TYPE 1A	4.91 m^3	STORAGE CALC
24			4.91 m^3	
1B	1B-TYPE 1B/DDA	1B-TYPE 1B/DDA	6.67 m^3	STORAGE CALC
5			6.67 m^3	
2B	2B-TYPE 2D	2B-TYPE 2D	4.80 m^3	STORAGE CALC
32			4.80 m^3	
2B	2B-TYPE 2E/DDA	2B-TYPE 2E/DDA	6.52 m^3	STORAGE CALC
14			6.52 m^3	
2B	2B-TYPE 2F	2B-TYPE 2F	10.15 m^3	STORAGE CALC
28			10.15 m^3	
2B	2B-TYPE 2G /DDA	2B-TYPE 2G /DDA	7.01 m^3	STORAGE CALC
2			7.01 m^3	
2B	2B-TYPE 2H	2B-TYPE 2H	5.70 m^3	STORAGE CALC
2			5.70 m^3	
2B	2B-TYPE 2J	2B-TYPE 2J	5.89 m^3	STORAGE CALC
2			5.89 m^3	
3B	3B-TYPE 3A	3B-TYPE 3A	9.38 m^3	STORAGE CALC
16			9.38 m^3	
3B	3B-TYPE 3B/DDA	3B-TYPE 3B/DDA	9.49 m^3	STORAGE CALC
14			9.49 m^3	
3B	3B-TYPE 3C	3B-TYPE 3C	5.38 m^3	STORAGE CALC
1			5.38 m^3	
Total Units: 140				

EXC. BASEMENT STORAGE CAGES TO ALL UNITS

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DRAWING KEY

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STATUS

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TYPICAL LAYOUTS (MARKET)

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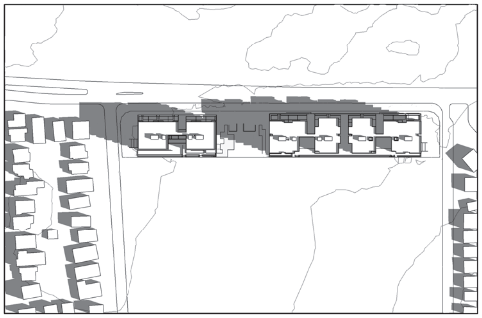
AR-DA-50B-XX-03 1

1 OVERSHADOW 900



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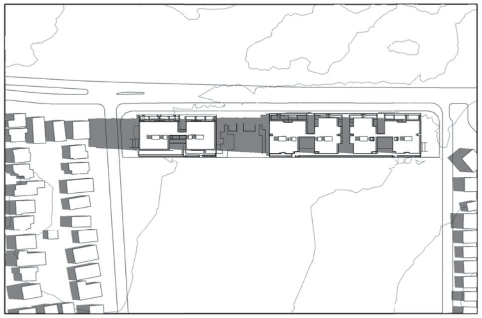

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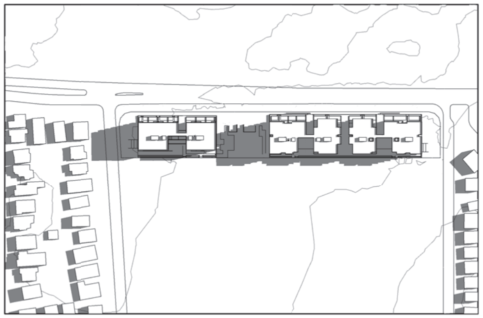

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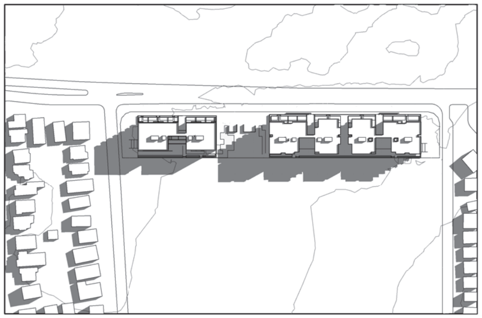

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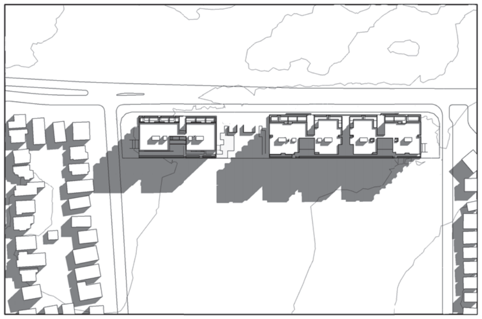
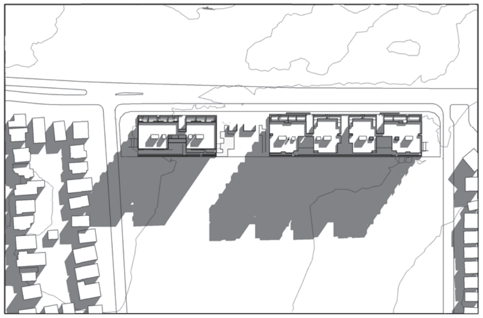


6 OVERSHADOW 1400



7 OVERSHADOW 1500

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SCALE

@A1

STATUS

DRAWING

OVERSHADOWING

ISSUE

AR-DA-10T-XX-06 3

Appendix B Data Summary Tables (JBS&G 2025)

Table A: Soil Analytical Results
Project Number: 69149
Project Name: Pagewood

				Metals & Metalloids									TPHs (NEPC 1999)					TRHs (NEPC 2013)						
				Arsenic	Cadmium	Chromium (hexavalent)	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)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	1	1	1	1	0.1	1	1	20	20	50	50	50	20	50	100	100	50	20	50
NEPM 2013 Table 1A(1) HILs Res A Soil				100	20	100	100	6,000	300	40	400	7,400												
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0-1m																							45	110
NEPM 2013 Table 1B(1-5) Site Specific EIL - Urban Residential and Public Open Space				100			320	180	1,100		120	430												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																				300	2,800		180	120
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																				1,300	5,600		180	120
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																		700	1,000	2,500	10,000			
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																		800	1,000	3,500	10,000			
NEPM 2013 Table 7 Res A Soil HSL for Asbestos in Soil																								
NSW 2014 General Solid Waste CT1 (No Leaching)				100	20	100	100		100	4	40		650				10,000							
NSW 2014 General Solid Waste SCC1 (with leached)				500	100	1,900	1,900		1,500	50	1,050		650				10,000							
NSW 2014 Restricted Solid Waste CT2 (No Leaching)				400	80	400	400		400	16	160		2,600				40,000							
NSW 2014 Restricted Solid Waste SCC2 (with leached)				2,000	400	7,600	7,600		6,000	200	4,200		2,600				40,000							
PFAS NEMP 3.0 (2025) Ecological Direct Exposure - all land uses																								
PFAS NEMP 3.0 (2025) Interim Ecological Indirect Exposure - all land uses																								
PFAS NEMP 3.0 (2025) HIL A - Residential with Garden/Accessible Soil																								
PFAS NEMP 3.0 (2025) HIL B - Residential with Minimal Soil Access																								
PFAS HIL A - Site Specific Exposure Scenario																								
Location Code	**Field ID**	**Date**	**Lab Report Number**																					
BH01	BH01_0_0.1	16 Jun 2025	1234275	9.1	0.7	-	140	37	540	1.1	6.3	290	<20	<20	130	130	260	<20	<50	230	<100	230	<20	<50
	BH01_0_0.3	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	BH02/MW01_0.3_0.5	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH02/MW01_0_0.1	13 Jun 2025	1234275	5.6	<0.4	-	34	27	150	0.2	9.3	110	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50
	BH02/MW01_0_0.3	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH02/MW01_3_3.1	13 Jun 2025	1234275	<2	<0.4	-	<5	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0-0.1	13 Jun 2025	1244298	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH03_0_0.1	16 Jun 2025	1234275	16	0.7	-	550	43	1,200	6.9	5.4	160	<20	48	220	230	498	<20	56	380	120	556	<20	56
	BH03_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0_0.1	16 Jun 2025	1234275	5.2	0.4	-	23	53	350	0.4	6.9	290	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50
	BH04_0.3_0.4	16 Jun 2025	1234275	<2	<0.4	-	7.3	10	54	0.1	<5	52	-	-	-	-	-	-	-	-	-	-	-	-
	BH04_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC01_20250616_AQ	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QA01_20250616_AQ	16 Jun 2025	383658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0_0.1	16 Jun 2025	1234275	3.6	<0.4	-	8.0	18	180	0.1	<5	130	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50
	QC02_20250616	16 Jun 2025	1234275	5.6	<0.4	-	13	33	140	0.2	8.5	160	<20	<20	<50	62	62	<20	<50	<100	<100	<100	<20	<50
	QA02_20250616	16 Jun 2025	383658	5	<0.4	-	10	25	100	0.1	6	110	<25	<50	<100	<100	<50	<25	<50	<100	<100	<50	<25	<50
	BH05_0.3_0.4	16 Jun 2025	1234275	5.8	<0.4	-	12	18	89	<0.1	5.7	120	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50
	BH05_0_0.5	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06	BH06_0.3_0.4	16 Jun 2025	1234275	4.6	<0.4	-	<5	6.3	58	<0.1	<5	70	-	-	-	-	-	-	-	-	-	-	-	-
	BH06_0_0.1	16 Jun 2025	1234275	14	<0.4	-	14	53	170	0.3	8.6	150	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50
	BH06_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07	BH07_0_0.1	16 Jun 2025	1234275	3.1	<0.4	-	14	7.3	34	0.1	<5	15	<20	<20	<50	65	65	<20	<50	<100	<100	<100	<20	<50
	BH07_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH08	BH08_0_0.1	13 Jun 2025	1234275	5.8	<0.4	-	15	26	100	0.2	7.7	120	<20	<20	60	73	133	<20	<50	110	<100	110	<20	<50
	BH08_0.3_0.4	13 Jun 2025	1234275	2.3	<0.4	-	21	5.0	77	0.3	<5	40	-	-	-	-	-	-	-	-	-	-	-	-
	BH08_0.3_0.5	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH08_2_2.1	13 Jun 2025	1234275	<2	<0.4	-	<5	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
	QC01_20250613	13 Jun 2025	1234275	<2	<0.4	-	<5	<5	<5	<0.1	<5	<5	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50
	QA01_20250613	13 Jun 2025	383658	<4	<0.4	-	<1	<1	<1	<0.1	<1	<1	<25	<50	<100	<100	<50	<25	<50	<100	<100	<50	<25	<50

Table A: Soil Analytical Results
Project Number: 69149
Project Name: Pagewood

				Metals & Metalloids									TPHs (NEPC 1999)					TRHs (NEPC 2013)						
				Arsenic	Cadmium	Chromium (hexavalent)	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)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	1	1	1	1	0.1	1	1	20	20	50	50	50	20	50	100	100	50	20	50
NEPM 2013 Table 1A(1) HILs Res A Soil				100	20	100	100	6,000	300	40	400	7,400												
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0-1m																							45	110
NEPM 2013 Table 1B(1-5) Site Specific EIL - Urban Residential and Public Open Space				100			320	180	1,100		120	430												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																				300	2,800		180	120
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																				1,300	5,600		180	120
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																		700	1,000	2,500	10,000			
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																		800	1,000	3,500	10,000			
NEPM 2013 Table 7 Res A Soil HSL for Asbestos in Soil																								
NSW 2014 General Solid Waste CT1 (No Leaching)				100	20	100	100		100	4	40		650				10,000							
NSW 2014 General Solid Waste SCC1 (with leached)				500	100	1,900	1,900		1,500	50	1,050		650				10,000							
NSW 2014 Restricted Solid Waste CT2 (No Leaching)				400	80	400	400		400	16	160		2,600				40,000							
NSW 2014 Restricted Solid Waste SCC2 (with leached)				2,000	400	7,600	7,600		6,000	200	4,200		2,600				40,000							
PFAS NEMP 3.0 (2025) Ecological Direct Exposure - all land uses																								
PFAS NEMP 3.0 (2025) Interim Ecological Indirect Exposure - all land uses																								
PFAS NEMP 3.0 (2025) HIL A - Residential with Garden/Accessible Soil																								
PFAS NEMP 3.0 (2025) HIL B - Residential with Minimal Soil Access																								
PFAS HIL A - Site Specific Exposure Scenario																								
Location Code	**Field ID**	**Date**	**Lab Report Number**																					
	BH08_0_0.3	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC01_20250613_AQ	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QA01_20250613_AQ	13 Jun 2025	383658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09	BH09_0_0.1	16 Jun 2025	1234275	3.2	<0.4	-	<5	6.6	28	<0.1	<5	35	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50
	BH09_0_0.3	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10	BH10_0_0.1	16 Jun 2025	1234275	3.9	<0.4	-	13	23	75	0.2	<5	90	<20	<20	<50	57	57	<20	<50	<100	<100	<100	<20	<50
	BH10_0_0.3	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11	BH11/MW02_0_0.1	13 Jun 2025	1234275	7.3	<0.4	-	8.1	30	110	0.3	<5	110	<20	<20	84	63	147	<20	<50	110	<100	110	<20	<50
	BH11/MW02_0_0.3	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH11/MW02_9.9_10	13 Jun 2025	1234275	<2	<0.4	-	<5	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
	BH11/MW02_FRAG	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12	BH12_0_0.1	17 Jun 2025	1234275	7.5	0.4	-	8.6	21	81	0.1	5.7	160	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50
	QC01_20250617_J	13 Jun 2025	1239729	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QA01_20250617_J	17 Jun 2025	383658-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH12_0.3_0.4	17 Jun 2025	1234275	<2	<0.4	-	<5	<5	<5	<0.1	<5	8.5	-	-	-	-	-	-	-	-	-	-	-	-
	BH12_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH12_FRAG	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13_0_0.1	17 Jun 2025	1234275	3.9	<0.4	-	6.0	18	110	<0.1	<5	56	<20	<20	120	110	230	<20	<50	180	<100	180	<20	<50
	BH13_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	BH14_0_0.1	17 Jun 2025	1234275	12	<0.4	-	5.3	9.5	29	<0.1	<5	32	<20	35	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50
	BH14_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15_0.3_0.4	17 Jun 2025	1234275	<2	<0.4	-	<5	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
	BH15_0_0.1	17 Jun 2025	1234275	6.6	0.5	-	15	22	81	0.1	12	170	<20	43	230	170	443	<20	60	330	<100	390	<20	60
	BH15_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16_0_0.1	18 Jun 2025	1234275	6.8	<0.4	-	6.5	31	130	0.3	5.2	120	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50
	BH16_0_0.3	18 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A: Soil Analytical Results
Project Number: 69149
Project Name: Pagewood

				Metals & Metalloids									TPHs (NEPC 1999)					TRHs (NEPC 2013)						
				Arsenic	Cadmium	Chromium (hexavalent)	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)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	1	1	1	1	0.1	1	1	20	20	50	50	50	20	50	100	100	50	20	50
NEPM 2013 Table 1A(1) HILs Res A Soil				100	20	100	100	6,000	300	40	400	7,400												
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0-1m																							45	110
NEPM 2013 Table 1B(1-5) Site Specific EIL - Urban Residential and Public Open Space				100			320	180	1,100		120	430												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																				300	2,800		180	120
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																				1,300	5,600		180	120
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																		700	1,000	2,500	10,000			
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																		800	1,000	3,500	10,000			
NEPM 2013 Table 7 Res A Soil HSL for Asbestos in Soil																								
NSW 2014 General Solid Waste CT1 (No Leaching)				100	20	100	100		100	4	40		650				10,000							
NSW 2014 General Solid Waste SCC1 (with leached)				500	100	1,900	1,900		1,500	50	1,050		650				10,000							
NSW 2014 Restricted Solid Waste CT2 (No Leaching)				400	80	400	400		400	16	160		2,600				40,000							
NSW 2014 Restricted Solid Waste SCC2 (with leached)				2,000	400	7,600	7,600		6,000	200	4,200		2,600				40,000							
PFAS NEMP 3.0 (2025) Ecological Direct Exposure - all land uses																								
PFAS NEMP 3.0 (2025) Interim Ecological Indirect Exposure - all land uses																								
PFAS NEMP 3.0 (2025) HIL A - Residential with Garden/Accessible Soil																								
PFAS NEMP 3.0 (2025) HIL B - Residential with Minimal Soil Access																								
PFAS HIL A - Site Specific Exposure Scenario																								
Location Code	**Field ID**	**Date**	**Lab Report Number**																					
BH17	BH17_0_0.1	17 Jun 2025	1234275	<2	<0.4	-	5.2	19	45	<0.1	<5	29	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50
	BH17_0_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_0.3_0.4	17 Jun 2025	1234275	<2	<0.4	-	<5	<5	<5	<0.1	<5	13	-	-	-	-	-	-	-	-	-	-	-	-
	BH18_0_0.1	17 Jun 2025	1234275	3.1	<0.4	-	<5	82	32	<0.1	<5	160	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50
	BH18_0_0.2	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19	BH19_0.5_0.6	17 Jun 2025	1234275	<2	<0.4	-	<5	5.4	17	<0.1	<5	18	-	-	-	-	-	-	-	-	-	-	-	-
	BH19_0_0.1	17 Jun 2025	1234275	2.5	<0.4	-	7.8	36	68	0.1	<5	36	<20	55	85	88	228	28	<50	140	<100	140	28	<50
	BH19_0_0.8	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH19_FRAG	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20	BH20_0_0.1	17 Jun 2025	1234275	<2	<0.4	-	<5	15	32	0.1	<5	20	<20	<20	<50	65	65	85	<50	<100	<100	<100	85	<50
	BH20_0_0.2	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21/MW03_0_0.1	18 Jun 2025	1234275	2.9	<0.4	-	20	31	51	<0.1	29	65	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50
	BH21/MW03_0_0.3	18 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH21/MW03_1_1.1	18 Jun 2025	1234275	<2	<0.4	-	<5	<5	<5	<0.1	<5	<5	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50

Table A: Soil Analytical Results
Project Number: 69149
Project Name: Pagewood

				BTEXN							PAHs																				
				Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene_VOC	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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.1	0.1	0.1	0.1	0.05	0.5	0.5	0.5	0.5	0.2	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5
NEPM 2013 Table 1A(1) HILs Res A Soil																3	3	3													300
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0-1m				0.5	160	55			40	3																		3			
NEPM 2013 Table 1B(1-5) Site Specific EIL - Urban Residential and Public Open Space										170																		170			
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil				50	85	70			105						0.7																
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil				65	105	125			45						0.7																
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																															
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																															
NEPM 2013 Table 7 Res A Soil HSL for Asbestos in Soil																															
NSW 2014 General Solid Waste CT1 (No Leaching)				10	288	600			1,000						0.8																
NSW 2014 General Solid Waste SCC1 (with leached)				18	518	1,080			1,800						10																
NSW 2014 Restricted Solid Waste CT2 (No Leaching)				40	1,152	2,400			4,000						3.2																
NSW 2014 Restricted Solid Waste SCC2 (with leached)				72	2,073	4,320			7,200						23																
PFAS NEMP 3.0 (2025) Ecological Direct Exposure - all land uses																															
PFAS NEMP 3.0 (2025) Interim Ecological Indirect Exposure - all land uses																															
PFAS NEMP 3.0 (2025) HIL A - Residential with Garden/Accessible Soil																															
PFAS NEMP 3.0 (2025) HIL B - Residential with Minimal Soil Access																															
PFAS HIL A - Site Specific Exposure Scenario																															
Location Code	**Field ID**	**Date**	**Lab Report Number**																												
BH01	BH01_0_0.1	16 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	0.7	1.4	1.7	2.7	2.5	2.2	1.4	-	1.6	1.2	1.8	<0.5	3.6	<0.5	0.7	<0.5	2.5	3.4	20
	BH01_0_0.3	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	BH02/MW01_0.3_0.5	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH02/MW01_0_0.1	13 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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	0.6	<0.5	<0.5	<0.5	<0.5	0.7	1.3
	BH02/MW01_0_0.3	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH02/MW01_3_3.1	13 Jun 2025	1234275	-	-	-	-	-	-	-	<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
BH03	BH03_0-0.1	13 Jun 2025	1244298	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH03_0_0.1	16 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	0.5	0.5	1.2	0.9	0.6	<0.5	-	<0.5	<0.5	0.6	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	0.8	3.3
	BH03_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0_0.1	16 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH04_0.3_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	<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
	BH04_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC01_20250616_AQ	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QA01_20250616_AQ	16 Jun 2025	383658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0_0.1	16 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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	0.7	<0.5	<0.5	<0.5	<0.5	0.6	1.3
	QC02_20250616	16 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	0.8	1.5	1.6	2.6	2.3	2.1	0.9	-	1.5	1.4	1.6	<0.5	4.5	<0.5	0.8	<0.5	2.9	3.9	21
	QA02_20250616	16 Jun 2025	383658	<0.2	<0.5	<1	<1	<2	<1	<1	<0.1	<0.1	<0.1	0.3	0.3	0.5	<0.5	<0.5	-	0.5	0.2	-	0.3	<0.1	0.6	<0.1	0.2	<0.1	0.3	0.6	3.3
	BH05_0.3_0.4	16 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH05_0_0.5	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06	BH06_0.3_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	<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
	BH06_0_0.1	16 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH06_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07	BH07_0_0.1	16 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH07_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH08	BH08_0_0.1	13 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH08_0.3_0.4	13 Jun 2025	1234275	-	-	-	-	-	-	-	<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
	BH08_0.3_0.5	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH08_2_2.1	13 Jun 2025	1234275	-	-	-	-	-	-	-	<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
	QC01_20250613	13 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	QA01_20250613	13 Jun 2025	383658	<0.2	<0.5	<1	<1	<2	<1	<1	<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	-

Table A: Soil Analytical Results
Project Number: 69149
Project Name: Pagewood

				BTEXN							PAHs																				
				Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene_VOC	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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.1	0.1	0.1	0.1	0.05	0.5	0.5	0.5	0.5	0.2	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5
NEPM 2013 Table 1A(1) HILs Res A Soil																3	3	3													300
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0-1m				0.5	160	55			40	3																		3			
NEPM 2013 Table 1B(1-5) Site Specific EIL - Urban Residential and Public Open Space										170																		170			
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil				50	85	70			105						0.7																
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil				65	105	125			45						0.7																
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																															
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																															
NEPM 2013 Table 7 Res A Soil HSL for Asbestos in Soil																															
NSW 2014 General Solid Waste CT1 (No Leaching)				10	288	600			1,000						0.8																
NSW 2014 General Solid Waste SCC1 (with leached)				18	518	1,080			1,800						10																
NSW 2014 Restricted Solid Waste CT2 (No Leaching)				40	1,152	2,400			4,000						3.2																
NSW 2014 Restricted Solid Waste SCC2 (with leached)				72	2,073	4,320			7,200						23																
PFAS NEMP 3.0 (2025) Ecological Direct Exposure - all land uses																															
PFAS NEMP 3.0 (2025) Interim Ecological Indirect Exposure - all land uses																															
PFAS NEMP 3.0 (2025) HIL A - Residential with Garden/Accessible Soil																															
PFAS NEMP 3.0 (2025) HIL B - Residential with Minimal Soil Access																															
PFAS HIL A - Site Specific Exposure Scenario																															
Location Code	**Field ID**	**Date**	**Lab Report Number**																												
	BH08_0_0.3	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC01_20250613_AQ	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QA01_20250613_AQ	13 Jun 2025	383658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09	BH09_0_0.1	16 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH09_0_0.3	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10	BH10_0_0.1	16 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH10_0_0.3	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11	BH11/MW02_0_0.1	13 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH11/MW02_0_0.3	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH11/MW02_9.9_10	13 Jun 2025	1234275	-	-	-	-	-	-	-	<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
	BH11/MW02_FRAG	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12	BH12_0_0.1	17 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	QC01_20250617_J	13 Jun 2025	1239729	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QA01_20250617_J	17 Jun 2025	383658-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH12_0.3_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	<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
	BH12_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH12_FRAG	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13_0_0.1	17 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH13_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	BH14_0_0.1	17 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH14_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15_0.3_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	<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
	BH15_0_0.1	17 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH15_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16_0_0.1	18 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH16_0_0.3	18 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A: Soil Analytical Results
Project Number: 69149
Project Name: Pagewood

				BTEXN							PAHs																				
				Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene_VOC	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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.1	0.1	0.1	0.1	0.05	0.5	0.5	0.5	0.5	0.2	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5
NEPM 2013 Table 1A(1) HILs Res A Soil																3	3	3													300
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0-1m				0.5	160	55			40	3																		3			
NEPM 2013 Table 1B(1-5) Site Specific EIL - Urban Residential and Public Open Space										170																		170			
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil				50	85	70			105						0.7																
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil				65	105	125			45						0.7																
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																															
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																															
NEPM 2013 Table 7 Res A Soil HSL for Asbestos in Soil																															
NSW 2014 General Solid Waste CT1 (No Leaching)				10	288	600			1,000						0.8																
NSW 2014 General Solid Waste SCC1 (with leached)				18	518	1,080			1,800						10																
NSW 2014 Restricted Solid Waste CT2 (No Leaching)				40	1,152	2,400			4,000						3.2																
NSW 2014 Restricted Solid Waste SCC2 (with leached)				72	2,073	4,320			7,200						23																
PFAS NEMP 3.0 (2025) Ecological Direct Exposure - all land uses																															
PFAS NEMP 3.0 (2025) Interim Ecological Indirect Exposure - all land uses																															
PFAS NEMP 3.0 (2025) HIL A - Residential with Garden/Accessible Soil																															
PFAS NEMP 3.0 (2025) HIL B - Residential with Minimal Soil Access																															
PFAS HIL A - Site Specific Exposure Scenario																															
Location Code	**Field ID**	**Date**	**Lab Report Number**																												
BH17	BH17_0_0.1	17 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH17_0_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_0.3_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	<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
	BH18_0_0.1	17 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH18_0_0.2	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19	BH19_0.5_0.6	17 Jun 2025	1234275	-	-	-	-	-	-	-	<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
	BH19_0_0.1	17 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH19_0_0.8	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH19_FRAG	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20	BH20_0_0.1	17 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH20_0_0.2	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21/MW03_0_0.1	18 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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
	BH21/MW03_0_0.3	18 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH21/MW03_1_1.1	18 Jun 2025	1234275	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<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 A: Soil Analytical Results
Project Number: 69149
Project Name: Pagewood

				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	Hexachlorobenzene	Methoxychlor	Toxaphene	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (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	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	0.05	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1A(1) HILs Res A Soil											6	50			240				10			6		10	300	20								1
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0-1m																																		
NEPM 2013 Table 1B(1-5) Site Specific EIL - Urban Residential and Public Open Space													180																					
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																																		
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																																		
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																																		
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																																		
NEPM 2013 Table 7 Res A Soil HSL for Asbestos in Soil																																		
NSW 2014 General Solid Waste CT1 (No Leaching)																																		50
NSW 2014 General Solid Waste SCC1 (with leached)																																		50
NSW 2014 Restricted Solid Waste CT2 (No Leaching)																																		50
NSW 2014 Restricted Solid Waste SCC2 (with leached)																																		50
PFAS NEMP 3.0 (2025) Ecological Direct Exposure - all land uses																																		
PFAS NEMP 3.0 (2025) Interim Ecological Indirect Exposure - all land uses																																		
PFAS NEMP 3.0 (2025) HIL A - Residential with Garden/Accessible Soil																																		
PFAS NEMP 3.0 (2025) HIL B - Residential with Minimal Soil Access																																		
PFAS HIL A - Site Specific Exposure Scenario																																		
Location Code	**Field ID**	**Date**	**Lab Report Number**																															
BH01	BH01_0_0.1	16 Jun 2025	1234275	<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	<0.5	<0.5	<0.5	<10	<1	<1	<1	<1	<1	<1	<1	<1
	BH01_0_0.3	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	BH02/MW01_0.3_0.5	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH02/MW01_0_0.1	13 Jun 2025	1234275	<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	<0.5	<0.5	<0.5	<10	<1	<1	<1	<1	<1	<1	<1	<1
	BH02/MW01_0_0.3	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH02/MW01_3_3.1	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0-0.1	13 Jun 2025	1244298	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH03_0_0.1	16 Jun 2025	1234275	<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	<0.5	<0.5	<0.5	<10	<1	<1	<1	<1	<1	<1	<1	<1
	BH03_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0_0.1	16 Jun 2025	1234275	<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	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	BH04_0.3_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH04_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC01_20250616_AQ	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QA01_20250616_AQ	16 Jun 2025	383658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0_0.1	16 Jun 2025	1234275	<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	<0.5	<0.5	<0.5	<10	<1	<1	<1	<1	<1	<1	<1	<1
	QC02_20250616	16 Jun 2025	1234275	<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	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	QA02_20250616	16 Jun 2025	383658	<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	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	BH05_0.3_0.4	16 Jun 2025	1234275	<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	<0.5	<0.5	<0.5	<10	<1	<1	<1	<1	<1	<1	<1	<1
	BH05_0_0.5	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06	BH06_0.3_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH06_0_0.1	16 Jun 2025	1234275	<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	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	BH06_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07	BH07_0_0.1	16 Jun 2025	1234275	<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	<0.5	<0.5	<0.5	<10	<1	<1	<1	<1	<1	<1	<1	<1
	BH07_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH08	BH08_0_0.1	16 Jun 2025	1234275	<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	<0.5	<0.5	<0.5	<10	<1	<1	<1	<1	<1	<1	<1	<1
	BH08_0.3_0.4	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH08_0.3_0.5	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH08_2_2.1	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC01_20250613	13 Jun 2025	1234275	<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	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	QA01_20250613	13 Jun 2025	383658	<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	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Table A: Soil Analytical Results
Project Number: 69149
Project Name: Pagewood

				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	Hexachlorobenzene	Methoxychlor	Toxaphene	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (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	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	0.05	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1A(1) HILs Res A Soil											6	50			240				10			6		10	300	20								1
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0-1m																																		
NEPM 2013 Table 1B(1-5) Site Specific EIL - Urban Residential and Public Open Space													180																					
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																																		
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																																		
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																																		
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																																		
NEPM 2013 Table 7 Res A Soil HSL for Asbestos in Soil																																		
NSW 2014 General Solid Waste CT1 (No Leaching)																																		50
NSW 2014 General Solid Waste SCC1 (with leached)																																		50
NSW 2014 Restricted Solid Waste CT2 (No Leaching)																																		50
NSW 2014 Restricted Solid Waste SCC2 (with leached)																																		50
PFAS NEMP 3.0 (2025) Ecological Direct Exposure - all land uses																																		
PFAS NEMP 3.0 (2025) Interim Ecological Indirect Exposure - all land uses																																		
PFAS NEMP 3.0 (2025) HIL A - Residential with Garden/Accessible Soil																																		
PFAS NEMP 3.0 (2025) HIL B - Residential with Minimal Soil Access																																		
PFAS HIL A - Site Specific Exposure Scenario																																		
Location Code	**Field ID**	**Date**	**Lab Report Number**																															
	BH08_0_0.3	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC01_20250613_AQ	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QA01_20250613_AQ	13 Jun 2025	383658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09	BH09_0_0.1	16 Jun 2025	1234275	<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	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	BH09_0_0.3	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10	BH10_0_0.1	16 Jun 2025	1234275	<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	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	BH10_0_0.3	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11	BH11/MW02_0_0.1	13 Jun 2025	1234275	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.12	<0.1	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	0.06	<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
	BH11/MW02_0_0.3	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH11/MW02_9.9_10	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH11/MW02_FRAG	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12	BH12_0_0.1	17 Jun 2025	1234275	<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	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	QC01_20250617_J	13 Jun 2025	1239729	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QA01_20250617_J	17 Jun 2025	383658-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH12_0.3_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH12_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH12_FRAG	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13_0_0.1	17 Jun 2025	1234275	<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	<0.5	<0.5	<0.5	<10	<1	<1	<1	<1	<1	<1	<1	<1
	BH13_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	BH14_0_0.1	17 Jun 2025	1234275	<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	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	BH14_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15_0.3_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH15_0_0.1	17 Jun 2025	1234275	<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	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	BH15_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16_0_0.1	18 Jun 2025	1234275	<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	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	BH16_0_0.3	18 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A: Soil Analytical Results
Project Number: 69149
Project Name: Pagewood

				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	Hexachlorobenzene	Methoxychlor	Toxaphene	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (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	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	0.05	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1A(1) HILs Res A Soil											6	50			240				10			6		10	300	20								1
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0-1m																																		
NEPM 2013 Table 1B(1-5) Site Specific EIL - Urban Residential and Public Open Space													180																					
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																																		
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																																		
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																																		
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																																		
NEPM 2013 Table 7 Res A Soil HSL for Asbestos in Soil																																		
NSW 2014 General Solid Waste CT1 (No Leaching)																																		50
NSW 2014 General Solid Waste SCC1 (with leached)																																		50
NSW 2014 Restricted Solid Waste CT2 (No Leaching)																																		50
NSW 2014 Restricted Solid Waste SCC2 (with leached)																																		50
PFAS NEMP 3.0 (2025) Ecological Direct Exposure - all land uses																																		
PFAS NEMP 3.0 (2025) Interim Ecological Indirect Exposure - all land uses																																		
PFAS NEMP 3.0 (2025) HIL A - Residential with Garden/Accessible Soil																																		
PFAS NEMP 3.0 (2025) HIL B - Residential with Minimal Soil Access																																		
PFAS HIL A - Site Specific Exposure Scenario																																		
Location Code	**Field ID**	**Date**	**Lab Report Number**																															
BH17	BH17_0_0.1	17 Jun 2025	1234275	<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	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	BH17_0_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_0.3_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH18_0_0.1	17 Jun 2025	1234275	<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	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	BH18_0_0.2	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19	BH19_0.5_0.6	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH19_0_0.1	17 Jun 2025	1234275	<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	<0.5	<0.5	<0.5	<10	<1	<1	<1	<1	<1	<1	<1	<1
	BH19_0_0.8	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH19_FRAG	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20	BH20_0_0.1	17 Jun 2025	1234275	<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	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	BH20_0_0.2	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21/MW03_0_0.1	18 Jun 2025	1234275	<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	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	BH21/MW03_0_0.3	18 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH21/MW03_1_1.1	18 Jun 2025	1234275	<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	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Table A: Soil Analytical Results
Project Number: 69149
Project Name: Pagewood

				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)	Perfluorodecanesulfonic acid (PFDS)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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				0.0002	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	0.005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002
NEPM 2013 Table 1A(1) HILs Res A Soil																												
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0-1m																												
NEPM 2013 Table 1B(1-5) Site Specific EIL - Urban Residential and Public Open Space																												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																												
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																												
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																												
NEPM 2013 Table 7 Res A Soil HSL for Asbestos in Soil																												
NSW 2014 General Solid Waste CT1 (No Leaching)																												
NSW 2014 General Solid Waste SCC1 (with leached)								18																				
NSW 2014 Restricted Solid Waste CT2 (No Leaching)																												
NSW 2014 Restricted Solid Waste SCC2 (with leached)								72																				
PFAS NEMP 3.0 (2025) Ecological Direct Exposure - all land uses								10																		1		
PFAS NEMP 3.0 (2025) Interim Ecological Indirect Exposure - all land uses								0.003																		0.14		
PFAS NEMP 3.0 (2025) HIL A - Residential with Garden/Accessible Soil								0.06																	0.003	0.003		
PFAS NEMP 3.0 (2025) HIL B - Residential with Minimal Soil Access								20																	2	2		
PFAS HIL A - Site Specific Exposure Scenario								5																				
Location Code	**Field ID**	**Date**	**Lab Report Number**																									
BH01	BH01_0_0.1	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH01_0_0.3	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	BH02/MW01_0.3_0.5	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH02/MW01_0_0.1	13 Jun 2025	1234275	<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
	BH02/MW01_0_0.3	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH02/MW01_3_3.1	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0-0.1	13 Jun 2025	1244298	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH03_0_0.1	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH03_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0_0.1	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH04_0.3_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH04_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC01_20250616_AQ	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QA01_20250616_AQ	16 Jun 2025	383658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0_0.1	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC02_20250616	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QA02_20250616	16 Jun 2025	383658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH05_0.3_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH05_0_0.5	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06	BH06_0.3_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH06_0_0.1	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH06_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07	BH07_0_0.1	16 Jun 2025	1234275	<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
	BH07_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH08	BH08_0_0.1	13 Jun 2025	1234275	<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
	BH08_0.3_0.4	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH08_0.3_0.5	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH08_2_2.1	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC01_20250613	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QA01_20250613	13 Jun 2025	383658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A: Soil Analytical Results
Project Number: 69149
Project Name: Pagewood

				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)	Perfluorodecanesulfonic acid (PFDS)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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				0.0002	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	0.005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002
NEPM 2013 Table 1A(1) HILs Res A Soil																												
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0-1m																												
NEPM 2013 Table 1B(1-5) Site Specific EIL - Urban Residential and Public Open Space																												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																												
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																												
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																												
NEPM 2013 Table 7 Res A Soil HSL for Asbestos in Soil																												
NSW 2014 General Solid Waste CT1 (No Leaching)																												
NSW 2014 General Solid Waste SCC1 (with leached)								18																				
NSW 2014 Restricted Solid Waste CT2 (No Leaching)																												
NSW 2014 Restricted Solid Waste SCC2 (with leached)								72																				
PFAS NEMP 3.0 (2025) Ecological Direct Exposure - all land uses								10																			1	
PFAS NEMP 3.0 (2025) Interim Ecological Indirect Exposure - all land uses								0.003																			0.14	
PFAS NEMP 3.0 (2025) HIL A - Residential with Garden/Accessible Soil								0.06																	0.003		0.003	
PFAS NEMP 3.0 (2025) HIL B - Residential with Minimal Soil Access								20																	2		2	
PFAS HIL A - Site Specific Exposure Scenario								5																				
Location Code	**Field ID**	**Date**	**Lab Report Number**																									
	BH08_0_0.3	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC01_20250613_AQ	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QA01_20250613_AQ	13 Jun 2025	383658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09	BH09_0_0.1	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH09_0_0.3	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10	BH10_0_0.1	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH10_0_0.3	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11	BH11/MW02_0_0.1	13 Jun 2025	1234275	<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
	BH11/MW02_0_0.3	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH11/MW02_9.9_10	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH11/MW02_FRAG	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12	BH12_0_0.1	17 Jun 2025	1234275	<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
	QC01_20250617_J	13 Jun 2025	1239729	<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
	QA01_20250617_J	17 Jun 2025	383658-A	<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	0.0034	<0.0002
	BH12_0.3_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH12_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH12_FRAG	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13_0_0.1	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH13_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	BH14_0_0.1	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH14_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15_0.3_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH15_0_0.1	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH15_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16_0_0.1	18 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH16_0_0.3	18 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A: Soil Analytical Results
Project Number: 69149
Project Name: Pagewood

				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)	Perfluorodecanesulfonic acid (PFDS)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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				0.0002	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	0.005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002
NEPM 2013 Table 1A(1) HILs Res A Soil																												
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0-1m																												
NEPM 2013 Table 1B(1-5) Site Specific EIL - Urban Residential and Public Open Space																												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																												
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																												
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																												
NEPM 2013 Table 7 Res A Soil HSL for Asbestos in Soil																												
NSW 2014 General Solid Waste CT1 (No Leaching)																												
NSW 2014 General Solid Waste SCC1 (with leached)								18																				
NSW 2014 Restricted Solid Waste CT2 (No Leaching)																												
NSW 2014 Restricted Solid Waste SCC2 (with leached)								72																				
PFAS NEMP 3.0 (2025) Ecological Direct Exposure - all land uses								10																		1		
PFAS NEMP 3.0 (2025) Interim Ecological Indirect Exposure - all land uses								0.003																		0.14		
PFAS NEMP 3.0 (2025) HIL A - Residential with Garden/Accessible Soil								0.06																	0.003	0.003		
PFAS NEMP 3.0 (2025) HIL B - Residential with Minimal Soil Access								20																	2	2		
PFAS HIL A - Site Specific Exposure Scenario								5																				
Location Code	**Field ID**	**Date**	**Lab Report Number**																									
BH17	BH17_0_0.1	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH17_0_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_0.3_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH18_0_0.1	17 Jun 2025	1234275	<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
	BH18_0_0.2	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19	BH19_0.5_0.6	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH19_0_0.1	17 Jun 2025	1234275	<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
	BH19_0_0.8	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH19_FRAG	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20	BH20_0_0.1	17 Jun 2025	1234275	<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
	BH20_0_0.2	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21/MW03_0_0.1	18 Jun 2025	1234275	<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
	BH21/MW03_0_0.3	18 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BH21/MW03_1_1.1	18 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A: Soil Analytical Results
Project Number: 69149
Project Name: Pagewood

				PFAS										Ionic Balance			Asbestos											Other
				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 WA DWER PFAS (n=10)*	Sum of PFAS	Perfluorononanesulfonic acid ion	CEC	Conductivity (1:5 aqueous extract)	pH (aqueous extract)	Approximate Sample Mass	ACM Comment	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in Soil	Mass FA	Mass Asbestos in FA	Mass AF	Mass asbestos in AF	Mass Asbestos in FA & AF	Asbestos FA & AF in Soil	Moisture Content (dried @ 103°C)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/KG	mg/kg	mg/kg	MEQ/100G	US/CM	pH Units	g		g	g	% (w/w)	g	g	g	g	g	% (w/w)	%
EQL				0.0001	0.0001	0.0002	0.0002	0.0001	0.005	0.0001	0.01	0.0001	0.005	0.5	10	0.1												1
NEPM 2013 Table 1A(1) HILs Res A Soil																												
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0-1m																												
NEPM 2013 Table 1B(1-5) Site Specific EIL - Urban Residential and Public Open Space																												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																												
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																												
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																												
NEPM 2013 Table 7 Res A Soil HSL for Asbestos in Soil																					0.01						0.001	
NSW 2014 General Solid Waste CT1 (No Leaching)																												
NSW 2014 General Solid Waste SCC1 (with leached)								1.8																				
NSW 2014 Restricted Solid Waste CT2 (No Leaching)																												
NSW 2014 Restricted Solid Waste SCC2 (with leached)								7.2																				
PFAS NEMP 3.0 (2025) Ecological Direct Exposure - all land uses																												
PFAS NEMP 3.0 (2025) Interim Ecological Indirect Exposure - all land uses																												
PFAS NEMP 3.0 (2025) HIL A - Residential with Garden/Accessible Soil								0.003																				
PFAS NEMP 3.0 (2025) HIL B - Residential with Minimal Soil Access								2																				
PFAS HIL A - Site Specific Exposure Scenario								0.5																				
Location Code	**Field ID**	**Date**	**Lab Report Number**																									
BH01	BH01_0_0.1	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
	BH01_0_0.3	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	695	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH02	BH02/MW01_0.3_0.5	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	1,062	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
	BH02/MW01_0_0.1	13 Jun 2025	1234275	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	8.4	21	6.5	-	-	-	-	-	-	-	-	-	-	-	8.2
	BH02/MW01_0_0.3	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	739	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
	BH02/MW01_3_3.1	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6
BH03	BH03_0-0.1	13 Jun 2025	1244298	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26
	BH03_0_0.1	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
	BH03_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	640	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH04	BH04_0_0.1	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
	BH04_0.3_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	BH04_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	823	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
	QC01_20250616_AQ	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	850	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
	QA01_20250616_AQ	16 Jun 2025	383658	-	-	-	-	-	-	-	-	-	-	-	-	-	874.51	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH05	BH05_0_0.1	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.6
	QC02_20250616	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21
	QA02_20250616	16 Jun 2025	383658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20
	BH05_0.3_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.8
	BH05_0_0.5	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	782	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH06	BH06_0.3_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.5
	BH06_0_0.1	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
	BH06_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	776	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH07	BH07_0_0.1	16 Jun 2025	1234275	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.0
	BH07_0_0.4	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	697	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH08	BH08_0_0.1	13 Jun 2025	1234275	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	BH08_0.3_0.4	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6
	BH08_0.3_0.5	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	787	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
	BH08_2_2.1	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.4
	QC01_20250613	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.0
	QA01_20250613	13 Jun 2025	383658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18

Table A: Soil Analytical Results
Project Number: 69149
Project Name: Pagewood

	PFAS										Ionic Balance			Asbestos										Other
	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 WA DWER PFAS (n=10)*	Sum of PFAS	Perfluorononanesulfonic acid ion	CEC	Conductivity (1:5 aqueous extract)	pH (aqueous extract)	Approximate Sample Mass	ACM Comment	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in Soil	Mass FA	Mass Asbestos in FA	Mass AF	Mass asbestos in AF	Mass Asbestos in FA & AF	Asbestos FA & AF in Soil	Moisture Content (dried @ 103°C)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/KG	mg/kg	mg/kg	MEQ/100G	US/CM	pH Units	g		g	g	% (w/w)	g	g	g	g	g	% (w/w)	%
EQL	0.0001	0.0001	0.0002	0.0002	0.0001	0.005	0.0001	0.01	0.0001	0.005	0.5	10	0.1											1
NEPM 2013 Table 1A(1) HILs Res A Soil																								
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0-1m																								
NEPM 2013 Table 1B(1-5) Site Specific EIL - Urban Residential and Public Open Space																								
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																								
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																								
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																								
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																								
NEPM 2013 Table 7 Res A Soil HSL for Asbestos in Soil																		0.01					0.001	
NSW 2014 General Solid Waste CT1 (No Leaching)																								
NSW 2014 General Solid Waste SCC1 (with leached)					1.8																			
NSW 2014 Restricted Solid Waste CT2 (No Leaching)																								
NSW 2014 Restricted Solid Waste SCC2 (with leached)					7.2																			
PFAS NEMP 3.0 (2025) Ecological Direct Exposure - all land uses																								
PFAS NEMP 3.0 (2025) Interim Ecological Indirect Exposure - all land uses																								
PFAS NEMP 3.0 (2025) HIL A - Residential with Garden/Accessible Soil					0.003																			
PFAS NEMP 3.0 (2025) HIL B - Residential with Minimal Soil Access					2																			
PFAS HIL A - Site Specific Exposure Scenario					0.5																			

Location Code	Field ID	Date	Lab Report Number																							
	BH08_0_0.3	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	833	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
	QC01_20250613_AQ	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	741	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
	QA01_20250613_AQ	13 Jun 2025	383658	-	-	-	-	-	-	-	-	-	-	-	-	-	843.65	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH09	BH09_0_0.1	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.8
	BH09_0_0.3	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	846	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH10	BH10_0_0.1	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	BH10_0_0.3	16 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	778	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH11	BH11/MW02_0_0.1	13 Jun 2025	1234275	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
	BH11/MW02_0_0.3	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	824	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
	BH11/MW02_9.9_10	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
	BH11/MW02_FRAG	13 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH12	BH12_0_0.1	17 Jun 2025	1234275	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
	QC01_20250617_J	13 Jun 2025	1239729	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
	QA01_20250617_J	17 Jun 2025	383658-A	<0.0001	<0.0001	<0.0002	<0.0002	0.0034	-	0.0035	-	0.0035	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
	BH12_0.3_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.2
	BH12_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	772	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
	BH12_FRAG	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	20	Chrysotile, amosite and crocidolite asbestos detected	-	-	-	-	-	-	-	-	-	-
BH13	BH13_0_0.1	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.4
	BH13_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	639	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH14	BH14_0_0.1	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.8
	BH14_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	788	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH15	BH15_0.3_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.3
	BH15_0_0.1	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.3
	BH15_0_0.3	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	770	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH16	BH16_0_0.1	18 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.5
	BH16_0_0.3	18 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	691	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-

Table A: Soil Analytical Results
Project Number: 69149
Project Name: Pagewood

				PFAS										Ionic Balance			Asbestos											Other
				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 WA DWER PFAS (n=10)*	Sum of PFAS	Perfluorononanesulfonic acid ion	CEC	Conductivity (1:5 aqueous extract)	pH (aqueous extract)	Approximate Sample Mass	ACM Comment	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in Soil	Mass FA	Mass Asbestos in FA	Mass AF	Mass asbestos in AF	Mass Asbestos in FA & AF	Asbestos FA & AF in Soil	Moisture Content (dried @ 103°C)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/KG	mg/kg	mg/kg	MEQ/100G	US/CM	pH Units	g		g	g	% (w/w)	g	g	g	g	g	% (w/w)	%
EQL				0.0001	0.0001	0.0002	0.0002	0.0001	0.005	0.0001	0.01	0.0001	0.005	0.5	10	0.1												1
NEPM 2013 Table 1A(1) HILs Res A Soil																												
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0-1m																												
NEPM 2013 Table 1B(1-5) Site Specific EIL - Urban Residential and Public Open Space																												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																												
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																												
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																												
NEPM 2013 Table 7 Res A Soil HSL for Asbestos in Soil																				0.01						0.001		
NSW 2014 General Solid Waste CT1 (No Leaching)																												
NSW 2014 General Solid Waste SCC1 (with leached)								1.8																				
NSW 2014 Restricted Solid Waste CT2 (No Leaching)																												
NSW 2014 Restricted Solid Waste SCC2 (with leached)								7.2																				
PFAS NEMP 3.0 (2025) Ecological Direct Exposure - all land uses																												
PFAS NEMP 3.0 (2025) Interim Ecological Indirect Exposure - all land uses																												
PFAS NEMP 3.0 (2025) HIL A - Residential with Garden/Accessible Soil								0.003																				
PFAS NEMP 3.0 (2025) HIL B - Residential with Minimal Soil Access								2																				
PFAS HIL A - Site Specific Exposure Scenario								0.5																				
Location Code	**Field ID**	**Date**	**Lab Report Number**																									
BH17	BH17_0_0.1	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
	BH17_0_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	853	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH18	BH18_0.3_0.4	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	0.7	<10	6.4	-	-	-	-	-	-	-	-	-	-	-	6.5
	BH18_0_0.1	17 Jun 2025	1234275	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25
	BH18_0_0.2	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	770	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH19	BH19_0.5_0.6	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.8
	BH19_0_0.1	17 Jun 2025	1234275	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
	BH19_0_0.8	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	808	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
	BH19_FRAG	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	9	Chrysotile asbestos detected	-	-	-	-	-	-	-	-	-	-
BH20	BH20_0_0.1	17 Jun 2025	1234275	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.5
	BH20_0_0.2	17 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	919	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
BH21	BH21/MW03_0_0.1	18 Jun 2025	1234275	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
	BH21/MW03_0_0.3	18 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	765	-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
	BH21/MW03_1_1.1	18 Jun 2025	1234275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.0

Table B: TCLP Analytical Results
Project Number: 69149
Project Name: Pagewood

	Metals & Metalloids								PAH																
	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	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/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	0.005	0.05	0.05	0.01	0.001	0.01	0.05	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
NSW 2014 General Solid Waste TCLP1 (leached)	5	1	5	0.05	5	0.2	2						0.04												
NSW 2014 Restricted Solid Waste TCLP2 (leached)	20	4	20		20	0.8	8						0.16												
Location Code	**Field ID**	**Date**	**Lab Report Number**																								
BH01	BH01_0-0.1	13 Jun 2025	1239729	0.01	<0.005	<0.05	<0.05	0.26	<0.001	<0.01	0.60	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BH03	BH03_0-0.1	13 Jun 2025	1239729	<0.01	<0.005	<0.05	<0.05	0.43	<0.001	<0.01	0.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12	QA01_20250617_J	17 Jun 2025	383658-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table B: TCLP Analytical Results
Project Number: 69149
Project Name: Pagewood

					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)	Perfluorobutanesulfonic acid (PFBS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.02	0.02	0.01	0.01	0.01	0.01	0.02	0.02	0.05	0.1	0.5	0.1	0.05	0.1	0.05	0.5	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.01
NSW 2014 General Solid Waste TCLP1 (leached)									500																				
NSW 2014 Restricted Solid Waste TCLP2 (leached)									2,000																				
Location Code	**Field ID**	**Date**	**Lab Report Number**																										
BH01	BH01_0-0.1	13 Jun 2025	1239729	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0-0.1	13 Jun 2025	1239729	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12	QA01_20250617_J	17 Jun 2025	383658-B	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.05	<0.1	<0.5	<0.1	<0.05	<0.1	<0.05	<0.5	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	0.03	<0.02	<0.01

Table B: TCLP Analytical Results
Project Number: 69149
Project Name: Pagewood

	PFAS						Ionic Balance		
	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 US EPA PFAS (PFOS + PFOA)*	Sum of PFAS	pH (after HCL)	pH (Final)	pH (Initial)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pH Units	pH Units	pH Units
EQL	0.01	0.02	0.02	0.01	0.01	0.01	0.1	0.1	0.1
NSW 2014 General Solid Waste TCLP1 (leached)				50					
NSW 2014 Restricted Solid Waste TCLP2 (leached)				200					

Location Code	Field ID	Date	Lab Report Number									
BH01	BH01_0-0.1	13 Jun 2025	1239729	-	-	-	-	-	-	1.6	4.9	7.9
BH03	BH03_0-0.1	13 Jun 2025	1239729	-	-	-	-	-	-	1.5	4.9	7.6
BH12	QA01_20250617_J	17 Jun 2025	383658-B	<0.01	<0.02	<0.02	0.03	0.03	0.03	-	-	-

Table C: Asbestos Quantification Field Results
Project Number: 69149
Project Name: Pagewood

			Asbestos Field Result				
			Approximate Volume of Soil	Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil
			L	g	g	g	%w/w
EQL							
NEPM 2013 HSL Asbestos in Soil - Res A							0.01
NEPM 2013 HSL Asbestos in Soil - Res B							0.04
Sample ID	**Depth (m)**	**Date**					
BH01	0-0.3	16/06/2025	10	16500	0	0	0
BH02/MW01	0-0.3	13/06/2025	10	16500	0	0	0
BH03	0-0.4	16/06/2025	10	16500	0	0	0
BH04	0-0.4	16/06/2025	10	16500	0	0	0
BH05	0-0.5	16/06/2025	10	16500	0	0	0
BH06	0-0.4	16/06/2025	10	16500	0	0	0
BH07	0-0.4	16/06/2025	10	16500	0	0	0
BH08	0-0.3	13/06/2025	10	16500	0	0	0
BH09	0-0.3	16/06/2025	10	16500	0	0	0
BH10	0-0.3	16/06/2025	10	16500	0	0	0
BH11/MW02	0-0.3	13/06/2025	10	16500	18	2.7	0.0164
BH12	0-0.3	17/06/2025	10	16500	20	3	0.0182
BH13	0-0.3	17/06/2025	10	16500	0	0	0
BH14	0-0.3	17/06/2025	10	16500	0	0	0
BH15	0-0.3	17/06/2025	10	16500	0	0	0
BH16	0-0.3	18/06/2025	10	16500	0	0	0
BH17	0-0.4	17/06/2025	10	16500	0	0	0
BH18	0-0.2	17/06/2025	10	16500	0	0	0
BH19	0-0.8	17/06/2025	10	16500	9	1.35	0.0082
BH20	0-0.2	17/06/2025	10	16500	0	0	0
BH21/MW03	0-0.3	18/06/2025	10	16500	0	0	0

Table D: Groundwater Parameters
Project Number: 69149
Project Name: Pagewood

Sample Location ID	Sample Date	Top of Casing	Depth to Water	Standing Water Level	Total Well Depth	Dissolved Oxygen	Temperature	pH	Electrical Conductivity	Reduction Oxidation Potential	Comments
		mAHD	m btoc	m AHD	m btoc	mg/L	˚C	-	µs/cm	mV	
BH02/MW01	30/06/2025	21.554	5.800	15.754	8.7	6.45	20.8	4.84	130	121.2	clear, colourless, no sheen, no odour
BH11/MW02	30/06/2025	20.981	5.470	15.511	10.0	6.33	19.3	5.51	165	195.0	clear, light grey, no sheen, no odour
BH21/MW03	30/06/2025	20.49	5.275	15.215	10.0	6.09	18.8	5.01	149	203.2	clear, colourless, no sheen, no odour

Table E: Groundwater Analytical Results
Project Number: 69149
Project Name: Pagewood

	Metals & Metalloids								TPHs (NEPC 1999)					TRHs (NEPC 2013)							BTEXN						
	Arsenic (filtered)	Cadmium (filtered)	Chromium (III+VI) (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)	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/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.001	0.0001	0.001	0.001	0.001	0.00005	0.001	0.001	0.01	0.05	0.1	0.1	0.05	0.01	0.05	0.1	0.1	0.05	0.01	0.05	0.001	0.001	0.001	0.001	0.002	0.003	0.001
ADWG (2011) Health x 10 (Recreational) - Updated June 2025	0.1	0.02	0.5	20	0.1	0.01	0.2														0.01	8	3	6	6	6	
ANZG (2018) Marine water 95% toxicant DGVs		0.0055	0.0044	0.0013	0.0044	0.0004	0.07	0.008													0.7	0.18	0.08		0.075		0.07
NEPM 2013 Table 1A(4) Res HSL A/B GW for Vapour Intrusion, Sand																			1	1	0.8						
PFAS NEMP 3.0 (2025) Interim marine 95% species protection																											
PFAS NEMP 3.0 (2025) Interim marine 99% species protection																											

Field ID	Date	Lab Report Number																										
MW01	30 Jun 2025	1239171/1244378	<0.001	<0.0002	0.001	0.001	<0.001	<0.0001	<0.001	<0.005	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.01
MW02	30 Jun 2025	1239171/1244378	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	<0.001	<0.005	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.01
QC01_20250630	30 Jun 2025	1239171/1244378	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.01
QA01_20250630	30 Jun 2025	384779/384779-A	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.00005	<0.001	<0.001	<0.01	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	-	<0.001
MW03	30 Jun 2025	1239171/1244378	<0.001	<0.0002	0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.01
BLANK	*30 Jun 2025*	*1239171*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RINSATE	*30 Jun 2025*	*1239171*	*<0.001*	*<0.0002*	*0.001*	*<0.001*	*<0.001*	*<0.0001*	*<0.001*	*<0.005*	*<0.02*	*<0.05*	*<0.1*	*<0.1*	*<0.1*	*<0.02*	*<0.05*	*<0.1*	*<0.1*	*<0.1*	*<0.02*	*<0.05*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.002*	*<0.003*	*<0.01*
TB	*30 Jun 2025*	*1239171*	-	-	-	-	-	-	-	-	*<0.02*	-	-	-	-	*<0.02*	-	-	-	-	*<0.02*	-	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.002*	*<0.003*	*<0.01*

Table E: Groundwater Analytical Results
Project Number: 69149
Project Name: Pagewood

			PAH																
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ	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/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.0001	0.0001	0.0001	0.0001	0.0001	0.0005	0.001	0.0002	0.0001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.001
ADWG (2011) Health x 10 (Recreational) - Updated June 2025							0.0001														
ANZG (2018) Marine water 95% toxicant DGVs					0.0004		0.0002								0.0014			0.07	0.002		
NEPM 2013 Table 1A(4) Res HSL A/B GW for Vapour Intrusion, Sand																					
PFAS NEMP 3.0 (2025) Interim marine 95% species protection																					
PFAS NEMP 3.0 (2025) Interim marine 99% species protection																					
Field ID	**Date**	**Lab Report Number**																			
MW01	30 Jun 2025	1239171/1244378	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW02	30 Jun 2025	1239171/1244378	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
QC01_20250630	30 Jun 2025	1239171/1244378	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
QA01_20250630	30 Jun 2025	384779/384779-A	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	-	<0.0002	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-
MW03	30 Jun 2025	1239171/1244378	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BLANK	*30 Jun 2025*	*1239171*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RINSATE	*30 Jun 2025*	*1239171*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	-	*<0.001*	-	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
TB	*30 Jun 2025*	*1239171*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table E: Groundwater Analytical Results
Project Number: 69149
Project Name: Pagewood

			Chlorinated Alkanes																	Chlorinated Alkenes										Solvents
			1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Carbon tetrachloride	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane	Vinyl Chloride	1,1-dichloroethene	3-chloropropene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Acetone
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.005	0.005	0.005	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005
ADWG (2011) Health x 10 (Recreational) - Updated June 2025										0.03					0.03				0.04		0.003	0.3			0.6		0.5	0.6			140
ANZG (2018) Marine water 95% toxicant DGVs				0.27	0.4	1.9				1.9	0.9	1.1			0.24				4		0.1	0.7					0.07			0.33	
NEPM 2013 Table 1A(4) Res HSL A/B GW for Vapour Intrusion, Sand																															
PFAS NEMP 3.0 (2025) Interim marine 95% species protection																															
PFAS NEMP 3.0 (2025) Interim marine 99% species protection																															
Field ID	**Date**	**Lab Report Number**																													
MW01	30 Jun 2025	1239171/1244378	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
MW02	30 Jun 2025	1239171/1244378	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
QC01_20250630	30 Jun 2025	1239171/1244378	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
QA01_20250630	30 Jun 2025	384779/384779-A	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-
MW03	30 Jun 2025	1239171/1244378	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
BLANK	*30 Jun 2025*	*1239171*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RINSATE	*30 Jun 2025*	*1239171*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	-	*<0.001*	*<0.001*	*<0.001*	-	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.005*
TB	*30 Jun 2025*	*1239171*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table E: Groundwater Analytical Results
Project Number: 69149
Project Name: Pagewood

			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)	Perfluorodecanesulfonic acid (PFDS)	1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.005	0.005	0.005	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.0001	0.001	0.001
ADWG (2011) Health x 10 (Recreational) - Updated June 2025							2															10		0.3		0.08		
ANZG (2018) Marine water 95% toxicant DGVs																												
NEPM 2013 Table 1A(4) Res HSL A/B GW for Vapour Intrusion, Sand																												
PFAS NEMP 3.0 (2025) Interim marine 95% species protection							220																			0.13		
PFAS NEMP 3.0 (2025) Interim marine 99% species protection							19																			0.00023		
Field ID	**Date**	**Lab Report Number**																										
MW01	30 Jun 2025	1239171/1244378	<0.005	0.003	0.005	0.005	0.018	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	0.003	<0.001	0.012	0.002	0.0020	<0.001	<0.001
MW02	30 Jun 2025	1239171/1244378	<0.005	0.002	0.004	0.003	0.025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	0.002	<0.001	0.028	0.002	0.029	<0.001	<0.001
QC01_20250630	30 Jun 2025	1239171/1244378	<0.005	0.002	0.004	0.003	0.026	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	0.002	<0.001	0.029	0.002	0.033	<0.001	<0.001
QA01_20250630	30 Jun 2025	384779/384779-A	0.003	0.004	0.002	0.005	0.029	<0.001	<0.002	<0.002	<0.005	<0.02	<0.1	<0.01	<0.05	<0.1	<0.05	<0.5	<0.002	<0.002	-	0.003	0.001	0.035	0.003	0.038	<0.002	<0.001
MW03	30 Jun 2025	1239171/1244378	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	0.002	<0.001	0.0017	<0.001	<0.001
BLANK	*30 Jun 2025*	*1239171*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
RINSATE	*30 Jun 2025*	*1239171*	*<0.005*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.0001*	*<0.001*	*<0.001*
TB	*30 Jun 2025*	*1239171*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table E: Groundwater Analytical Results
Project Number: 69149
Project Name: Pagewood

			PFAS								MAH											Miscellaneous Hydrocarbons						
			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 WA DWER PFAS (n=10)*	Sum of PFAS	Perfluorononanesulfonic acid ion	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	Total MAH	Bromobenzene	Isopropylbenzene	1,2-dibromoethane	Bromomethane	Cyclohexane	Dibromomethane	Iodomethane	4-Methyl-2-pentanone	Methyl Ethyl Ketone
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.003	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.005	0.005
ADWG (2011) Health x 10 (Recreational) - Updated June 2025																		0.3					0.01	0.01					
ANZG (2018) Marine water 95% toxicant DGVs																						0.03							
NEPM 2013 Table 1A(4) Res HSL A/B GW for Vapour Intrusion, Sand																													
PFAS NEMP 3.0 (2025) Interim marine 95% species protection																													
PFAS NEMP 3.0 (2025) Interim marine 99% species protection																													
Field ID	**Date**	**Lab Report Number**																											
MW01	30 Jun 2025	1239171/1244378	<0.005	<0.001	<0.001	0.014	0.032	0.02	0.048	0.05	<0.001	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.005	-	<0.001	<0.001	<0.005	<0.005
MW02	30 Jun 2025	1239171/1244378	<0.005	<0.001	<0.001	0.057	0.082	0.054	0.093	0.095	<0.001	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.005	-	<0.001	<0.001	<0.005	<0.005
QC01_20250630	30 Jun 2025	1239171/1244378	<0.005	<0.001	<0.001	0.062	0.088	0.059	0.099	0.101	<0.001	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.005	-	<0.001	<0.001	<0.005	<0.005
QA01_20250630	30 Jun 2025	384779/384779-A	<0.001	<0.002	<0.002	0.073	-	0.067	-	0.12	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	-	-	-
MW03	30 Jun 2025	1239171/1244378	<0.005	<0.001	<0.001	0.0037	0.0037	0.0017	<0.005	<0.005	<0.001	<0.001	<0.001	-	-	-	-	<0.001	-	<0.003	<0.001	<0.001	<0.001	<0.005	-	<0.001	<0.001	<0.005	<0.005
BLANK	*30 Jun 2025*	*1239171*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.1*	*<0.01*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RINSATE	*30 Jun 2025*	*1239171*	*<0.005*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.001*	*<0.001*	*<0.001*	-	-	-	-	*<0.001*	-	*<0.003*	*<0.001*	*<0.001*	*<0.001*	*<0.005*	-	*<0.001*	*<0.001*	*<0.005*	*<0.005*
TB	*30 Jun 2025*	*1239171*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table E: Groundwater Analytical Results
Project Number: 69149
Project Name: Pagewood

			Chlorinated Benzenes						Trihalomethanes				Organic Sulfur Compounds	Non-Metallic Inorganics							Ionic Balance		Inorganics		Other
			1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	Dibromochloromethane	Chloroform	Tribromomethane	Bromodichloromethane	Carbon disulfide	Ammonia as N (filtered)	Nitrate (as N)	Nitrate (as N) (filtered)	Nitrite (as N)	Nitrite (as N) (filtered)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Electrical Conductivity (Lab)	pH (Lab)	Electrical Conductivity (Non Compensated)	Nitrite + Nitrate as N	TDS
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	pH Units	µS/cm	mg/L	mg/L
EQL			0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.005	0.005	0.005	0.2	0.1	10	0.1	1	0.05	5
ADWG (2011) Health x 10 (Recreational) - Updated June 2025					15		0.4	3							112.9	112.9	9.1	9.1							
ANZG (2018) Marine water 95% toxicant DGVs				0.08				0.055		0.77				0.91											
NEPM 2013 Table 1A(4) Res HSL A/B GW for Vapour Intrusion, Sand																									
PFAS NEMP 3.0 (2025) Interim marine 95% species protection																									
PFAS NEMP 3.0 (2025) Interim marine 99% species protection																									
Field ID	**Date**	**Lab Report Number**																							
MW01	30 Jun 2025	1239171/1244378	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	-	4.5	-	<0.02	-	5.2	0.7	150	6.6	-	4.5	86
MW02	30 Jun 2025	1239171/1244378	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	-	3.8	-	<0.02	-	4.5	0.7	200	6.6	-	3.8	130
QC01_20250630	30 Jun 2025	1239171/1244378	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	-	3.9	-	<0.02	-	4.8	0.9	190	6.7	-	3.9	130
QA01_20250630	30 Jun 2025	384779/384779-A	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	0.02	-	3.4	-	<0.005	-	0.1	-	6.5	180	-	130
MW03	30 Jun 2025	1239171/1244378	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	-	6.5	-	<0.02	-	7.5	1.0	180	6.0	-	6.5	120
BLANK	*30 Jun 2025*	*1239171*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RINSATE	*30 Jun 2025*	*1239171*	-	-	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.001*	-	-	-	-	-	-	-	-	-	-	-	-
TB	*30 Jun 2025*	*1239171*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix C Bore Logs (JBS&G 2025)

SOIL BOREHOLE BH01

PROJECT NUMBER 69149	**DRILLING COMPANY** Legion Drilling	**EASTING** 335947.536
PROJECT NAME Pagewood	**DRILL RIG** GeoProbe	**NORTHING** 6243477.390
CLIENT Homes NSW	**DRILLING METHOD** Push Tube	**COORD SYS** GDA 2020 MGA 56
ADDRESS 68-80 Banks Avenue	**DIAMETER**	**TOTAL DEPTH** 1.00 m bgl
DRILLING DATE 16 Jun 2025		**LOGGED BY** NB/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
PT	0.1 0.2 0.3		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of roots and rocks.	DR	BH01_0-0.1	No odours, staining or asbestos observed. 10 L asbestos quantification conducted at 0-0.3 mbgs. QA/QC01_20250616_J taken at 0-0.1 mbgs.
	0.4 0.5 0.6 0.7 0.8 0.9 1		Natural - SAND, yellow/brown, homogeneous, dry, poorly graded, medium sand loose, with no inclusions.	DR	BH01_0.30-0.40 BH01_0.50-0.60 BH01_0.90-1.00	No odours, staining or asbestos observed.
	1.1 1.2 1.3 1.4		Termination Depth at: 1.00 m bgl			

GROUNDWATER WELL BH02/MW01

PROJECT NUMBER 69149	**DRILLING COMPANY** Legion Drilling	**EASTING** 335974.350
PROJECT NAME Pagewood	**DRILL RIG** GeoProbe	**NORTHING** 6243479.657
CLIENT Homes NSW	**DRILLING METHOD** Solid Flight Auger	**COORD SYS** GDA 2020 MGA 56
ADDRESS 68-80 Banks Avenue	**TOTAL DEPTH** 10.00 m bgl	**ELEVATION**
DRILLING DATE 13 Jun 2025	**DIAMETER** 50	**LOGGED BY** NB
PERMIT NO.		**CHECKED BY** LH

COMPLETION | **CASING** | **SCREEN INTERVAL** - m bgl

COMMENTS

Drilling Method	Water (m bgl)	Well Details	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
SFA	▽		0.5		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of roots.	DR	BH02/MW01_0.0 BH02/MW01_0.3	No odours, staining or asbestos observed. 10 L asbestos quantification conducted at 0-0.3 mbgs.
			1		Fill - SAND, grey/yellow, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of roots and glass.	DR	BH02/MW01_0.5	
			1.5		Natural - SAND, grey, homogeneous, dry, poorly graded, medium sand medium dense, with no inclusions.	DR	BH02/MW01_1.0	No odours, staining or asbestos observed. 10 L asbestos quantification conducted at 0.3-0.5 mbgs.
			2					No odours, staining or asbestos observed.
			2.5				BH02/MW01_2.0	
			3		Natural - SAND, yellow/light brown/golden, homogeneous, dry, poorly graded, medium sand medium dense, with no inclusions.	DR	BH02/MW01_3.0	No odours, staining or asbestos observed.
			3.5					
			4				BH02/MW01_4.0	
			4.5		Natural - SAND, yellow/light brown, homogeneous, dry, poorly graded, medium sand medium dense, with no inclusions.	DR		No odours, staining or asbestos observed.
			5		Natural - SAND, light yellow/white, homogeneous, damp, poorly graded, medium sand medium dense, with no inclusions.	DP	BH02/MW01_5.0	No odours, staining or asbestos observed.
			5.5					
			6				BH02/MW01_6.0	
			6.5		Natural - SAND, light yellow/white, homogeneous, moist, poorly graded, medium sand medium dense, with no inclusions.	M		No odours, staining or asbestos observed.
			7				BH02/MW01_7.0	
			7.5					
			8		Natural - SAND, light grey, homogeneous, wet, poorly graded, medium sand medium dense, with no inclusions.	W	BH02/MW01_8.0	No odours, staining or asbestos observed.
			8.5					
			9				BH02/MW01_9.0	
			9.5		Natural - SAND, dark grey, homogeneous, wet, poorly graded, medium sand medium dense, with no inclusions.	W		No odours, staining or asbestos observed.
			10				BH02/MW01_9.9	
					Termination Depth at: 10.00 m bgl			

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SOIL BOREHOLE BH03

PROJECT NUMBER 69149
PROJECT NAME Pagewood
CLIENT Homes NSW
ADDRESS 68-80 Banks Avenue
DRILLING DATE 16 Jun 2025

DRILLING COMPANY Legion Drilling
DRILL RIG GeoProbe
DRILLING METHOD Push Tube
DIAMETER

EASTING 335942.953
NORTHING 6243451.758
COORD SYS GDA 2020 MGA 56
TOTAL DEPTH 1.50 m bgl
LOGGED BY NB/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
PT	0.1		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of roots, rocks and trace brick.	DR	BH03_0-0.1	No odours, staining or asbestos observed. 10 L asbestos quantification conducted at 0-0.4 mbgs. QA/QC01_20250616 taken at 0-0.1 mbgs.
	0.2					
	0.3				BH03_0.30-0.40	
	0.4		Natural - SAND, brown/grey, homogeneous, dry, poorly graded, medium sand loose, with no inclusions.	DR		No odours, staining or asbestos observed.
	0.5				BH03_0.50-0.60	
	0.6					
	0.7					
	0.8					
	0.9				BH03_0.90-1.00	
SFA	1					
	1.1					
	1.2					
	1.3					
	1.4					
	1.5		Termination Depth at: 1.50 m bgl			

SOIL BOREHOLE BH04

PROJECT NUMBER 69149
PROJECT NAME Pagewood
CLIENT Homes NSW
ADDRESS 68-80 Banks Avenue
DRILLING DATE 16 Jun 2025

DRILLING COMPANY Legion Drilling
DRILL RIG
DRILLING METHOD Hand Auger
DIAMETER

EASTING 335969.593
NORTHING 6243446.184
COORD SYS GDA 2020 MGA 56
TOTAL DEPTH 0.70 m bgl
LOGGED BY NB/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
HA	0.1 0.2 0.3 0.4		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of terracotta pieces, rocks and roots.	DR	BH04_0_0.1 BH04_0_0.4 BH04_0.00-0.10 BH04_0.3_0.4 BH04_0.30-0.40	No odours, staining or asbestos observed. 10 L asbestos quantificiation conducted at 0-0.4 mbgs.
	0.5 0.6 0.7		Natural - SAND, brown/grey, homogeneous, dry, poorly graded, medium sand loose, with no inclusions.	DR	BH04_0.50-0.60	No odours, staining or asbestos observed. QA/QC01_20250616_AQ taken at 0-0.1 mbgs
	0.8 0.9 1 1.1 1.2 1.3 1.4		Termination Depth at: 0.70 m bgl			

SOIL BOREHOLE BH05

PROJECT NUMBER 69149
PROJECT NAME Pagewood
CLIENT Homes NSW
ADDRESS 68-80 Banks Avenue
DRILLING DATE 16 Jun 2025

DRILLING COMPANY Legion Drilling
DRILL RIG GeoProbe
DRILLING METHOD Push Tube
DIAMETER

EASTING 335937.215
NORTHING 6243426.954
COORD SYS GDA 2020 MGA 56
TOTAL DEPTH 1.20 m bgl
LOGGED BY NB/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
PT	0.1 0.2 0.3 0.4 0.5		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of terracotta, gravels/rocks and roots.	DR	BH05_0_0.1 BH05_0_0.5 BH05_0.00-0.10 BH05_0.3_0.4 BH05_0.30-0.40	No odours, staining or asbestos observed. 10 L asbestos quantification conducted at 0-0.5 mbgs. QA/QC02_20250616 and QA/QC02_20250616_J taken at 0-0.1 mbgs.
SFA	0.6 0.7 0.8 0.9 1 1.1 1.2		Natural - SAND, light brown/yellow, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH05_0.50-0.60 BH05_0.90-1.00	No odours, staining or asbestos observed.
	1.3 1.4		Termination Depth at: 1.20 m bgl			

SOIL BOREHOLE BH06

PROJECT NUMBER 69149	**DRILLING COMPANY** Legion Drilling	**EASTING** 335965.995
PROJECT NAME Pagewood	**DRILL RIG**	**NORTHING** 6243421.000
CLIENT Homes NSW	**DRILLING METHOD** Hand Auger	**COORD SYS** GDA 2020 MGA 56
ADDRESS 68-80 Banks Avenue	**DIAMETER**	**TOTAL DEPTH** 0.80 m bgl
DRILLING DATE 16 Jun 2025		**LOGGED BY** NB/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
HA	0.1 0.2 0.3 0.4		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of roots, terracotta, gravels and shale.	DR	BH06_0_0.1 BH06_0_0.4 BH06_0.00-0.10 BH06_0.3_0.4 BH06_0.30-0.40	No odours, staining or asbestos observed. 10 L asbestos quantification conducted at 0-0.4 mbgs. QA/QC03_20250616_J taken at 0-0.1 mbgs.
	0.5 0.6 0.7 0.8		Natural - SAND, light brown/grey, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH06_0.50-0.60	No odours, staining or asbestos observed.
	0.9 1 1.1 1.2 1.3 1.4		Termination Depth at: 0.80 m bgl			

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SOIL BOREHOLE BH07

PROJECT NUMBER 69149
PROJECT NAME Pagewood
CLIENT Homes NSW
ADDRESS 68-80 Banks Avenue
DRILLING DATE 16 Jun 2025

DRILLING COMPANY Legion Drilling
DRILL RIG GeoProbe
DRILLING METHOD Push Tube
DIAMETER

EASTING 335933.722
NORTHING 6243404.014
COORD SYS GDA 2020 MGA 56
TOTAL DEPTH 1.10 m bgl
LOGGED BY NB/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
PT	0.1 0.2 0.3 0.4		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of sandstone gravels and roots.	DR	BH07_0_0.1 BH07_0_0.4 BH07_0.00-0.10 BH07_0.30-0.40	No odours, staining or asbestos observed. 10 L asbestos quantificiation conducted at 0-0.4 mbgs.
SFA	0.5 0.6 0.7 0.8 0.9 1 1.1		Natural - SAND, light brown/yellow, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH07_0.50-0.60 BH07_0.90-1.00	No odours, staining or asbestos observed.
	1.2 1.3 1.4		Termination Depth at: 1.10 m bgl			

SOIL BOREHOLE BH09

PROJECT NUMBER 69149	**DRILLING COMPANY** Legion Drilling	**EASTING** 335926.823
PROJECT NAME Pagewood	**DRILL RIG** GeoProbe	**NORTHING** 6243374.784
CLIENT Homes NSW	**DRILLING METHOD** Push Tube	**COORD SYS** GDA 2020 MGA 56
ADDRESS 68-80 Banks Avenue	**DIAMETER**	**TOTAL DEPTH** 1.20 m bgl
DRILLING DATE 16 Jun 2025		**LOGGED BY** NB/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
PT	0.1 0.2 0.3		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of rootlets and gravels.	DR	BH09_0_0.1 BH09_0_0.3 BH09_0.00-0.10	No odours, staining or asbestos observed. 10 L asbestos quantificiation conducted at 0-0.3 mbgs.
SFA	0.4 0.5 0.6 0.7 0.8 0.9 1 1.1 1.2		Natural - SAND, light brown, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH09_0.30-0.40 BH09_0.50-0.60 BH09_0.90-1.00	No odours, staining or asbestos observed.
	1.3 1.4		Termination Depth at: 1.20 m bgl			

SOIL BOREHOLE BH08

PROJECT NUMBER 69149
PROJECT NAME Pagewood
CLIENT Homes NSW
ADDRESS 68-80 Banks Avenue
DRILLING DATE 13 Jun 2025

DRILLING COMPANY Legion Drilling
DRILL RIG GeoProbe
DRILLING METHOD Solid Flight Auger
DIAMETER

EASTING 335961.383
NORTHING 6243401.185
COORD SYS GDA 2020 MGA 56
TOTAL DEPTH 8.00 m bgl
LOGGED BY NB/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
SFA	0.5		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of roots and trace gravels/rocks.	DR	BH08_0_0.1 BH08_0_0.3	No odours, staining or asbestos observed. 10 L asbestos quantification conducted at 0-0.3 mbgs.
				DR	BH08_0.00-0.10	
	1		Fill - SAND, light grey, heterogeneous, dry, poorly graded, medium sand loose, wirth inclusions of rootlets.	DP	BH08_0.3_0.4 BH08_0.3_0.5	No odours, staining or asbestos observed. 10 L asbestos quantification conducted at 0.3-0.5 mbgs. QA/QC01_20250613_AQ taken 0.3-0.5 mbgs.
	1.5		Natural - SAND, light brown, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.		BH08_0.30-0.40 BH08_0.50-0.60 BH08_1.00-1.10	No odours, staining or asbestos observed.
	2		Natural - SAND, light grey, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH08_2_2.1 BH08_2.00-2.10	No odours, staining or asbestos observed. QA/QC01_20250613 taken at 2.0-2.1 mbgs
	2.5					
	3		Natural - SAND, orange/brown, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH08_3.00-3.10	No odours, staining or asbestos observed. QA/QC01_20250613_J taken at 2.9-3.0 mbgs.
	3.5					
	4		Natural - SAND, light yellow/white/light brown, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP		No odours, staining or asbestos observed.
	4.5					
	5					
	5.5					
	6					
	6.5					
	7					
	7.5					
	8		Termination Depth at: 8.00 m bgl			

SOIL BOREHOLE BH10

PROJECT NUMBER 69149	**DRILLING COMPANY** Legion Drilling	**EASTING** 335955.896
PROJECT NAME Pagewood	**DRILL RIG**	**NORTHING** 6243380.722
CLIENT Homes NSW	**DRILLING METHOD** Hand Auger	**COORD SYS** GDA 2020 MGA 56
ADDRESS 68-80 Banks Avenue	**DIAMETER**	**TOTAL DEPTH** 0.70 m bgl
DRILLING DATE 16 Jun 2025		**LOGGED BY** NB/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
HA	0.1 0.2 0.3		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of roots and gravels.	DR	BH10_0_0.1 BH10_0_0.3 BH10_0.00-0.10	No odours, staining or asbestos observed. 10 L asbestos quantificiation conducted at 0-0.3 mbgs.
	0.4 0.5 0.6 0.7		Natural - SAND, grey/light brown, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH10_0.30-0.40 BH10_0.50-0.60	No odours, staining or asbestos observed.
	0.8 0.9 1 1.1 1.2 1.3 1.4		Termination Depth at: 0.70 m bgl			

GROUNDWATER WELL BH11/MW02

PROJECT NUMBER 69149	**DRILLING COMPANY** Legion Drilling	**EASTING** 335920.450
PROJECT NAME Pagewood	**DRILL RIG** GeoProbe	**NORTHING** 6243348.419
CLIENT Homes NSW	**DRILLING METHOD** Solid Flight Auger	**COORD SYS** GDA 2020 MGA 56
ADDRESS 68-80 Banks Avenue	**TOTAL DEPTH** 10.00 m bgl	**ELEVATION**
DRILLING DATE 13 Jun 2025	**DIAMETER**	**LOGGED BY** NB
PERMIT NO.		**CHECKED BY** LH

COMPLETION | **CASING** | **SCREEN INTERVAL** - m bgl

COMMENTS

Drilling Method	Water (m bgl)	Well Details	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
SFA	▽		0.5, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand very loose, with no inclusions.	DR	BH11/MW02_0.0	No odours or staining observed. Potential ACM fragment observed. 10 L asbestos quantification conducted at 0-0.3 mbgs. QA/QC01_20250613_J at 0-0.1 mbgs.
					Natural - SAND, brown/yellow, homogeneous, damp, poorly graded, medium sand dense, with no inclusions.	DP	BH11/MW02_0.3 BH11/MW02_0.5	
					Natural - SAND, light grey/yellow/light brown, homogeneous, damp, poorly graded, medium sand dense, with no inclusions.	DP	BH11/MW02_1.0	No odours, staining or asbestos observed.
					Natural - SAND, grey, homogeneous, moist, poorly graded, medium sand dense, with no inclusions.	M	BH11/MW02_2.0	No odours, staining or asbestos observed. No odours, staining or asbestos observed.
					Natural - SAND, dark brown, homogeneous, moist, poorly graded, medium sand dense, with no inclusions.	M	BH11/MW02_3.0 BH11/MW02_4.0	No odours, staining or asbestos observed.
					Natural - SAND, yellow/light brown, homogeneous, moist, poorly graded, medium sand dense, with no inclusions.	M	BH11/MW02_5.0 BH11/MW02_6.0	No odours, staining or asbestos observed.
					Natural - SAND, yellow/light brown, homogeneous, wet, poorly graded, medium sand dense, with no inclusions.	W	BH11/MW02_7.0	No odours, staining or asbestos observed.
					Natural - SAND, light grey, homogeneous, wet, poorly graded, medium sand dense, with no inclusions.	W	BH11/MW02_8.0	No odours, staining or asbestos observed.
					Natural - SAND, dark grey, homogeneous, saturated, poorly graded, medium sand dense, with no inclusions.	S	BH11/MW02_9.0 BH11/MW02_9.9	No odours, staining or asbestos observed.
					Termination Depth at: 10.00 m bgl			

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SOIL BOREHOLE BH12

PROJECT NUMBER 69149	**DRILLING COMPANY** Legion Drilling	**EASTING** 335947.419
PROJECT NAME Pagewood	**DRILL RIG**	**NORTHING** 6243352.898
CLIENT Homes NSW	**DRILLING METHOD** Hand Auger	**COORD SYS** GDA 2020 MGA 56
ADDRESS 68-80 Banks Avenue	**DIAMETER**	**TOTAL DEPTH** 0.80 m bgl
DRILLING DATE 17 Jun 2025		**LOGGED BY** NB/NP/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
HA	0.1 0.2 0.3		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of roots and gravels.	DR	BH12_0_0.1 BH12_0_0.3 BH12_0.00-0.10 BH12_0.3_0.4	No odours or staining observed. Potential ACM fragment observed (BH12_FRAG). 10 L asbestos quantification conducted at 0-0.3 mbgs. QA/QC01_20250617 and QA/QC01_20250617_J taken at 0-0.1 mbgs.
	0.4 0.5 0.6 0.7 0.8		Natural - SAND, light brown/yellow, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH12_0.30-0.40 BH12_0.50-0.60	No odours, staining or asbestos observed.
	0.9 1 1.1 1.2 1.3 1.4		Termination Depth at: 0.80 m bgl			

SOIL BOREHOLE BH13

PROJECT NUMBER 69149
PROJECT NAME Pagewood
CLIENT Homes NSW
ADDRESS 68-80 Banks Avenue
DRILLING DATE 17 Jun 2025

DRILLING COMPANY Legion Drilling
DRILL RIG GeoProbe
DRILLING METHOD Push Tube
DIAMETER

EASTING 335915.818
NORTHING 6243320.198
COORD SYS GDA 2020 MGA 56
TOTAL DEPTH 1.00 m bgl
LOGGED BY NB/NP/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
PT	0.1 0.2 0.3		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, fine sand loose, with inclusions of roots.	DR	BH13_0_0.1 BH13_0_0.3 BH13_0.00-0.10	No odours, staining or asbestos observed. 10 L asbestos quantificiation conducted at 0-0.3 mbgs.
SFA	0.4 0.5 0.6 0.7 0.8 0.9 1		Natural - SAND, light brown, homogeneous, dry, poorly graded, medium sand loose, with no inclusions.	DR	BH13_0.30-0.40 BH13_0.50-0.60 BH13_0.90-1.00	No odours, staining or asbestos observed.
	1.1 1.2 1.3 1.4		Termination Depth at: 1.00 m bgl			

SOIL BOREHOLE BH14

PROJECT NUMBER 69149
PROJECT NAME Pagewood
CLIENT Homes NSW
ADDRESS 68-80 Banks Avenue
DRILLING DATE 17 Jun 2025

DRILLING COMPANY Legion Drilling
DRILL RIG GeoProbe
DRILLING METHOD Push Tube
DIAMETER

EASTING 335942.807
NORTHING 6243325.247
COORD SYS GDA 2020 MGA 56
TOTAL DEPTH 1.20 m bgl
LOGGED BY NB/NP/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
PT	0.1 0.2 0.3		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, fine sand loose, with inclusions of roots and trace gravels.	DR	BH14_0_0.1 BH14_0_0.3 BH14_0.00-0.10	No odours, staining or asbestos observed. 10 L asbestos quantificiation conducted at 0-0.3 mbgs.
	0.4		Natural - SAND, grey, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH14_0.30-0.40	No odours, staining or asbestos observed.
SFA	0.5 0.6 0.7 0.8 0.9 1 1.1 1.2		Natural - SAND, light brown, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH14_0.50-0.60 BH14_0.90-1.00	No odours, staining or asbestos observed.
	1.3 1.4		Termination Depth at: 1.20 m bgl			

SOIL BOREHOLE BH15

PROJECT NUMBER 69149	**DRILLING COMPANY** Legion Drilling	**EASTING** 335937.394
PROJECT NAME Pagewood	**DRILL RIG** GeoProbe	**NORTHING** 6243305.860
CLIENT Homes NSW	**DRILLING METHOD** Solid Flight Auger	**COORD SYS** GDA 2020 MGA 56
ADDRESS 68-80 Banks Avenue	**DIAMETER**	**TOTAL DEPTH** 1.30 m bgl
DRILLING DATE 17 Jun 2025		**LOGGED BY** NB/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
PT	0.1		Fill - Silty SAND, drk brown, heterogeneous, dry, poorly graded, fine sand loose, with inclusions of roots, trace gravels and glass.	DR	BH15_0_0.1 BH15_0_0.3 BH15_0.00-0.10	No odours, staining or asbestos observed. 10 L asbestos quantificiation conducted at 0-0.3 mbgs.
	0.2					
	0.3				BH15_0.3_0.4	
	0.4		Natural - SAND, grey, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH15_0.30-0.40	No odours, staining or asbestos observed.
	0.5		Natural - SAND, light brown/yellow, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH15_0.50-0.60	No odours, staining or asbestos observed. QA/QC02_20250617_J taken at 0.5-0.6 mbgs.
SFA	0.6					
	0.7					
	0.8					
	0.9				BH15_0.90-1.00	
	1					
	1.1					
	1.2					
	1.3					
	1.4		Termination Depth at: 1.30 m bgl			

SOIL BOREHOLE BH16

PROJECT NUMBER 69149
PROJECT NAME Pagewood
CLIENT Homes NSW
ADDRESS 68-80 Banks Avenue
DRILLING DATE 18 Jun 2025

DRILLING COMPANY Legion Drilling
DRILL RIG GeoProbe
DRILLING METHOD Hollow Flight Auger
DIAMETER

EASTING 335910.076
NORTHING 6243298.136
COORD SYS GDA 2020 MGA 56
TOTAL DEPTH 8.00 m bgl
LOGGED BY NB/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
SFA	0		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of trace gravels and rootlets.	DR	BH16_0_0.1 BH16_0_0.3	No odours, staining or asbestos observed. 10 L asbestos quantification conducted at 0-0.3 mbgs. QA/QC01_20250618_J taken at 0-0.1 mbgs.
	0.5		Natural - SAND, light brown/orange, homogeneous, dry, poorly graded, medium sand loose, with no inclusions.	DR	BH16_0.00-0.10 BH16_0.30-0.40 BH16_0.50-0.60	
	1		Natural - SAND, light grey/yellow, homogeneous, dry, poorly graded, medium sand loose, with no inclusions.	DR	BH16_1.00-1.10	No odours, staining or asbestos observed.
	1.5					No odours, staining or asbestos observed.
	2		Natural - SAND, brown/yellow, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH16_2.00-2.10	No odours, staining or asbestos observed.
	2.5					
	3		Natural - SAND, light brown/yellow, homogeneous, damp, poorly graded, medium sand medium dense, with no inclusions.	DP	BH16_3.00-3.10	No odours, staining or asbestos observed.
	3.5					
	4		Natural - SAND, light brown/yellow, homogeneous, damp-moist, poorly graded, medium sand medium dense, with no inclusions.	DP		No odours, staining or asbestos observed.
	4.5					
	5		Natural - SAND, light brown/yellow, homogeneous, moist, poorly graded, medium sand medium dense, with no inclusions.	M		No odours, staining or asbestos observed.
	5.5					
	6		Natural - SAND, light brown/yellow, homogeneous, wet, poorly graded, medium sand loose, with no inclusions.	W		No odours, staining or asbestos observed.
	6.5					
	7		Natural - SAND, light brown/yellow, homogeneous, saturated, poorly graded, medium sand loose, with no inclusions.	S		No odours, staining or asbestos observed.
	7.5		Natural - SAND, dark brown/black, homogeneous, saturated, poorly graded, medium sand loose, with no inclusions.	S		No odours, staining or asbestos observed.
	8		Termination Depth at: 8.00 m bgl			

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SOIL BOREHOLE BH17

PROJECT NUMBER 69149
PROJECT NAME Pagewood
CLIENT Homes NSW
ADDRESS 68-80 Banks Avenue
DRILLING DATE 17 Jun 2025

DRILLING COMPANY Legion Drilling
DRILL RIG GeoProbe
DRILLING METHOD Push Tube
DIAMETER

EASTING 335907.246
NORTHING 6243275.733
COORD SYS GDA 2020 MGA 56
TOTAL DEPTH 1.00 m bgl
LOGGED BY NB/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
PT	0.1 0.2 0.3 0.4		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of roots.	DR	BH17_0_0.1 BH17_0_0.4 BH17_0.00-0.10 BH17_0.30-0.40	No odours, staining or asbestos observed. 10 L asbestos quantificiation conducted at 0-0.4 mbgs.
SFA	0.5 0.6 0.7 0.8 0.9 1		Natural - SAND, light grey, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH17_0.50-0.60 BH17_0.90-1.00	No odours, staining or asbestos observed.
	1.1 1.2 1.3 1.4		Termination Depth at: 1.00 m bgl			

SOIL BOREHOLE BH18

PROJECT NUMBER 69149
PROJECT NAME Pagewood
CLIENT Homes NSW
ADDRESS 68-80 Banks Avenue
DRILLING DATE 17 Jun 2025

DRILLING COMPANY Legion Drilling
DRILL RIG
DRILLING METHOD Hand Auger
DIAMETER

EASTING 335934.563
NORTHING 6243279.776
COORD SYS GDA 2020 MGA 56
TOTAL DEPTH 0.80 m bgl
LOGGED BY NB/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
HA	0.1		Fill - Silty SAND, dark brown/grey, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of roots.	DR	BH18_0_0.1 BH18_0_0.2 BH18_0.00-0.10	No odours, staining or asbestos observed. 10 L asbestos quantification conducted at 0-0.2 mbgs.
	0.2		Natural - SAND, light grey, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH18_0.3_0.4 BH18_0.30-0.40 BH18_0.50-0.60	No odours, staining or asbestos observed. QA/QC02_20250617 and QA/QC04_20250617_J taken at 0.3-0.4 mbgs.
	0.3					
	0.4					
	0.5					
	0.6					
	0.7					
	0.8		Termination Depth at: 0.80 m bgl			
	0.9					
	1					
	1.1					
	1.2					
	1.3					
	1.4					

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SOIL BOREHOLE BH19

PROJECT NUMBER 69149	**DRILLING COMPANY** Legion Drilling	**EASTING** 335921.160
PROJECT NAME Pagewood	**DRILL RIG**	**NORTHING** 6243261.512
CLIENT Homes NSW	**DRILLING METHOD** Hand Auger	**COORD SYS** GDA 2020 MGA 56
ADDRESS 68-80 Banks Avenue	**DIAMETER**	**TOTAL DEPTH** 1.20 m bgl
DRILLING DATE 17 Jun 2025		**LOGGED BY** NB/NP/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
HA	0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8		Fill - Silty SAND, dark brown/grey, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of roots, gravels, glass, tile and brick.	DR	BH19_0_0.1 BH19_0_0.8 BH19_0.00-0.10 BH19_0.30-0.40 BH19_0.5_0.6 BH19_0.50-0.60	No odours or staining observed. Potential ACM fragment observed (BH19_FRAG). 10 L asbestos quantification conducted at 0-0.8 mbgs.
	0.9 1 1.1 1.2		Natural - SAND, light grey, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH19_1.00-1.10	No odours, staining or asbestos observed.
	1.3 1.4		Termination Depth at: 1.20 m bgl			

SOIL BOREHOLE BH20

PROJECT NUMBER 69149	**DRILLING COMPANY** Legion Drilling	**EASTING** 335900.317
PROJECT NAME Pagewood	**DRILL RIG** GeoProbe	**NORTHING** 6243251.007
CLIENT Homes NSW	**DRILLING METHOD** Solid Flight Auger	**COORD SYS** GDA 2020 MGA 56
ADDRESS 68-80 Banks Avenue	**DIAMETER**	**TOTAL DEPTH** 1.00 m bgl
DRILLING DATE 17 Jun 2025		**LOGGED BY** NB/NP/LH

COMMENTS

Drilling Method	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
PT	0.1		Fill - Silty SAND, dark brown/grey, heterogeneous, dry, poorly graded, medium sand loose, with inclusions of roots, rocks/gravels and terracotta pieces.	DR	BH20_0_0.1 BH20_0_0.2 BH20_0.00-0.10	No odours, staining or asbestos observed. 10 L asbestos quantification conducted at 0-0.2 mbgs.
	0.2		Natural - SAND, light grey, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP		No odours, staining or asbestos observed. QA/QC03_20250617_J taken at 0.3-0.4 mbgs.
	0.3				BH20_0.30-0.40	
SFA	0.4					
	0.5				BH20_0.50-0.60	
	0.6					
	0.7					
	0.8					
	0.9				BH20_0.90-1.00	
	1		Termination Depth at: 1.00 m bgl			
	1.1					
	1.2					
	1.3					
	1.4					

GROUNDWATER WELL BH21/MW03

PROJECT NUMBER 69149	**DRILLING COMPANY** Legion Drilling	**EASTING** 335924.606
PROJECT NAME Pagewood	**DRILL RIG** GeoProbe	**NORTHING** 6243237.412
CLIENT Homes NSW	**DRILLING METHOD** Hollow Flight Auger	**COORD SYS** GDA 2020 MGA 56
ADDRESS 68-80 Banks Avenue	**TOTAL DEPTH** 10.00 m bgl	**ELEVATION** m AHD
DRILLING DATE 18 Jun 2025	**DIAMETER**	**LOGGED BY** NB/NP
PERMIT NO.		**CHECKED BY** LH

COMPLETION | **CASING** | **SCREEN INTERVAL** - m bgl

COMMENTS

Drilling Method	Water (m bgl)	Well Details	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	Additional Observations
HFA	▽		0.5		Fill - Silty, clayey SAND, dark brown, heterogeneous, damp, poorly graded, fine sand loose, with inclusions of roots and gravels.	DP	BH21/MW03_0.0 BH21/MW03_0.3 BH21/MW03_0.5	No odours, staining or asbestos observed. 10 L asbestos quantification conducted at 0-0.3 mbgs.
			1		Natural - SAND, dark grey, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP		No odours, staining or asbestos observed.
			1.5		Natural - SAND, light brown/yellow, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.		BH21/MW03_1.0	No odours, staining or asbestos observed.
			2		Natural - SAND, light greyish, homogeneous, damp, poorly graded, medium sand loose, with no inclusions.	DP	BH21/MW03_2.0	No odours, staining or asbestos observed.
			3		Natural - SAND, light grey/light yellow, homogeneous, moist, poorly graded, medium sand medium dense, with no inclusions.	M	BH21/MW03_3.0	No odours, staining or asbestos observed.
			4		Natural - SAND, light grey/light yellow, homogeneous, moist, poorly graded, medium sand medium dense, with no inclusions.	M	BH21/MW03_4.0 BH21/MW03_5.0	No odours, staining or asbestos observed.
			6		Natural - SAND, light grey/light yellow, homogeneous, wet, poorly graded, medium sand medium dense, with no inclusions.	W	BH21/MW03_6.0	No odours, staining or asbestos observed.
			7		Natural - SAND, light grey/light yellow, homogeneous, wet, poorly graded, medium sand loose, with no inclusions.	W	BH21/MW03_7.0 BH21/MW03_8.0 BH21/MW03_9.0	No odours, staining or asbestos observed.
			9.5		Natural - SAND, dark brown/black, homogeneous, saturated, poorly graded, medium sand loose, with no inclusions.	S	BH21/MW03_9.9	No odours, staining or asbestos observed.
			10		Termination Depth at: 10.00 m bgl			

Disclaimer This log is intended for environmental not geotechnical purposes.

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Appendix D Materials Tracking System Sheets Example

Material Classification Form (example)

CF 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 m³
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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