Sydney Environmental Group

Site Validation Report

SCAW Gate 2, Patons Lane Compound, Zone 1 and 2 Stockpiling Areas, Orchard Hills NSW

CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV)

Report No: 1870-SVR-02-110924.v3f

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Document Title:	Site Validation Report: AEC31a - SCAW Gate 2, Patons Lane Compound, Orchard Hills NSW
Site Address:	AEC31a - SCAW Gate 2, Patons Lane Compound, Orchard Hills NSW
Client Name:	CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV)
Site Size:	**Zone 1**: 1,800 m^2 **Zone 2**: 3,220 m^2 **UF01**: 575 m^2
Reference Number:	1870-SVR-02-110924.v2f
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EXECUTIVE SUMMARY

Sydney Environmental Group (SE) was engaged by CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV) (the client) to prepare a Site Validation Report (SVR) for the site located within SCAW Project Gate 2, Patons Lane Compound, Orchard Hills NSW (refer to **Figure 1** with the 'site' boundaries outlined in **Figure 2**).

SE has the following project appreciation:

- The site forms a portion (AEC31/31a) of the Sydney Metro, Western Sydney Airport Development;
- During topsoil stripping works along the proposed rail alignment, an unexpected find 'UF01' comprising asbestos impacted fill materials was encountered;
- Subsequent investigation of the fill materials undertaken by Douglas Partners on 24 August 2023 confirmed the presence of asbestos fibre cement fragments and revealed heavy metal impacts (lead, zinc and copper) above the site assessment criteria;
- A Remediation Works Plan (RWP) was prepared by Douglas Partners on 7 December 2023 for the remediation and validation of 'UF01';
- Soil materials associated with 'UF01' were excavated and temporarily stockpiled prior to offsite disposal;
- SE undertook a Waste Classification Assessment for spoil materials associated with the remediation of 'UF01' within each of the stockpiling areas (designated as Zone 1 and Zone 2) in June 2024;
- Off-site disposal works were completed in Zone 1 on 18-19 July 2024 and in Zone 2 on 20-23 August 2024; and
- The client requires a site validation report (SVR) of remediation works undertaken.

The objective of this project is to:

- Prepare a site validation report to address the remedial goal identified in the RAP for the site, in the context of the proposed land use scenario.

SE undertook the following scope of works to address the project objective:

- A desktop review of the previous contamination assessments, Remedial Action Plan (RAP) and other relevant documentation pertaining to the current contamination status and remediation requirements of the site;
- Fieldwork including partial remediation supervision and intrusive sampling;
- Laboratory analysis; and
- Data assessment and reporting.

Fill materials ('UF01') encountered during topsoil stripping works within the proposed rail alignment were identified as impacted by asbestos fibre cement fragments and heavy metals (Zinc, Copper and lead).

A total of approximately 1,335 m^3 of fill materials were excavated and removed from 'UF01'. Two stockpiling areas were established for the temporary storage of spoil associated with remediation works. 385 m^3 of stockpiled fill materials were relocated to Zone 1, and 950 m^3 of soil materials to Zone 2. Following the completion of excavation works within 'UF01', the residual surface soils with the resultant excavation was subject to a visual inspection and soil validation sampling.

Stockpiled materials associated with 'UF01' were classified prior to disposal off-site at a licenced waste receiving facility. Loadout works were undertaken across 18 and 19 July 2024 in Zone 1 and 20 to 23 August 2024 in Zone 2. Following the completion of load out works, a systematic grid based visual inspection of the residual soil surface was completed by a licenced asbestos assessor.

Records provided by the client indicate that a total of 669.18 tonnes of asbestos contaminated soil were reported as being removed for offsite disposal during remediation works from Zone 1. Waste disposal records indicate that the waste was transported to Blacktown Waste Services Pty Ltd, 25 Harris Avenue, Marsden Park NSW or Cleanaway Pty Ltd, 1725 Elizabeth Drive, Kemps Creek NSW.

Records provided by the client indicate that a total of 2238.02 tonnes of asbestos contaminated soil were reported as being removed for offsite disposal during remediation works from Zone 2. Waste disposal records indicate that the waste was transported to Blacktown Waste Services Pty Ltd, 25 Harris Avenue, Marsden Park NSW.

All waste disposal and related tipping dockets associated with the remediation works are presented in **Appendix B – Waste Documentation**.

Based on a review of the historical contamination assessment reports provided, observations made on site by SE, and an assessment of remediation works and validation laboratory analytical data in the context of the proposed redevelopment scenario, SE makes the following conclusions:

- The detected concentrations of contaminants in the assessed soils on site are unlikely to present an unacceptable direct contact, human health inhalation, ecological or aesthetic risk;
- The remedial goal has been achieved; and
- The site is considered suitable (from a contamination perspective) for the proposed land use as a rail corridor, embankments/ noise barriers, stabling yard, and maintenance facility (recreational/public open space and commercial industrial).

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LIST OF ABBREVIATIONS

A list of the common abbreviations used throughout this report is provided below:

AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
AST	Aboveground storage tank
BGS	Below ground surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
CoC	Chain of Custody
CSM	Conceptual Site Model
DSI	Detailed Site Investigation
EC	Electrical conductivity
EIL	Ecological Investigation Level
EPA	Environment Protection Authority
HIL	Health Investigation Levels
HSL	Health Screening Levels
LOR	[Laboratory] Limit of reporting
NATA	National Association of Testing Laboratories
N/A	Not applicable
ND	Not detected
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NSW EPA	NSW Environment Protection Authority
OCP	Organochlorine Pesticide
OPP	Organophosphorus Pesticide
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PID	Photo-ionisation detector
PSI	Preliminary Site Investigation
QA/QC	Quality assurance/Quality control
RPD	Relative percentage difference
SAQP	Sampling Analysis and Quality Plan
SE	Sydney Environmental Group Pty Ltd
SVOC	Semi-volatile organic compound
TPH	Total petroleum hydrocarbon
UST	Underground storage tank
VOC	Volatile organic compound

1 INTRODUCTION

1.1 Background

Sydney Environmental Group (SE) was engaged by CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV) (the client) to prepare a site validation report (SVR) for the site located within SCAW Project Gate 2, Patons Lane Compound, Orchard Hills NSW (refer **Figure 1** with the 'site' boundaries outlined in **Figure 2**).

SE has the following project appreciation:

- The site forms a portion (AEC31/31a) of the Sydney Metro, Western Sydney Airport Development;
- During topsoil stripping works along the proposed rail alignment, an unexpected find 'UF01' comprising asbestos impacted fill materials was encountered;
- Subsequent investigation of the fill materials undertaken by Douglas Partners on 24 August 2023 confirmed the presence of asbestos fibre cement fragments and revealed heavy metal impacts (lead, zinc and copper) above the site assessment criteria;
- A Remediation Works Plan (RWP) was prepared by Douglas Partners on 7 December 2023 for the remediation and validation of 'UF01';
- Soil materials associated with 'UF01' were excavated and temporarily stockpiled prior to offsite disposal;
- SE undertook a Waste Classification Assessment for spoil materials associated with the remediation of 'UF01' within each of the stockpiling areas (designated as Zone 1 and Zone 2) in June 2024;
- Off-site disposal works were completed in Zone 1 on 18-19 July 2024 and in Zone 2 on 20-23 August 2024; and
- The client requires a site validation report (SVR) of remediation works undertaken.

1.2 Objectives

The objective of this project is to:

- Prepare a site validation report to address the remedial goal in the RAP for the site, in the context of the proposed land use scenario.

1.3 Scope of Work

SE undertook the following scope of works to address the project objective:

- A desktop review of the previous contamination assessments, Remedial Action Plan (RAP) and other relevant documentation pertaining to the current contamination status and remediation requirements of the site;
- Fieldwork including partial remediation supervision and intrusive sampling;
- Laboratory analysis; and
- Data assessment and reporting.

2 SITE IDENTIFICATION

The site identification details and associated information are presented in **Table 2.1.**

Table 2.1. Site Identification Information

Attribute	Description
Street Address	SCAW Project Gate 2, Patons Lane Compound Zone 1 and 2 Stockpiling Areas, Orchard Hills NSW
Lot and Deposited Plan (DP)	**UF1:** Lot 131 DP1276954; Lot 61 DP1276955 **Zone 1**: Lot 83 DP29388 **Zone 2**: Lot 61 DP1276955
Geographical Coordinates	**Zone 1**: -33°52'34"S 150°44'35.24"E (Centre of Site) **Zone 2**: -33°47’58”S 150°45’08.67”E (Centre of Site)
Site Area	**Zone 1:** 1,800 m^2 **Zone 2:** 3,220 m^2 **UF01:** 575 m^2
Local Government Area (LGA)	Penrith City Council
Zoning	RU4: Primary Production Small Lots *Penrith Local Environmental Plan 2010*

The locality of the site is set out in **Figure 1**.

The general layout and boundary of each site is set out in **Figure 2** and **Figure 3**.

3 GEOLOGY, ACID SULPHATE SOILS, TOPOGRAPHY AND HYDROGEOLOGY

Regional geology, topography, soil landscape and hydrogeological information are presented in **Table 3.1.**

Table 3.1. Regional Setting Information

Attribute	Description
Climate	A review of the closest weather station to the site (Orchard Hills Treatment Works, ID: 067084) indicated that the climate is relatively mild with average maximum temperatures ranging from 17.2 – 28.5 °C and minimum temperatures ranging from 5.3 – 17.4 °C throughout the year. Rainfall is relatively varied across the year, ranging from 3.8 days of rain per month in August, to 8.7 average days of rainfall per month in January and February. Average monthly rainfall varied from 36.8 mm in September up to 113.2 mm in February.
Geology	A review of the soil landscapes layer accessed on the Environment NSW 'eSpade V2.2' web application (environment.nsw.gov.au/eSpade2WebApp, accessed 11 June 2024), indicated that the site is underlain by Wianamatta Group Ashfield Shale consisting of laminite and dark grey siltstone, Bringelly Shale which consists of shale with occasional calcareous claystone, laminite and infrequent coal, and Minchinbury Sandstone consisting of fine to medium-grained quartz lithic sandstone.
Acid Sulfate Soils	A review of the acid sulfate soil risk mapping layer accessed on the Environment NSW 'eSpade V2.2' web application (environment.nsw.gov.au/eSpade2WebApp, accessed 11 June 2024 indicated that the site is located in an area classed as '**No Known Occurrence**' for which acid sulfate soils could be encountered in these environments. As land management activities will not affected by acid sulfate soil materials. Further assessment of acid sulfate soils in the context of this investigation is considered by SE as not warranted.
Topography	Generally, the local landscape consists of gently undulating rises with local relief from 10 m to 30 m and slopes generally > 5 % up to 10 %. Crests and ridges are broad and rounded with convex upper slopes grading into concave lower slopes The site is located at an elevation approximately 63 m to 52 m Australian Height Datum (AHD) and gently sloping to the south.
Hydrology and Hydrogeology	Surface water courses proximal to the site include an unnamed tributary of Badgerys Creek that runs directly through the eastern portion of site and Badgerys Creek located approximately 1.1 km east of the site. Several manmade dams are located on neighbouring sites. Based on the site topography and distances to the nearest surface water course, groundwater flow in the vicinity of the site is considered likely to be towards the west then south. SE's search of the NSW Department of Primary Industries Groundwater database for the region indicates there are no groundwater bores are located within a 500 m radius of the site.
Adjacent Sensitive Receptors	A review of the Bureau of Meteorology Groundwater Dependent Ecosystem Map was undertaken to determine the closest sensitive ecological receptors. The closest ecological receptors are several manmade dams are located on neighbouring sites. The next closes ecological receptor is Badgerys Creek, located approximately 1.1 km of the site. The closest sensitive human receptors are the residential properties surrounding the site's boundary and any future onsite construction workers/ builders.

4 PREVIOUS CONTAMINATION REPORTS

The following report was considered during the undertaking of this project:

- Douglas Partners (Douglas Partners 2023), *'Remediation Works Plan for Unexpected Find (UF1) at Area of Environmental Concern (AEC) 31a Surface & Civil Alignment Works (SCAW) Package for Sydney Metro – Western Sydney Airport (SMWSA) Sweetwater Grove, Orchard Hills* Dated 7 December 2023, Ref No: 204814.01.RAP.007 (Rev 1).

A summary of DP 2023 is provided below.

4.1 Douglas Partners 2023 - Remediation Works Plan

Douglas Partners Pty Ltd (DP) has prepared this Remediation Works Plan (RWP) for the remediation and validation of an unexpected find (UF1), located at the southern end of Area of Environmental Concern (AEC) 31a, Sweetwater Grove, Orchard Hills.

It is understood that during earthworks for Surface & Civil Alignment Works (SCAW) for Sydney Metro – Western Sydney Airport (SMWSA), soil with notable proportions of anthropogenic materials was uncovered at the southern end of AEC 31a. The unexpected find was investigated by DP and reported in:

- DP, *Investigation of Unexpected Find (UF1) at Area of Environmental Concern (AEC) 31a, Surface & Civil Alignment Works (SCAW) Package for Sydney Metro – Western Sydney Airport (SMWSA), Sweetwater Grove, Orchard Hills,* ref.: 204814.01.WC.004.Rev0, dated 24 August 2023 (DP, 2023b).

The investigation revealed asbestos and metals contaminated fill.

The objective of this RWP is to provide a plan to remediate the asbestos and metals contaminated fill and validate the remediation.

The Remediation Works Plan (RWP) 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 proposed commercial / industrial land use. The objective of the RAP was to:

- Define the remedial goals;
- Identify any regulatory approvals or licenses required for the proposed works;
- Document the remediation and validation strategy and provide an outline of the remediation works required to make the site suitable for the proposed commercial / industrial land use to ensure conditions within the area do not pose an unacceptable exposure risk to human health and / or the environment; and
- Document the outline of the contingency, environmental management and occupational health and safety procedures to be implemented during the remedial works.

The extent of remediation works required was limited to known areas of contamination identified in DP (2023b), restricted to discrete areas of asbestos contamination within the development area surrounding AEC31a.

Based on an assessment of the potential remediation options, giving consideration to the proposed commercial / industrial land use, the preferred remedial strategy for the site was excavation and offsite disposal. This remediation method is preferred considering the relatively small volume of soil identified and as the contamination is located in an active construction zone that may be subject to significant ground disturbance.

Subject to the successful implementation and validation of the measures detailed in the RWP, Douglas Partners concluded that the risks posed by contamination identified on the site can be mitigated to a level to make the site suitable for the proposed redevelopment.

5 CONCEPTUAL SITE MODEL

5.1 Areas of Environmental Concern and Contaminants of Potential Concern

The site history / data collected over the course of the contamination assessments and site walkover observations made prior to remedial works commencing were assessed within the objectives of this investigation and in the context of the proposed development works. Previous assessments identified areas of environmental concern (AEC) and contaminants of potential concern (COPC) which have the potential to be present on site. The AEC identified are presented in attached **Figure 2** and associated COPC are presented in **Table 5.1**.

Table 5.1. AEC and COPC

ID	Area of Environmental Concern	Land Use Activity	Contaminants of Potential Concern
Unexpected Find 'UF01'	In-situ Fill Materials	Uncontrolled Filling	Non-friable Asbestos, Lead, Zinc and Copper
AEC31a – Zone 1 'SP01' – 'SP03'	Stockpiled Fill Materials	Temporary storage of wastes	Non-friable Asbestos, Lead, Zinc and Copper
AEC31 – Zone 2 'SP01' – 'SP06'	Stockpiled Fill Materials	Temporary storage of wastes	Non-friable Asbestos, Lead, Zinc and Copper

The potential contamination pathways are considered to be as follows:

- Inhalation/ingestion of contaminants released in dust during redevelopment by site workers;
- Inhalation of contaminants during future use by site occupiers.

Relevant potential receptors are considered to include:

- Onsite construction and maintenance workers;
- Third parties during construction (adjacent site users and adjacent residents);
- Future residents/end users; and
- Neighbouring residential land users.

5.2 Land Use Setting

SE understands that the proposed development works include construction of 23 kms of metro railway line and associated infrastructure. Based on the proposed development works and guidance provided in ASC NEPM 2013, SE considers it reasonable to adopt the *'HIL C –Recreation / Open Space'* land use setting for the purpose of assessing land contamination exposure risks.

5.3 Direct Contact – Human Health

A significant portion of the site will be covered with hardstand pavements (roadways) or railway ballast, however, some areas within the verges will remain uncovered. It is considered that a complete direct contact exposure pathway for construction worker and future maintenance workers may exist. As such, further consideration of the direct contact risk should be given during remediation works.

Previously identified lead impacted fill materials 'UF01' pose an unacceptable direct contact human health risk and require further management in the form of remediation.

5.4 Inhalation / Vapour Intrusion – Human Health

In order for a potentially unacceptable inhalation / vapour intrusion human health exposure risk to exist, a primary vapour source (e.g. underground storage tank) or secondary vapour source (e.g. significantly contaminated soil or groundwater) must be present onsite. The historical evidence reviewed indicated a very low likelihood for a potential primary vapour source to be present on the site.

Potential sources of groundwater contamination in the immediate vicinity of the site (e.g. service stations) were not observed or detected within previous contamination assessments. Furthermore, a groundwater source of vapours was considered not possible at the site. As such, further consideration of this value is not considered necessary.

Previously identified asbestos fibre cement fragments within fill materials 'UF01' pose an unacceptable human health inhalation risk and require further management in the form of remediation.

5.5 Management Limits for Petroleum Hydrocarbon Compounds

ASC NEPM 2013 notes that there are a number of policy considerations which reflect the nature and properties of petroleum hydrocarbons:

- Formation of observable light non-aqueous phase liquids (LNAPL);
- Fire and explosive hazards; and
- Effects on buried infrastructure (e.g. penetration of or damage to, in-ground services by hydrocarbons).

Schedule B1 of ASC NEPM 2013 includes 'management limits' to avoid or minimise these potential effects. Application of the management limits requires consideration of site-specific factors such as the depth of building basements and services and depth to groundwater, to determine the maximum depth to which the limits should apply. ASC NEPM 2013 also notes that management limits may have less relevance at operating industrial sites which have no or limited sensitive receptors in the area of potential impact, and when management limits are exceeded, further site-specific assessment and management may enable any identified risk to be addressed.

5.6 Aesthetics

Section 3.6.3 of ASC NEPM 2013 advises that there are no specific numeric aesthetic guidelines, however site assessment requires a balanced consideration of the quantity, type and distribution of foreign material or odours in relation to the specific land use and its sensitivity.

Previously identified asbestos fibre cement fragments and foreign materials within fill soils 'UF01' pose an unacceptable aesthetic risk and require further management in the form of remediation.

5.7 Terrestrial Ecosystems

Section 3.4.2 of Schedule B1 ASC NEPM 2013 advises a pragmatic risk-based approach should be taken when assessing ecological risks in residential and commercial / industrial land use settings.

SE notes that the proposed development includes some landscape areas, due to the presence of these areas, further consideration to the ecological risk is considered warranted during remediation works.

Previously identified lead, zinc and copper impacted fill materials 'UF01' pose an unacceptable ecological risk and require further management in the form of remediation.

6 DATA QUALITY OBJECTIVES

The data quality objectives (DQO) and associated data quality indicators (DQI) for this project were established with consideration to those set out in Section 8 of Douglas Partners 2023.

NEPM ASC 2013 provides guidance on the development of data quality objectives (DQO) using a seven-step process.

The DQO for this project are set out in **Sections 6.1** to **6.7** of this report.

6.1 Step 1: State the problem

The first step involves summarising the contamination problem that requires new environmental data and identifying resources available to solve the problem.

The objectives of this project are to:

- Supervise remediation works undertaken per the site RAP;
- Provide advice on whether the site would be suitable (in the context of land contamination) for the proposed land use setting; and
- Provide recommendations for further investigation, management and/or remediation (if warranted).

The project is being undertaken because:

- The proposed development for the site includes construction of a roadway and associated infrastructure;
- Areas of Environmental Concern requiring remediation have been identified; and
- A Site Validation Report is required to detail the remediation and validation works undertaken on-site to make the site suitable for the proposed land-use.

The project team identified for this project consists of suitably experienced environmental consultants from SE.

The regulatory authorities identified for this project include NSW EPA and the Penrith City Council.

6.2 Step 2: Identify the decision/goal of the study

The second step involves identifying decisions that need to be made about the contamination problem and the new environmental data required to make them.

The decisions that need to be made during this project include:

- Is the environmental data collected for the project, suitable for assessing relevant land contamination exposure risks?
- Do the concentrations of identified contaminants of potential concern (COPC) present an unacceptable exposure risk to identified receptors, for the proposed land use setting?
- Is the site suitable for the proposed land use setting, in the context of land contamination?

6.3 Step 3: Identify the information inputs

The third step involves identifying the information needed to support decisions and whether new environmental data will be needed.

The inputs required to make the decisions set out in **Section 6.2** for this project, will include:

- Data obtained during searches of the site's history;
- The nature and extent of sampling at the site, including both density and distribution;
- Samples of relevant site media;

- The measured physical and/or chemical parameters of the site media samples (including field screening and laboratory analysis, where relevant);
- Assessment criteria adopted for each of the media sampled;
- Consultation with site auditor, inclusive of preparation of Sampling Analysis & Quality Plans (SAQPs) for additional assessment works as / if required; and
- Understanding of areas where the management of asbestos impacted soils is or is not required under a LTEMP.

Taking into consideration the objectives of this project, and the conceptual site model and land use setting presented in **Section 5** of this project, the assessment criteria relevant to the proposed land use setting adopted for this project are presented in **Table 6.1** below.

Table 6.1 Site adopted Criteria reference List

Exposure Pathway	Land Use Setting	Reference
Human Health Direct Contact	HIL C - Recreation / Open Space	Table 1A(1) in NEPC (2013a) Table B4 in Friebel, E & Nadebaum P (2011) Table 3-5 in NSW EPA (2000) for E.Coli and faecal coliforms
Human Health Inhalation/Intrusion	HIL C - Recreation / Open Space	Table 1A(2) in NEPC (2013a) Table 1A(3) in NEPC (2013a) Table 1A(4) in NEPC (2013a) Table 1A(5) in NEPC (2013a)
Human Health (Asbestos)	HIL C - Recreation / Open Space	Table 7 in NEPC (2013a)
Aesthetics	All	Characteristics and processes in Section 3.6.2 and 3.6.3 in NEPC (2013a)
Ecological	Urban residential / public open space	Table 1B(1) in NEPC (2013a) Table 1B(2) in NEPC (2013a) Table 1B(3) in NEPC (2013a) Table 1B(4) in NEPC (2013a) Table 1B(5) in NEPC (2013a) Table 1B(6) in NEPC (2013a)
Management Limits (petroleum hydrocarbons)	Residential, parkland and public open space	Table 1B(7) in NEPC (2013a)

The remediation acceptance criteria (RAC) for validation of the excavation (and stockpile footprints) have been derived with reference to the site assessment criteria (SAC) presented in DP (2023). The RAC are listed below:

- Copper: 210 mg/kg (ecological investigation level for passive open space);
- Lead: 600 mg/kg (health investigation level for passive open space);
- Zinc: 480 mg/kg (ecological investigation level for passive open space);
- Bonded asbestos containing materials: 0.02% w/w (health screening level for passive open space);
- Fibrous asbestos (FA) and Asbestos Fines (AF): 0.001% w/w (health screening level); and
- No visible asbestos for surface soil for all forms of asbestos (health screening level).

6.4 Step 4: Define the boundaries of the study

The fourth step involves specifying the spatial and temporal aspects of the environmental media that the data must represent to support decisions.

The spatial extent of the project will be limited to the subject investigation area as defined by its boundaries (refer **Figure 2**).

The temporal boundaries of the project include:

- The project timeframe presented in the SE proposal for this project;
- Unacceptable weather conditions at the time of undertaking fieldwork, including rainfall, cold and/or heat;
- Access availability of the site (to be defined by the site owner/representative); and
- Availability of SE field staff (typically normal daylight working hours, Monday to Friday).

The lateral extent that contamination expected is defined by Douglas Partners in the Remediation Works Plan (DP 2023).

The vertical extent that contamination is expected to extend to underlying virgin natural materials.

The scale of the decisions required will be based on the entire site.

Constraints which may affect the carrying out of this project may include access limitations, presence of above and below ground infrastructure, and hazards creating health and safety risks.

6.5 Step 5: Develop the analytical approach (or decision rule)

The fifth step involves defining the parameter of interest, specifying the action level, and integrating information from Steps 1 to 4 into a single statement that gives a logical basis for choosing between alternative actions.

6.5.1 Rinsate Blanks

Only disposable sampling equipment will be used during the field works on the day. As such, no rinsate blank will be collected.

6.5.2 Trip Spikes and Trip Blank Samples

One trip spike and one trip blank will be used and scheduled for analysis, for each day of soil sampling undertaken, if site samples being collected that day are being analysed for volatile contaminants of concern (typically BTEX and/or TRH).

6.5.3 Field Duplicates and Field Triplicates

Field duplicate and field triplicates will be collected at a rate of one per twenty (5%) site samples collected. The duplicates and triplicates collected will be analysed for at least one of the analytes that the parent sample of the duplicate/triplicate is being scheduled for analysis for (with the exception of asbestos).

The relative percent difference (RPD) of concentrations of relevant analytes, between the parent sample and the duplicate/triplicate will be calculated.

6.5.4 Laboratory Analysis Quality Assurance / Quality Control

The analytical laboratory QA/QC program will typically include laboratory method blank samples, matrix spike samples, surrogate spike samples, laboratory control samples, and laboratory duplicate samples.

6.5.5 If/Then Decision Rules

SE has adopted the following 'if/then' decision rules for this project:

- If the result of the assessment of field data and laboratory analytical data is considered acceptable, then that field data and laboratory analytical data is suitable for interpretation within the scope of this project; and
- If the field data and laboratory analytical data is within the constraints of the assessment criteria adopted for this project (refer **Section 6.3**), then the contamination exposure risks to identified receptors, are considered acceptable.

In the event the assessment of field data and/or laboratory analytical data results in the data being not suitable for interpretation, then SE will determine if additional data is required to allow interpretation to be undertaken.

In the event that field data and/or laboratory analytical data exceeds the assessment criteria adopted for this project (refer **Section 6.3**), SE will undertake an assessment of the exceedance in the context of the project objectives to determine if additional data is required and whether management and/or remediation is required.

6.6 Step 6: Specify the performance or acceptance criteria

The sixth step involves specifying the decision maker's acceptable limits on decision errors, which are used to establish performance goals for limiting uncertainties in the data. When assessing contaminated land, there are generally two types of errors in decision making:

- Contamination exposure risks for a specific land use setting are acceptable, when they are not; and
- Contamination exposure risks for a specific land use setting are not acceptable, when they are.

SE will mitigate the risk of decision error by:

- Calculation of the 95% upper confidence limit (UCL) statistic to assess the mean concentration of relevant contaminants of potential concern where applicable i.e. where the highest concentration is less than 2.5 times the site adopted criteria, the standard deviation of the data is less than 50 % of the site adopted criteria, and the contaminant is not asbestos;
- Assignment of fieldwork tasks to suitably experienced SE consulting staff, and suitably experienced contractors;
- Assignment of laboratory analytical tasks to reputable NATA accredited laboratories; and
- Assignment of data interpretation tasks to suitably experienced SE consulting staff, and outsourcing to technical experts where required.

SE will also adopt a range of data quality indicators (DQI) to facilitate assessment of the completeness, comparability, representativeness, precision and accuracy (bias).

Table 6.2 Performance and Acceptance Criteria Summary

Completeness			
Field Considerations	**Assessment Criterion**	**Laboratory Considerations**	**Assessment Criterion**
Critical locations sampled	Refer **Section 6.7.1**	Critical samples analysed according to DQO	Refer **Section 6.7.6**
Critical samples collected	Refer **Section 6.7.1**	Analytes analysed according to DQO	Refer **Section 6.7.6**
SOPs appropriate and complied with	100%	Appropriate laboratory analytical methods and LORs	Refer **Section 6.7.6**
Field documentation complete	All sampling point logs, calibration logs and chain of custody forms	Sample documentation complete	All sample receipt advices, all certificates of analysis
Sample Holding Times	Laboratory holding times provided by Eurofins | Environment Testing	Sample extraction and holding times complied with	Refer **Section 6.7.7**
Comparability			
Field Considerations	**Assessment Criterion**	**Laboratory Considerations**	**Assessment Criterion**
Same SOPs used on each occasion	100%	Same analytical methods used by primary laboratory	Refer **Section 6.7.7**
Climatic conditions	Samples stored in insulated containers with ice, immediately after collection	Same LORs at primary laboratory	Refer **Section 6.7.7**
Same types of samples collected, and handled/preserved in same manner	All soil samples same size, all stored in insulated containers with ice	Same laboratory for primary sample analysis	All primary samples to Eurofins | Environment Testing
Analytical measurement units consistent	All measurement units the same between same analytes	Same analytical measurement units	Refer **Section 6.7.7**
Representativeness			
Field Considerations	**Assessment Criterion**	**Laboratory Considerations**	**Assessment Criterion**
Appropriate media sampled according to DQO	Refer **Section 6.7.6**	Samples analysed according to DQO	Refer **Section 6.7.6**
Media identified in DQO sampled	Refer **Section 6.7.6**		
Precision			
Field Considerations	**Assessment Criterion**	**Laboratory Considerations**	**Assessment Criterion**
Field duplicate / triplicate RPD	Minimum 5% duplicates and triplicates No limit for analytical results <10 times LR 50% for analytical results 10-20 times LOR 30% for analytical results >10 times LOR	Laboratory duplicates	No exceedances of criteria
SOPs appropriate and complied with	100%		
Accuracy (bias)			
Field Considerations	**Assessment Criterion**	**Laboratory Considerations**	**Assessment Criterion**
Field trip spikes	Recoveries between 70% and 130%	Matrix spike recovery	No exceedances of criteria
Field trip blanks	Analyte concentration <LOR	Surrogate spike recovery	No exceedances of criteria

6.7 Step 7: Develop the plan for obtaining data

The seventh step involves identifying the most resource effective sampling and analysis design for generating the data that is required to satisfy the DQOs.

6.7.1 Sampling Point Density and Locations

Table A in NSW EPA *Sampling Design Guidelines* (2022) provides guidance on minimum sampling point densities required for site characterisation, based on detecting circular hot spots by using a systematic sampling pattern. This guidance assumes the investigator has little knowledge about the probable locations of the contamination, the distribution of the contamination is expected to be random (e.g. land fill sites) or the distribution of the contamination is expected to be fairly homogenous (e.g. agricultural lands).

However, Section 3.1 of NSW EPA *Sampling Design Guidelines* (2022) states that a judgemental sampling pattern can be used where there is enough information on the probable locations of contamination. Further to this, Section 6.2.1 of ASC NEPM 2013 states that the number and location or sampling points is based on knowledge of the site and professional judgement. Sampling should be localised to known or potentially contaminated areas identified from knowledge of the site either from site history or an earlier phase of site investigation. Judgemental sampling can be used to investigate sub-surface contamination issues in site assessment.

Table 1 in the *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, May 2021*, Western Australia Department of Health (DOH (2021)) indicates that where the 'likelihood of asbestos' is assessed as "possible" or "suspect", the investigation regimen should include a sampling density that is either judgemental or the same as that set out in Table A of NSW EPA *Sampling Design Guidelines* (2022) for assessing asbestos.

6.7.2 Sampling Methodology

The sampling point methodology presented in **Table 6.7.2** will be used for this project. The methodology is based on a range of factors considered relevant to this project, including:

- The identified contaminants of potential concern;
- The suspected laydown mechanisms for those contaminants of concern;
- The suspected likely depth of contamination; and
- Site specific constraints which affect the type of sampling techniques suited to the site.

Table 6.7.2. Proposed Validation Sampling Methodology

AEC ID	Method	Target Depth of Sampling Point
Unexpected Find 'UF01'	Hand Tools	Surface soils 0.0-0.1 m bsgl
AEC31a (Zone 1) SP01-SP06	*N/A - Subject to visual inspection only as stockpiles placed on geofabric layer*	
AEC31 (Zone 2) SP01-SP03	*N/A - Subject to visual inspection only as stockpiles placed on geofabric layer*	

Reference will also be made to Table 5 in WA DOH (20021) for the sampling and screening of fill soils for the presence of asbestos, where practical. The application of asbestos screening criteria published in NEPM ASC 2013 may be limited.

6.7.3 Identification, Storage and Handling of Samples

Sample identifiers will be used for each sample collected, based on the sampling point number and the depth/interval the sample was collected from, e.g. a sample collected from TP03 at a depth of 0.2m below ground level, would be identified as TP03-0.2.

Project samples will be stored in laboratory prepared glass jars (and zip lock bags if collected for asbestos or acid sulphate soil assessment).

Soil samples in glass jars (and acid sulphate soil samples) will be placed in insulated container/s with ice.

Samples will be transported to the relevant analytical laboratory, with chain of custody (COC) documentation that includes the following information:

- SE project identification number;
- Each sample identifier;
- Date each sample was collected;
- Sample type (e.g. soil or water);
- Container type/s for each sample collected;
- Preservation method used for each sample (e.g. ice);
- Analytical requirements for each sample and turnaround times; and
- Date and time of dispatch and receipt of samples (including signatures).

6.7.4 Decontamination

All sampling equipment used during the investigation consisted of location specific nitrile gloves and sampling jars / bags. Samples were collected as to not make contact with the excavator bucket. As such decontamination was deemed unnecessary.

6.7.5 Laboratory Selection

The analytical laboratories used for this project will be NATA accredited for the analysis undertaken.

6.7.6 Laboratory Analytical Schedule

Project samples will be scheduled for NATA accredited laboratory analysis, using a combination of:

- Observations made in the field of the media sampled; and
- The contaminants of potential concern (COPC) identified for the area of environmental concern that the sample was collected from.

Based on site history, SE has adopted the laboratory analytical schedule (and associated upper limiting quantities) presented below in **Table 6.7.6** for this project.

Table 6.7.6. Laboratory Analytical Schedule

AEC ID	Analytes
Unexpected Find 'UF01'	Asbestos (NEPM WA DOH 0.001%), Lead, Copper and Zinc
AEC31a (Zone 1) – SP01-SP06	*N/A - Subject to visual inspection only as stockpiles placed on geofabric layer*
AEC31 (Zone 2)– SP01-SP03	*N/A - Subject to visual inspection only as stockpiles placed on geofabric layer*

6.7.7 Laboratory Holding Times, Analytical Methods and Limits of Reporting

The laboratory holding times, analytical methods and limits of reporting (LOR) being used for this project, are presented in **Table 6.3** and **Table 6.4** below.

Table 6.3 Laboratory Holding Times, Analytical Methods, and Limit of Reporting (Primary Lab - Eurofins)

Analyte	Holding Time	Analytical Method	Limit of Reporting (mg/kg)
BTEX and TRH C_6-C_{10}	14 days	USEPA 5030, 8260B and 8020	0.2-0.5
TRH >C_{10}-C_{40}	14 days	USEPA 8015B & C	20-100
VOC	14 days	USEPA 8260	0.1-0.5
PAH	14 days	USEPA 8270	0.1-0.5
OCP	14 days	USEPA 8081	0.2
Nitrate	28 days	APHA 4500	5.0
Metals	6 months	USEPA 8015B & C	0.05-5
Asbestos	No limit	AS4964:2004	0.01 % w/w (qualitative)
Asbestos	No limit	Inhouse Method	0.001% w/w

Table 6.4 Laboratory Holding Times, Analytical Methods, and Limit of Reporting (Secondary Lab - ALS)

Analyte	Holding Time	Analytical Method	Limit of Reporting (mg/kg)
PAH	14 days	EP075	0.5
Metals	6 months	EG005T	1-5

7 REMEDIATION WORKS SUMMARY

Remediation works of the identified AECs were carried out across March to August 2024 as per requirements detailed in Douglas Partners (2023), in line with the SafeWork NSW *Code of Practice: How to Safely Remove Asbestos* (2022), and under the supervision of Spot On Asbestos, a Class A Licensed Asbestos Removalist Contractor (ADAD214060). A summary of the remediation works for each AEC is provided within **7.1**, **7.2** and **7.3** below.

The remediation strategy for site comprised excavation of in-situ soils associated with 'UF01' previously identified as impacted by non-friable asbestos and heavy metals, waste classification of spoil from 'UF01' stockpiled in two temporary stockpiling areas, and disposal off-site.

7.1 Unexpected Find 'UF01'

Remediation works were undertaken in two stages across 4, 5 and 6 March 2024 then 22, 23, 24 and 27 May 2024, with works completed under the supervision of a suitably qualified and experienced Environmental Consultant / Occupational Hygienist representing SE. In-situ fill materials identified as 'UF01' located within AEC31a were excavated vertically down 0.1 m into inferred natural clay, and laterally to the extent of the previously identified fill materials in the north, east and south. The excavation was extended to the edge of the site boundary in the westerly direction. Foreign materials including asbestos fibre cement fragments which were visible in the western wall of the excavation were removed by hand until no ACM was present on the soil surface. A geofabric layer was installed across the western wall to make the area safe and limit the risk of inadvertent disturbance of the underlying soils.

A total of approximately 1,335 m^3 of fill materials were excavated and removed from 'UF01'. Spoil was relocated within two stockpiling areas established for the temporary storage of soil associated with remediation works. 385 m^3 of stockpiled fill materials were relocated to Zone 1 and 950 m^3 of soil materials to Zone 2. Stockpiled soils in both areas were placed atop a layer of geofabric.

Site Photograph 7.1.1 View of Unexpected Find 'UF01' following the completion of removal works, as observed on 28 May 2024 facing south-east.

Site Photograph 7.1.2 View of Unexpected Find 'UF01' following the completion of removal works, as observed on 28 May 2024 facing north.

Site Photograph 7.1.3 View of the western wall following installation of the geofabric layer, as observed 28 May 2024 viewed facing south-west.

7.2 AEC31a – Zone 1 'SP01-SP03' (Stockpiled Fill)

Remediation works were undertaken on the 18 and 19 July 2024 under the supervision of a suitably qualified and experienced Environmental Consultant / Occupational Hygienist representing SE. Prior to load out, the stockpiled fill materials were subject to a waste classification per the NSW EPA 2014 'Waste Classification Guidelines' (presented in **Appendix C**) and disposed of off-site to a licensed receiving facility. At the completion of load out works, the geofabric layer within the stockpile footprints was disposed of.

Following removal works, no residual topsoil materials, or suspected asbestos fibre cement fragments were observed within the former location of 'SP01-SP03'.

Site Photograph 7.2.1 View of former location of 'SP01-SP03' following completion of removal works, as observed 19 July 2024 facing north.

Site Photograph 7.2.2 View of former location of 'SP01-SP03' following completion of removal works, as observed 23 August 2024 facing north.

Site Photograph 7.2.3 View of residual soil surface of former location of 'SP01-SP03' following completion of removal works, as observed 19 July 2024.

7.3 AEC31 – Zone 2 'SP01-SP06' (Stockpiled Fill)

Remediation works were undertaken across 20 to 23 August 2024 under the supervision of a suitably qualified and experienced Environmental Consultant / Occupational Hygienist representing SE. Prior to load out the stockpiled fill materials were subject to a waste classification per the NSW EPA 2014 'Waste Classification Guidelines' (presented in **Appendix C**) and disposed of off-site to a licensed receiving facility. At the completion of load out works, the geofabric layer within the stockpile footprints was disposed of.

Following removal works, no residual topsoil materials, or suspected asbestos fibre cement fragments were observed within the former location of 'SP01-SP06'.

Site Photograph 7.3.1 View of former location of 'SP01-SP06' following completion of removal works, as observed 23 August 2024 facing north-west.

Site Photograph 7.3.2 View of former location of 'SP01-SP06' following completion of removal works, as observed 23 August 2024 facing north-west.

Site Photograph 7.3.3 View of former location of 'SP01-SP06' following completion of removal works, as observed 23 August 2024 facing north-west.

8 VALIDATION WORKS SUMMARY

8.1 Unexpected Find 'UF01'

A total of forty (40) soil validation samples (ZZ-FP-VAL01 to ZZ-FP-VAL-23 and FP-VAL01 to FP-VAL17) were extracted from the residual soil surface within the base of the resultant excavation at the completion of works. All samples were submitted for Lead, Zinc, Copper and quantitative asbestos analysis (NEPM WA DOH 0.001% w/w). As the excavation depth tapered up gradually to surrounding surface level within the north, east and southern extent of the excavation, no wall samples were collected. The base samples collected from the edges of the excavation in these areas are considered to sufficiently validated the lateral extent of excavation.

Validation samples were collected in accordance with the RWP (DP 2023) which stipulated 1 validation sample per 25 m^2 along the base, 1 sample per 5 m excavation length and 1 m depth along excavation walls. As the excavation was approximately 1,000 m^2, 40 validation samples were considered appropriate.

The extent of the excavation is an irregular shape, approximately 33m wide at the southern portion and narrowing to 9m wide for the northern 17m. The excavation is approximately 60m in length on the eastern portion shortening to 30m at the western boundary (refer to **Figure 3**). The depth of the excavation across 'UF01' was approximately 1m.

The western extent of the extraction was terminated at the site boundary, prior to extending beyond the previously identified fill materials. Six (6) soil validation samples (ZZ-W01-1.0, ZZ-W02-0.5, ZZ-W02-1.5, ZZ-W03-0.5, ZZ-W03-1.5, and ZZ-W04-1.0) were collected from the surface soils within the western wall of the excavation at a depth of approximately 0.6 m. All samples were submitted for Lead, Zinc, Copper and quantitative asbestos analysis (NEPM WA DOH 0.001% w/w). Asbestos fibre cement fragments were removed from the soil surface by hand prior to the installation of a geofabric layer to make the area safe and limit the risk of inadvertent disturbance of the underlying soils.

Following the completion of removal and make safe works, the residual soil surface within the excavation footprint was subject to a systematic grid based (1 m transects) visual inspection on 24 and 28 May 2024 by Andrew O'Neill, a suitably qualified Occupational Hygienist and Licensed Asbestos Assessor (LAA001413) (refer to **Appendix C**). Evidence of suspected asbestos containing materials were not observed on the soil surface at the time of the inspection. The 'base' soils sampled were generally comprised of CLAY / silty CLAY, high plasticity, red / brown and dry. No visual evidence of contamination, including ACM, hydrocarbon staining or olfactory evidence of odours, were observed on the residual soil surface.

The 'wall' soils sampled were generally comprised of CLAY / silty CLAY, high plasticity, red / brown and dry. No visual evidence of contamination, including ACM, hydrocarbon staining or olfactory evidence of odours, were observed on the residual soil surface.

8.2 AEC31a – Zone 1 'SP01-SP03' (Stockpiled Fill)

Following the completion of removal works, the residual soil surface within the stockpile footprint was subject to a systematic grid based (1 m transects) visual inspection on 19 July 2024 by Andrew O'Neill, a suitably qualified Occupational Hygienist and Licensed Asbestos Assessor (LAA001413) (refer to **Appendix C**). Evidence of suspected asbestos containing materials were not observed on the soil surface at the time of the inspection. The 'base' soils sampled were generally comprised of CLAY / gravelly CLAY, high plasticity, red / brown and dry. No visual evidence of contamination, including ACM, hydrocarbon staining or olfactory evidence of odours, were observed on the residual soil surface.

8.3 AEC31 – Zone 2 'SP01-SP06' (Stockpiled Fill)

Following the completion of removal works, the residual soil surface within the stockpile footprint was subject to a systematic grid based (1 m transects) visual inspection on 23 August 2024 by Andrew O'Neill, a suitably qualified Occupational Hygienist and Licensed Asbestos Assessor (LAA001413) (refer to **Appendix C**). Evidence of suspected asbestos containing materials were not observed on the soil surface at the time of the inspection. The 'base' soils sampled were generally comprised of CLAY / gravelly CLAY, high plasticity, red / brown and dry.

No visual evidence of contamination, including ACM, hydrocarbon staining or olfactory evidence of odours, were observed on the residual soil surface.

8.4 Waste Disposal

A preliminary waste classification undertaken by Douglas Partners (as references in DP 2023 Section 2 - Background) classified the contaminated fill as special waste – asbestos, hazardous waste, noting that further sampling, analysis and statistical analysis for lead could facilitate re-classification. Following the excavation of fill materials SE undertook waste classification sampling of the resultant stockpiles re-classifying materials (refer to **Appendix C**) prior to disposal off-site.

Records provided by the client indicate that a total of 669.18 tonnes of asbestos contaminated soil were reported as being removed for offsite disposal during remediation works from Zone 1. Waste disposal records indicate that the waste was transported to Blacktown Waste Services Pty Ltd, 25 Harris Avenue, Marsden Park NSW.

Records provided by the client indicate that a total of 2238.02 tonnes of asbestos contaminated soil were reported as being removed for offsite disposal during remediation works from Zone 2. Waste disposal records indicate that the waste was transported to Blacktown Waste Services Pty Ltd, 25 Harris Avenue, Marsden Park NSW or Cleanaway Pty Ltd, 1725 Elizabeth Drive, Kemps Creek NSW.

All waste materials disposed of off-site as part of this project are associated with the remediation of unexpected find 'UF01' located in area AEC31a.

Table 8.1 Summary of Waste Disposal Facilities Utilised

Waste Receiving Facility	Address	Waste Types Received	EPL #
Blacktown Waste Services Pty Ltd	25 Harris Avenue, Marsden Park NSW	General Solid Waste – Asbestos Contaminated Soil	11497
Cleanaway Pty Ltd	1725 Elizabeth Drive, Kemps Creek NSW	Restricted Waste – Asbestos Contaminated Soil	4068

A summary of waste disposal records and related tipping dockets associated with the remediation works is outlined in **Table 8.3.2** and **Table 8.3.3** below.

Table 8.3.2 Summary of Off-Site Waste Disposal for Remediation Works AEC31a – Zone 1 'SP01-SP03'

Date	Truck Rego	Docket Number	Waste Receiving Facility	Weight (Tonnes)	Waste Type
18/07/2024	XO26PY	5105169	Blacktown Waste Services	28.20	General Solid Waste – Asbestos Contaminated Soil
18/07/2024	XO26PY	5105180	Blacktown Waste Services	33.36	General Solid Waste – Asbestos Contaminated Soil
18/07/2024	XO51CR	5105170	Blacktown Waste Services	31.70	General Solid Waste – Asbestos Contaminated Soil
18/07/2024	XO51CR	5105184	Blacktown Waste Services	33.04	General Solid Waste – Asbestos Contaminated Soil
18/07/2024	XO51FJ	5105185	Blacktown Waste Services	31.52	General Solid Waste – Asbestos Contaminated Soil
19/07/2024	XO26PY	5105194	Blacktown Waste Services	35.54	General Solid Waste – Asbestos Contaminated Soil
19/07/2024	XO26PY	5105210	Blacktown Waste Services	34.48	General Solid Waste – Asbestos Contaminated Soil
19/07/2024	XO51FJ	5105218	Blacktown Waste Services	38.86	General Solid Waste – Asbestos Contaminated Soil
19/07/2024	XO51CR	5105196	Blacktown Waste Services	34.34	General Solid Waste – Asbestos Contaminated Soil

Date	Truck Rego	Docket Number	Waste Receiving Facility	Weight (Tonnes)	Waste Type
19/07/2024	XO51CR	5105212	Blacktown Waste Services	35.86	General Solid Waste – Asbestos Contaminated Soil
19/07/2024	XO51CR	5105230	Blacktown Waste Services	37.58	General Solid Waste – Asbestos Contaminated Soil
19/07/2024	XO51FJ	5105200	Blacktown Waste Services	32.00	General Solid Waste – Asbestos Contaminated Soil
19/07/2024	XO51FJ	5105218	Blacktown Waste Services	38.86	General Solid Waste – Asbestos Contaminated Soil
19/07/2024	XO51FJ	5105234	Blacktown Waste Services	9.86	General Solid Waste – Asbestos Contaminated Soil
18/07/2024	XO51CR	KEM130190498.0	Cleanaway Pty Ltd	26.56	Restricted Waste – Asbestos Contaminated Soil
18/07/2024	XO51CR	KEM130190535.0	Cleanaway Pty Ltd	28.68	Restricted Waste – Asbestos Contaminated Soil
18/07/2024	XO26PY	KEM130190534.0	Cleanaway Pty Ltd	21.66	Restricted Waste – Asbestos Contaminated Soil
18/07/2024	XO26PY	KEM130190570.0	Cleanaway Pty Ltd	36.70	Restricted Waste – Asbestos Contaminated Soil
18/07/2024	XO26PY	KEM130190485.0	Cleanaway Pty Ltd	23.50	Restricted Waste – Asbestos Contaminated Soil
18/07/2024	XO51CR	KEM130190589.0	Cleanaway Pty Ltd	29.08	Restricted Waste – Asbestos Contaminated Soil
18/07/2024	XO51FJ	KEM130190542.0	Cleanaway Pty Ltd	22.88	Restricted Waste – Asbestos Contaminated Soil
18/07/2024	XO51FJ	KEM130190506.0	Cleanaway Pty Ltd	24.92	Restricted Waste – Asbestos Contaminated Soil
			Total (Zone 1) :	**669.18 tonnes**	

Table 8.3.3 Summary of Off-Site Waste Disposal for Remediation Works AEC31 – Zone 2 'SP01-SP06'

Date	Truck Rego	Docket Number	Waste Receiving Facility	Weight (Tonnes)	Waste Type
20/08/2024	XO26PY	5107476	Blacktown Waste Services	31.74	General Solid Waste – Asbestos Contaminated Soil
20/08/2024	XO26PY	5107497	Blacktown Waste Services	38.30	General Solid Waste – Asbestos Contaminated Soil
20/08/2024	XO26PY	5107537	Blacktown Waste Services	37.20	General Solid Waste – Asbestos Contaminated Soil
20/08/2024	XO26PY	5107555	Blacktown Waste Services	37.30	General Solid Waste – Asbestos Contaminated Soil
20/08/2024	XN56GK	5107473	Blacktown Waste Services	31.58	General Solid Waste – Asbestos Contaminated Soil
20/08/2024	XN56GK	5107492	Blacktown Waste Services	14.00	General Solid Waste – Asbestos Contaminated Soil
20/08/2024	XN56GK	5107493	Blacktown Waste Services	27.32	General Solid Waste – Asbestos Contaminated Soil
20/08/2024	XN56GK	5107535	Blacktown Waste Services	38.08	General Solid Waste – Asbestos Contaminated Soil
20/08/2024	XN56GK	5107554	Blacktown Waste Services	38.54	General Solid Waste – Asbestos Contaminated Soil
20/08/2024	XO27TY	5107468	Blacktown Waste Services	29.68	General Solid Waste – Asbestos Contaminated Soil

Date	Truck Rego	Docket Number	Waste Receiving Facility	Weight (Tonnes)	Waste Type
20/08/2024	XO27TY	5107490	Blacktown Waste Services	36.30	General Solid Waste – Asbestos Contaminated Soil
20/08/2024	XO27TY	5107532	Blacktown Waste Services	37.82	General Solid Waste – Asbestos Contaminated Soil
20/08/2024	XO27TY	5107548	Blacktown Waste Services	39.62	General Solid Waste – Asbestos Contaminated Soil
20/08/2024	XN57GK	5107471	Blacktown Waste Services	(1 tyre)	Tyre
20/08/2024	XN57GK	5107488	Blacktown Waste Services	38.00	General Solid Waste – Asbestos Contaminated Soil
20/08/2024	XN57GK	5107511	Blacktown Waste Services	39.08	General Solid Waste – Asbestos Contaminated Soil
20/08/2024	XN57GK	5107544	Blacktown Waste Services	37.58	General Solid Waste – Asbestos Contaminated Soil
20/08/2024	XN57GK	5107466	Blacktown Waste Services	35.28	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XN57GK	5107669	Blacktown Waste Services	38.52	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XN57GK	5107639	Blacktown Waste Services	37.08	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XN57GK	5107622	Blacktown Waste Services	39.22	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XN57GK	5107597	Blacktown Waste Services	36.94	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XO26PY	5107590	Blacktown Waste Services	34.30	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XO26PY	5107613	Blacktown Waste Services	38.00	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XO26PY	5107630	Blacktown Waste Services	37.18	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XO26PY	5107676	Blacktown Waste Services	36.72	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XO26PY	5107656	Blacktown Waste Services	36.12	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XN56GK	5107620	Blacktown Waste Services	15.30	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XN56GK	5107621	Blacktown Waste Services	23.98	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XN56GK	5107594	Blacktown Waste Services	16.38	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XN56GK	5107595	Blacktown Waste Services	23.22	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XN56GK	5107637	Blacktown Waste Services	15.82	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XN56GK	5107638	Blacktown Waste Services	25.02	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XN56GK	5107672	Blacktown Waste Services	37.22	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XO27TY	5107591	Blacktown Waste Services	36.14	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XO27TY	5107667	Blacktown Waste Services	38.28	General Solid Waste – Asbestos Contaminated Soil
21/08/2024	XO27TY	5107635	Blacktown Waste Services	38.26	General Solid Waste – Asbestos Contaminated Soil

Date	Truck Rego	Docket Number	Waste Receiving Facility	Weight (Tonnes)	Waste Type
21/08/2024	XO27TY	5107615	Blacktown Waste Services	37.20	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XO27TY	5107704	Blacktown Waste Services	35.70	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XO27TY	5107723	Blacktown Waste Services	38.12	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XO27TY	5107742	Blacktown Waste Services	37.86	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XO27TY	5107767	Blacktown Waste Services	38.44	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XO27TY	5107784	Blacktown Waste Services	38.84	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XO26PY	5107702	Blacktown Waste Services	36.20	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XO26PY	5107721	Blacktown Waste Services	36.18	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XO26PY	5107738	Blacktown Waste Services	37.12	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XO26PY	5107764	Blacktown Waste Services	37.90	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XO26PY	5107782	Blacktown Waste Services	36.76	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XN57GK	5107708	Blacktown Waste Services	38.70	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XN57GK	5107727	Blacktown Waste Services	15.36	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XN57GKT	5107728	Blacktown Waste Services	24.04	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XN57GK	5107743	Blacktown Waste Services	14.32	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XN57GKT	5107744	Blacktown Waste Services	26.64	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XN57GK	5107770	Blacktown Waste Services	36.12	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XN57GK	5107786	Blacktown Waste Services	34.58	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XN57GK	5107710	Blacktown Waste Services	38.60	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XN57GK	5107730	Blacktown Waste Services	39.20	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XN57GK	5107749	Blacktown Waste Services	38.42	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XN57GK	5107775	Blacktown Waste Services	23.10	General Solid Waste – Asbestos Contaminated Soil
22/08/2024	XN57GK	5107774	Blacktown Waste Services	16.34	General Solid Waste – Asbestos Contaminated Soil
23/08/2024	XN56GK	5107817	Blacktown Waste Services	38.90	General Solid Waste – Asbestos Contaminated Soil
23/08/2024	XN56GK	5107811	Blacktown Waste Services	36.48	General Solid Waste – Asbestos Contaminated Soil
23/08/2024	XO26PY	5107802	Blacktown Waste Services	36.76	General Solid Waste – Asbestos Contaminated Soil

Date	Truck Rego	Docket Number	Waste Receiving Facility	Weight (Tonnes)	Waste Type
23/08/2024	XO26PY	5107826	Blacktown Waste Services	36.30	General Solid Waste – Asbestos Contaminated Soil
23/08/2024	XO26PY	5107844	Blacktown Waste Services	37.16	General Solid Waste – Asbestos Contaminated Soil
23/08/2024	XO27TY	5107806	Blacktown Waste Services	36.38	General Solid Waste – Asbestos Contaminated Soil
23/08/2024	XO27TY	5107831	Blacktown Waste Services	40.50	General Solid Waste – Asbestos Contaminated Soil
23/08/2024	XO27TY	5107849	Blacktown Waste Services	28.68	General Solid Waste – Asbestos Contaminated Soil
			Total (Zone 2):	**2,238.02 tonnes**	

A copy of the waste tracking records is presented in **Appendix B – Waste Documentation**.

9 DATA QUALITY INDICATOR ASSESSMENT

9.1 Completeness

An assessment of the completeness of data collected was undertaken, and the results presented in **Table 9.1.1**.

Table 9.1.1 Completeness DQI

Field Considerations	Target	Actual	Comment
Critical locations sampled	**UF01:** 44 **Zone1:** *N/A* **Zone 2:** *N/A*	**UF01:** 44 **Zone1:** *N/A* **Zone 2:** *N/A*	Performance against indicator considered acceptable.
Critical samples collected	**UF01:** 46 **Zone1:** *N/A* **Zone 2:** *N/A*	**UF01:** 46 **Zone1:** *N/A* **Zone 2:** *N/A*	Performance against indicator considered acceptable.
SOPs appropriate and complied with	100%	100%	Performance against indicator considered acceptable.
Field documentation complete	All sampling point logs, calibration logs and chain of custody forms	All sampling point logs, calibration logs and chain of custody forms	Performance against indicator considered acceptable.
Laboratory Considerations	**Target**	**Actual**	**Comment**
Critical samples analysed according to DQO	Refer **Section 6.7.6**	100%	Performance against indicator considered acceptable.
Analytes analysed according to DQO	Refer **Section 6.7.6**	100%	Performance against indicator considered acceptable.
Appropriate laboratory analytical methods and LORs	Refer **Section 6.7.6**	100%	Performance against indicator considered acceptable.
Sample documentation complete	All sample receipt advices, all certificates of analysis	100%	Performance against indicator considered acceptable.
Sample extraction and holding times complied with	Refer **Section 6.7.7**	100%	Performance against indicator considered acceptable.

The data collected is considered to be adequately complete within the objectives and constraints of the project.

9.2 Comparability

An assessment of the comparability of data collected was undertaken, and the results presented in **Table 9.2.1**

Table 9.2.1 Comparability DQI

Field Considerations	Target	Actual	Comment
Same SOPs used on each occasion	100%	100%	Performance against indicator considered acceptable.
Climatic conditions	Samples stored in insulated containers with ice, immediately after collection	100%	Performance against indicator considered acceptable.
Same types of samples collected, and handled/preserved in same manner	All soil samples same size, all stored in insulated containers with ice	100%	Performance against indicator considered acceptable.
Laboratory Considerations	**Target**	**Actual**	**Comment**
Same analytical methods used by primary laboratory	Refer **Section 6.7.7**	100%	Performance against indicator considered acceptable.
Same LORs at primary laboratory	Refer **Section 6.7.7**	100%	Performance against indicator considered acceptable.
Same laboratory for primary sample analysis	All primary samples to Eurofins MGT	100%	Performance against indicator considered acceptable.
Same analytical measurement units	Refer **Section 6.7.7**	100%	Performance against indicator considered acceptable.

The data collected is considered to be adequately comparable within the objectives and constraints of the project.

9.3 Representativeness

An assessment of the representativeness of data collected was undertaken, and the results presented in **Table 9.3.1.**

Table 9.3.1 Representativeness DQI

Field Considerations	Target	Actual	Comment
Appropriate media sampled according to DQO	Refer **Section 6.7.6**	100%	Performance against indicator considered acceptable.
Media identified in DQO sampled	Refer **Section 6.7.6**	100%	Performance against indicator considered acceptable.
Laboratory Considerations	**Target**	**Actual**	**Comment**
Samples analysed according to DQO	Refer **Section 6.7.6**	Refer comments	Performance against indicator considered acceptable.

The data collected is considered to be adequately complete within the objectives and constraints of the project.

9.4 Precision

An assessment of the precision of data collected was undertaken, and the results presented in **Table 9.4.1.**

Table 9.4.1 Precision DQI

Field Considerations	Target	Actual	Comment
Field duplicate / triplicate RPD	Minimum 10% duplicates and triplicates	4.3%	Parent duplicate/triplicate relationships are as follows: DUP01 (28/05/24) – ZZ-FP-VAL01; and DUP01 (24/05/24) – FP-VAL01. Due to a laboratory error, triplicate samples were analysed at ALS for lead only. The analytical method dose not differ between metals, as such RPD data received for lead is considered representative of zinc and copper. Target number of duplicate and triplicates was not met, however no RPD exceedances were identified in the samples submitted Performance against indicator considered acceptable.
	No limit for analytical results <10 times LOR	Nil	
	50% for analytical results 10-20 times LOR	Nil	
	30% for analytical results >20 times LOR	Nill	
SOPs appropriate and complied with	100%	100%	Performance against indicator considered acceptable.
Laboratory Considerations	**Target**	**Actual**	**Comment**
Laboratory duplicates	No exceedances of laboratory acceptance criteria	One (1) exceedance	Performance against indicator considered acceptable.

The data collected is considered to be adequately precise within the objectives and constraints of the project.

9.5 Accuracy

An assessment of the precision of data collected was undertaken, and the results presented in **Table 9.5.1.**

Table 9.5.1 Accuracy DQI

Laboratory Considerations	Target	Actual	Comment
Laboratory method blank	No exceedances of laboratory acceptance criteria	No exceedances of laboratory acceptance criteria	Performance against indicator considered acceptable.
Matrix spike recovery	No exceedances of laboratory acceptance criteria	No exceedances of laboratory acceptance criteria	Performance against indicator considered acceptable.
Surrogate spike recovery	No exceedances of laboratory acceptance criteria	No exceedances of laboratory acceptance criteria	Performance against indicator considered acceptable.
Laboratory control sample recovery	No exceedances of laboratory acceptance criteria	No exceedances of laboratory acceptance criteria	Performance against indicator considered acceptable.

The data collected is considered to be adequately accurate within the objectives and constraints of the project.

10 DISCUSSION

A discussion on comparison of laboratory analytical results and field observations, in the context of the assessment criteria adopted for this project, is presented in **Sections 10.1** to **9.2.**

10.1 Human Health - Direct Contact (HIL C – Recreational / Open Space)

10.1.1 Metals (Lead, Zinc, Copper)

The concentrations of lead, zinc and copper detected in the soil samples assessed were less than the applicable adopted direct contact human health exposure criteria and site-specific remediation acceptance criteria outlined within DP 2023.

10.2 Human Health – Inhalation / Vapour Intrusion (HSL C – Recreational / Open Space)

10.2.1 Non-Friable Asbestos

Visual asbestos containing materials were not observed on the residual surface or within any of the soil materials following the completion of remediation and make safe works within 'UF01'. Asbestos was not detected within any of the validation samples above the laboratory limit of reporting or adopted health screening level (HSL) (0.02 % w/w).

As stockpiles with Zone 1 and Zone 2 were placed upon a geo-fabric textile layer, validation sampling from the residual soil surface was not required. A systematic grid based visual inspection was completed within the stockpile footprints at the completion of load out works, no asbestos containing materials were observed at the time of the inspection.

10.2.2 Asbestos Fines and Friable Asbestos

Asbestos was not detected within any of the validation samples collected within 'UF01' above the laboratory limit of reporting or adopted health screening level (HSL) (0.02 % w/w).

As stockpiles with Zone 1 and Zone 2 were placed upon a geo-fabric textile layer, validation sampling from the residual soil surface was not required.

10.3 Aesthetics

There was no visual evidence of foreign materials within the residual surface materials or soil profile of the remediated areas of environmental concern. Some minor waste materials associated with construction works were observed within the site. However, it is assumed that the waste will be removed following completion of works, in due course. The waste material associated with construction consist of construction materials and are not expected to contaminate the site. As such, based on the aesthetics assessment criteria adopted for this project, no further assessment/management, with regard to the aesthetics risk, is required.

10.4 Terrestrial Ecosystems

10.4.1 Ecological Investigations Levels (Urban Residential)

The concentrations of lead, zinc and copper detected in the soil samples assessed were less than the applicable adopted site-specific ecological investigation level (EIL).

11 CONCLUSIONS

Based on a review of the historical contamination assessment reports provided, observations made on site by SE, and an assessment of remediation works and validation laboratory analytical data in the context of the proposed redevelopment scenario, SE makes the following conclusions:

- The detected concentrations of contaminants in the assessed soils on site are unlikely to present an unacceptable direct contact, human health inhalation, ecological or aesthetic risk;
- The remedial goal has been achieved; and

The site is considered suitable (from a contamination perspective) for the proposed land use as a rail corridor, embankments/ noise barriers, stabling yard, and maintenance facility.

12 STATEMENT OF LIMITATIONS

The findings presented in this report are based on specific searches of relevant, government historical databases and anecdotal information that were made available during the course of this investigation. To the best of our knowledge, these observations represent a reasonable interpretation of the general condition of the site at the time of report completion.

This report has been prepared solely for the use of the client to whom it is addressed and no other party is entitled to rely on its findings.

No warranties are made as to the information provided in this report. All conclusions and recommendations made in this report are of the professional opinions of personnel involved with the project and while normal checking of the accuracy of data has been conducted, any circumstances outside the scope of this report or which are not made known to personnel and which may impact on those opinions is not the responsibility of Sydney Environmental Group Pty Ltd. Should information become available regarding conditions at the site including previously unknown sources of contamination, SE reserves the right to review the report in the context of the additional information.

This report must be reviewed in its entirety and in conjunction with the objectives, scope and terms applicable to SE's engagement. The report must not be used for any purpose other than the purpose specified at the time SE was engaged to prepare the report.

Logs, figures, and drawings are generated for this report based on individual SE consultant interpretations of nominated data, as well as observations made at the time site walkover/s were completed.

Data and/or information presented in this report must not be redrawn for its inclusion in other reports, plans or documents, nor should that data and/or information be separated from this report in any way.

Should additional information that may impact on the findings of this report be encountered or site conditions change, SE reserves the right to review and amend this report.

13 REFERENCES

Douglas Partners (DP 2023), 'Remediation Works Plan, Unexpected Find (UF1) at Area of Environmental Concern (AEC) 31a Surface & Civil Alignment Works (SCAW) Package for Sydney Metro - Western Sydney Airport (SMWSA) Sweetwater Grove, Orchard Hills NSW, Ref No: 204814.01

Sydney Environmental Group Pty Ltd (SE 2024a), 'Waste Classification Assessment, CPBUIJV SCAW Project, Gate 2, Patons Lane Compound Zone 1 Stockpiling Area, Orchard Hills NSW', Dated 6 June 2024, ref: 1870-WCA-06-060624.v2f;

Sydney Environmental Group Pty Ltd (SE 2024a), 'Waste Classification Assessment, CPBUIJV SCAW Project, Gate 2, Patons Lane Compound Zone 2 Stockpiling Area, Orchard Hills NSW', Dated 11 June 2024, ref: 1870-WCA-07-110624.v2f;

ASC NEPM 2013, '*National Environmental Protection (Assessment of Site Contamination) Measure'.*

NSW EPA 2022, '*Contaminated Sites: Sampling Design Guidelines'.*

NSW EPA 2012, *'Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases'.*

NSW EPA 2017, '*Contaminated Sites: Guidelines for the NSW Site Auditor Scheme 3rd edition)'.*

NSW EPA 2020, '*Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*'.

WA DOH 2021, '*Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia'* dated May 2021.

FIGURES

EASTING 291843.483
NORTHING 6258480.927

EASTING 291878.286
NORTHING 6258480.430

EASTING 291913.089
NORTHING 6258479.933

EASTING 291839.750
NORTHING 6258466.152

EASTING 291829.895
NORTHING 6258466.274

EASTING 291821.927
NORTHING 6258451.631

EASTING 291909.438
NORTHING 6258419.858

EASTING 291839.054
NORTHING 6258411.821

EASTING 291845.506
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NORTHING 6258361.791

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NORTHING 6258325.141

EASTING 291902.250
NORTHING 6258301.611

EASTING 291854.475
NORTHING 6258275.153

EASTING 291900.110
NORTHING 6258266.410

EASTING 291918.452
NORTHING 6258263.447

AEC31AHA40
AEC31ASED4
AEC31ASW4
AEC31AHA39
AEC31AHA38
AEC31AHA36
AEC31AHA37
AEC31ATP33
AEC31AHA34
AEC31AHA35
AEC31ATP30
AEC31ATP32
AEC31ATP31
AEC31ABH03
AEC31ATP29
AEC31ATP28
AEC31ATP26
AEC31ATP27
AEC31ATP24
AEC31ATP25
AEC31ATP23
AEC31ATP22
AEC31ATP21
AEC31ABH02
AEC31ATP19
AEC31ATP20
AEC31ATP18
AEC31BTP08
AEC31BTP07
AEC31BBH02

AEC-31a

APPROXIMATE WASTE & DRUM STORAGE AREA IDENTIFIED IN EIS

House

Dog shelter/kennel

Possible old hou

0 10 20 30 40 50 m

LOCALITY PLAN

SITE

LUDDENHAM RD

PATONS LANE

Legend

- entities
- EIS AEC: High Risk
- Aite Boundary
- Sediment Sample
- Surface Water Sample
- Borhole / Groundwater Well
- Hand Auger Borehole
- Test Pit

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	CPBUI JV		
OFFICE:	Sydney	DRAWN BY:	MG
SCALE:	1:1000 @ A3	DATE:	04/05/2023

TITLE: **AEC31a Test Location Plan**
Sydney Metro Western Sydney Airport - SCAW
Sweetwater Grove, Orchard Hills

PROJECT No:	204814.01
DRAWING No:	AEC31a-01
REVISION:	0

Easting 291854.776
Northing 6258260.443

Easting 291869.445
Northing 6258265.445

Easting 291918.452
Northing 6258263.447

Easting 291839.7
Northing 6258071.5

Easting 291820.7
Northing 6258062.8

Easting 291838.5
Northing 6258066.6

Easting 291846.7
Northing 6258070.5

APPROXIMATE WASTE & DRUM STORAGE AREA IDENTIFIED IN EIS

Easting 291854.685
Northing 6258244.270

Easting 291868.829
Northing 6258252.364

Easting 291844.3
Northing 6258054.7

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Northing 6258059.8

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Northing 6258200.549

Easting 291913.201
Northing 6258206.562

Easting 291806.9
Northing 6258048.5

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Northing 6258042.2

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Northing 6258039.5

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Northing 6258098.451

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Northing 6258082.726

Easting 291926.205
Northing 6258072.025

Easting 291897.523
Northing 6258065.619

Easting 291893.735
Northing 6258035.754

Easting 291806.973
Northing 6258048.522

AEC31ABH02
AEC31ATP19
AEC31ATP20
AEC31ATP18
AEC31ATP17
AEC31ATP16
AEC31ATP15
AEC31ATP13
AEC31ATP14
AEC31ATP11
AEC31ATP10
AEC31ATP12
AEC31ASW1
AEC31ATP09
AEC31ASED1
AEC31ATP08
AEC31ATP06
AEC31ATP07
AEC31ABH01
AEC31ASED2
AEC31ASW2
AEC31ATP04
AEC31ASW3
AEC31ATP05
AEC31ASED3
AEC31ATP03
AEC31ATP02
AEC31ATP01

AEC 31a

Unexpected Find - Remediation Area - (as per SMWSASCA-CPU-1NL-NL000-CT-RPT-000043)

LOCALITY PLAN
SITE
LUDDENHAM RD
PATONS LANE

Legend
- SCAW Alignment
- EIS AEC: High Risk
- Site Boundary (See call out)
- Sediment Sample
- Surface Water Sample
- Borhole / Groundwater Well
- Hand Auger Borehole
- Test Pit

0 10 20 30 40 50 m

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	CPBUI JV		
OFFICE:	Sydney	DRAWN BY:	MG/MN
SCALE:	1:1000 @ A3	DATE:	04/05/2023

TITLE: **AEC31a Test Location Plan**
Sydney Metro Western Sydney Airport - SCAW
Sweetwater Grove, Orchard Hills

N

PROJECT No:	204814.01
DRAWING No:	AEC31a-02
REVISION:	0

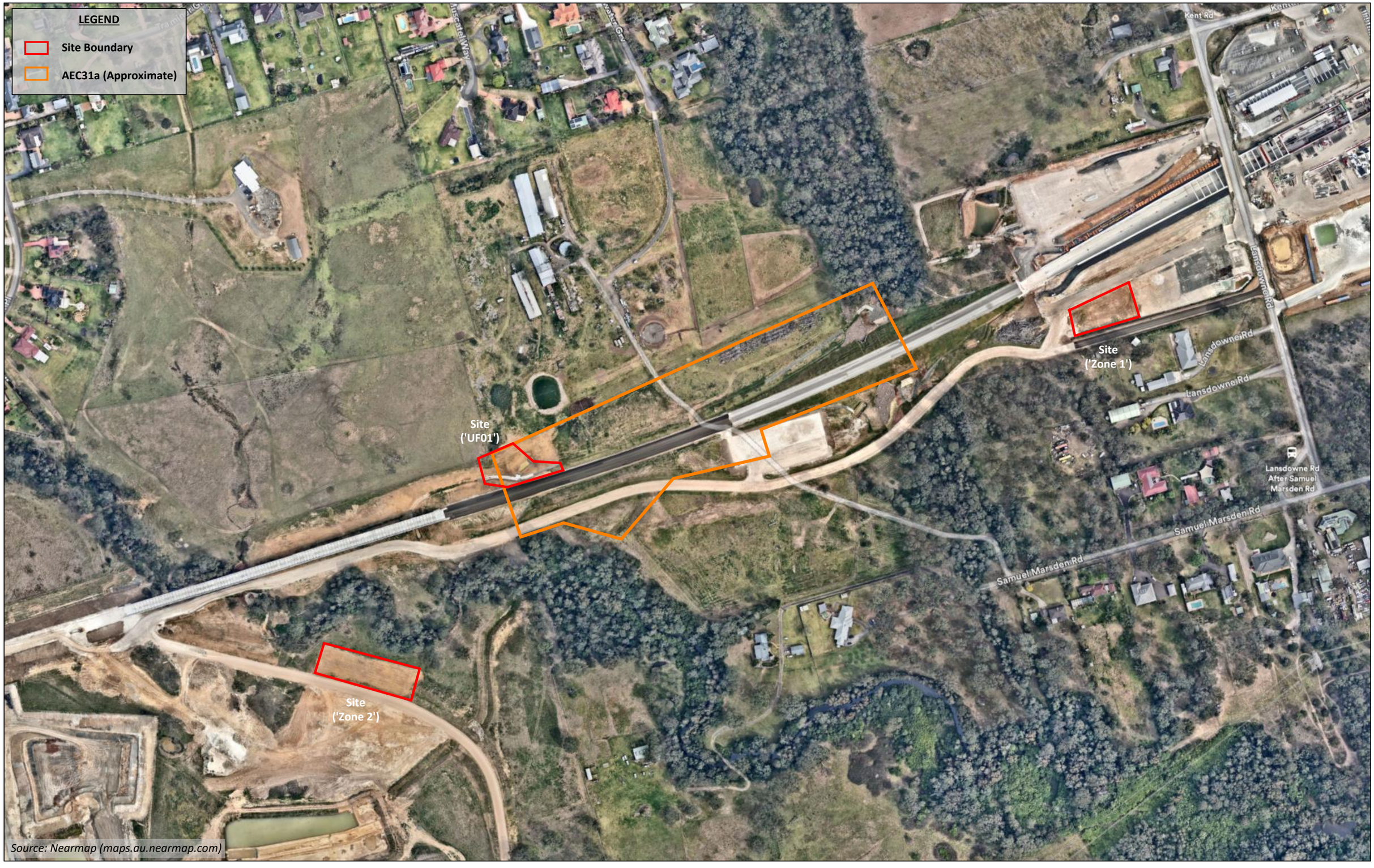
Source: Google Maps (google.com/maps/)

Source: Nearmap (maps.au.nearmap.com)

Sydney Environmental Group

Scale :	150 m	Site Locality	
Client Name:	CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV)	Figure Number:	1
Project Name:	Site Validation Report	Figure Date:	24 October 2024
Project Location:	AEC31a – SCAW Gate 2CPBUIJC SCAW Project Compound, Orchard Hills NSW	Report Number:	1870-SVR-01-110924.v1f

N



Sydney Environmental Group	Scale : 100 m	Site Layout		
	Client Name:	CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV)	Figure Number:	2
	Project Name:	Site Validation Report	Figure Date:	24 October 2024
	Project Location:	AEC31a – SCAW Gate 2CPBUIJC SCAW Project Compound, Orchard Hills NSW	Report Number:	1870-SVR-01-110924.v1f

Sydney Environmental Group

Scale :	10 m	Remedial Extents – Unexpected Find 'UF01'	
Client Name:	CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV)	Figure Number:	3
Project Name:	Site Validation Report	Figure Date:	24 October 2024
Project Location:	AEC31a – SCAW Gate 2CPBUIJC SCAW Project Compound, Orchard Hills NSW	Report Number:	1870-SVR-01-110924.v1f

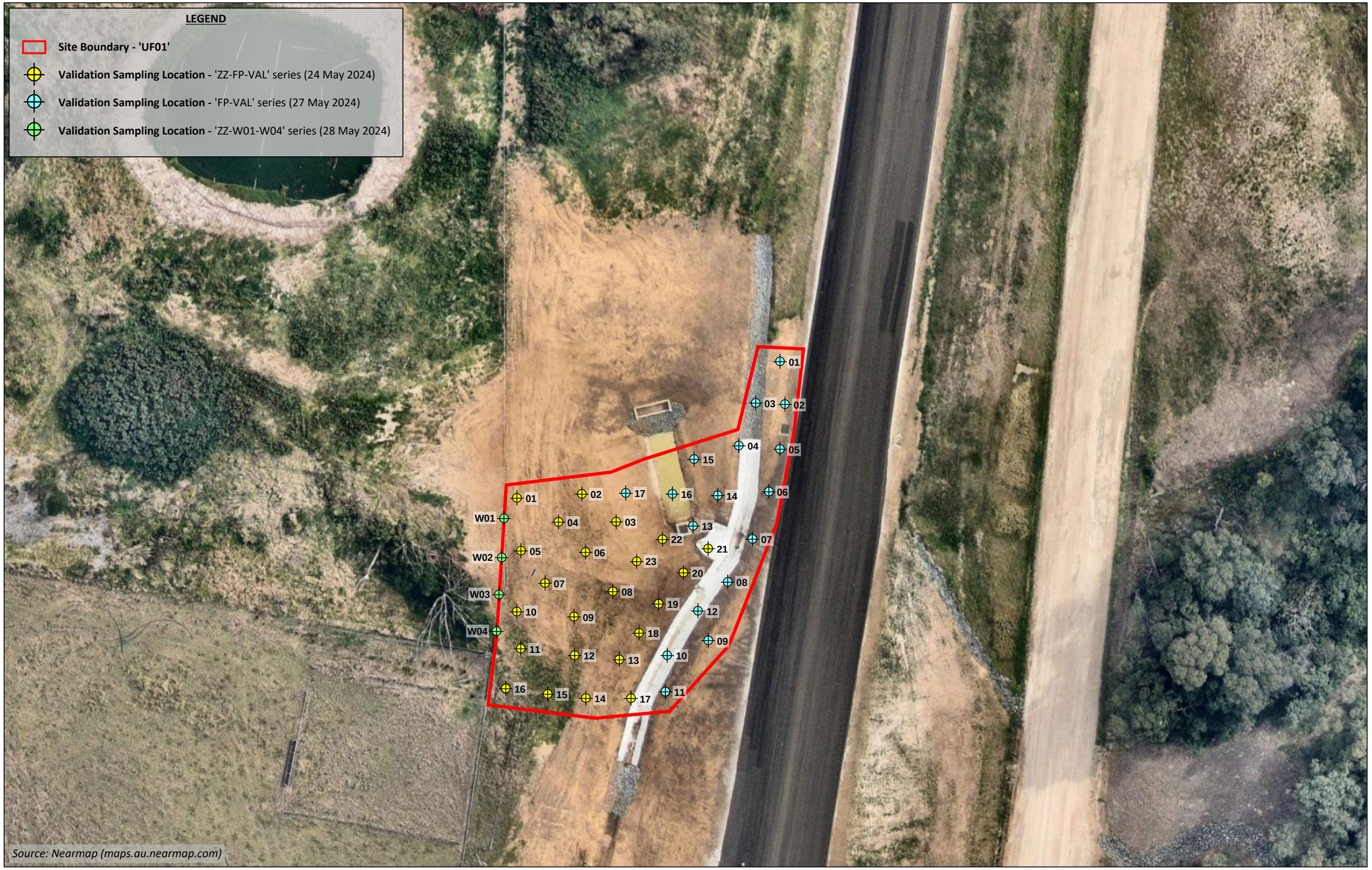
N

Scale :	30 m	Remedial Extents – Temporary Stockpiling Area 'Zone 1'		
Client Name:	CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV)	N	Figure Number:	4
Project Name:	Site Validation Report		Figure Date:	24 October 2024
Project Location:	AEC31a – SCAW Gate 2CPBUIJC SCAW Project Compound, Orchard Hills NSW		Report Number:	1870-SVR-01-110924.v1f

Sydney Environmental Group

Scale :	30 m	Remedial Extents – Temporary Stockpiling Area 'Zone 2'		
Client Name:	CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV)	N	Figure Number:	5
Project Name:	Site Validation Report		Figure Date:	24 October 2024
Project Location:	AEC31a – SCAW Gate 2CPBUIJC SCAW Project Compound, Orchard Hills NSW		Report Number:	1870-SVR-01-110924.v1f

Sydney Environmental Group



Scale : 15 m	Validation Sampling Locations – Unexpected Find 'UF01'		
Client Name:	CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV)	N	Figure Number: 6
Project Name:	Site Validation Report		Figure Date: 24 October 2024
Project Location:	AEC31a – SCAW Gate 2CPBUIJC SCAW Project Compound, Orchard Hills NSW		Report Number: 1870-SVR-01-110924.v1f

Sydney Environmental Group

TABLES

Site Adopted Criteria: Recreational / Open Space C, 0 m to <1 m | CLAY

Group	Analyte	Units	PQL	Health Investigation / Screening Level (HIL / HSL)	Environmental Investigation / Screening Level (EIL / ESL)	# Samples	# Detects	Minimum	Average	Standard Deviation	95% UCL	Maximum
Metals	Arsenic	mg/kg	2	300	100	0	0	0	NC	NC	-	ND
	Cadmium	mg/kg	0.4	90	-	0	0	0	NC	NC	-	ND
	Chromium (Total)[1]	mg/kg	5	300	190	0	0	0	NC	NC	-	ND
	Copper	mg/kg	5	17 000	210	48	48	7	24	14	-	91
	Lead	mg/kg	5	600	1100	48	48	7	27	32	-	240
	Mercury (Inorganic)	mg/kg	0.1	80	-	0	0	0	NC	NC	-	ND
	Nickel	mg/kg	5	1200	170	0	0	0	NC	NC	-	ND
	Zinc	mg/kg	5	30 000	480	48	48	7	41	33	-	200

Sample ID / Reference / Sample Date (samples 1–16)

Analyte	Z2-FP-VAL01 S24-My0078271 28/05/24	Z2-FP-VAL02 S24-My0078272 28/05/24	Z2-FP-VAL03 S24-My0078273 28/05/24	Z2-FP-VAL04 S24-My0078274 28/05/24	Z2-FP-VAL05 S24-My0078275 28/05/24	Z2-FP-VAL06 S24-My0078276 28/05/24	Z2-FP-VAL07 S24-My0078277 28/05/24	Z2-FP-VAL08 S24-My0078278 28/05/24	Z2-FP-VAL09 S24-My0078279 28/05/24	Z2-FP-VAL10 S24-My0078280 28/05/24	Z2-FP-VAL11 S24-My0078281 28/05/24	Z2-FP-VAL12 S24-My0078282 28/05/24	Z2-FP-VAL13 S24-My0078283 28/05/24	Z2-FP-VAL14 S24-My0078284 28/05/24	Z2-FP-VAL15 S24-My0078285 28/05/24	Z2-FP-VAL16 S24-My0078286 28/05/24
Arsenic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium (Total)[1]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	20	17	14	26	7.1	19	26	34	16	17	23	20	26	14	16	33
Lead	21	17	14	18	9.5	18	26	36	15	23	20	18	21	27	20	20
Mercury (Inorganic)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	21	27	17	37	19	30	19	49	23	29	22	31	33	28	15	58

Sample ID / Reference / Sample Date (samples 17–32)

Analyte	Z2-FP-VAL17 S24-My0078287 28/05/24	Z2-FP-VAL18 S24-My0078288 28/05/24	Z2-FP-VAL19 S24-My0078289 28/05/24	Z2-FP-VAL20 S24-My0078290 28/05/24	Z2-FP-VAL21 S24-My0078291 28/05/24	Z2-FP-VAL22 S24-My0078292 28/05/24	Z2-FP-VAL23 S24-My0078293 28/05/24	FP-VAL01 S24-My0070485 24/05/24	FP-VAL02 S24-My0070486 24/05/24	FP-VAL03 S24-My0070487 24/05/24	FP-VAL04 S24-My0070488 24/05/24	FP-VAL05 S24-My0070489 24/05/24	FP-VAL06 S24-My0070490 24/05/24	FP-VAL07 S24-My0070491 24/05/24	FP-VAL08 S24-My0070492 24/05/24	FP-VAL09 S24-My0070493 24/05/24
Arsenic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium (Total)[1]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	17	15	29	20	18	14	15	19	20	16	25	24	21	30	24	36
Lead	19	19	35	21	21	15	23	29	26	27	36	39	25	35	33	25
Mercury (Inorganic)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	25	18	66	71	36	9.9	13	50	35	61	53	67	36	63	46	80

Sample ID / Reference / Sample Date (samples 33–48)

Analyte	FP-VAL10 S24-My0070494 24/05/24	FP-VAL11 S24-My0070495 24/05/24	FP-VAL12 S24-My0070496 24/05/24	FP-VAL13 S24-My0070497 24/05/24	FP-VAL14 S24-My0070498 24/05/24	FP-VAL15 S24-My0070499 24/05/24	FP-VAL16 S24-My0070500 24/05/24	FP-VAL17 S24-My0070501 24/05/24	Z2-W01-1.0 S24-My0078185 28/05/24	Z2-W02-0.5 S24-My0078186 28/05/24	Z2-W02-1.5 S24-My0078187 28/05/24	Z2-W03-0.5 S24-My0078188 28/05/24	Z2-W03-1.5 S24-My0078189 28/05/24	Z2-W04-1.0 S24-My0078190 28/05/24	DUP01 S24-My0078294 28/05/24	DUP01 S24-My0070502 24/05/24
Arsenic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium (Total)[1]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	19	37	42	25	13	15	10	9.3	91	38	28	69	16	22	29	23
Lead	18	35	30	21	15	19	6.6	7.5	17	240	21	16	17	28	29	30
Mercury (Inorganic)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	12	97	58	16	7.2	11	11	6.9	200	59	50	31	25	110	37	63

General Notes to Table: | - = Not Analysed | NC = Not Calculated | ND = Non-Detect | NL = Not Limiting | PQL = Practical Quantification Limit | UCL = Upper Confidence Limit |

Notes to Statistical Calculations: The average and Standard Deviation are calculated with non-detects replaced with a null (0) proxy value. Where all values are non-detect, a "NC" value is ouputted.

Additional Notes: [1] HIL limits are for Chromuium (VI) only, and EIL limits are for Chromium (III) only, total Chromium measured for initial screening

Value	Highlighted concentration exceeds the site adopted criteria (HIL/HSL)
Value	Highlighted concentration exceeds the site adopted criteria (EIL/ESL)
Value	Highlight concentration exceeds the site adopted criteria (Petroleum Management Limit)
Value	Highlighted concentration exceeds multiple site adopted criterion

		Group	Asbestos					
		Analyte	Asbestos Sample Mass/Dimensions	Asbestos Sample Description	AF	FA	FA + AF	ACM
		Units	-	-	% w/w	% w/w	% w/w	% w/w
		PQL	-	-	0.001	0.001	0.001	0.01
		Health Sceening Level (HSL)	-	-	0.001	0.001	0.001	0.01
	Site Adopted Criteria Recreational / Open Space C							
Sample ID	Reference / Sample Date			# Samples	46	46	46	46
				# Detects	0	0	0	0
				Minimum	ND	ND	ND	ND
				Average	NC	NC	NC	NC
				Standard Deviation	NC	NC	NC	NC
				Maximum	ND	ND	ND	ND
Z2-FP-VAL01	S24-My0078271 28/05/24		571g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL02	S24-My0078272 28/05/24		397g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL03	S24-My0078273 28/05/24		443g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL04	S24-My0078274 28/05/24		461g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL05	S24-My0078275 28/05/24		511g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL06	S24-My0078276 28/05/24		471g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL07	S24-My0078277 28/05/24		522g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL08	S24-My0078278 28/05/24		504g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL09	S24-My0078279 28/05/24		414g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL10	S24-My0078280 28/05/24		529g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL11	S24-My0078281 28/05/24		491g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL12	S24-My0078282 28/05/24		407g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL13	S24-My0078283 28/05/24		407g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL14	S24-My0078284 28/05/24		541g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL15	S24-My0078285 28/05/24		573g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL16	S24-My0078286 28/05/24		574g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL17	S24-My0078287 28/05/24		508g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL18	S24-My0078288 28/05/24		515g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL19	S24-My0078289 28/05/24		624g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL20	S24-My0078290 28/05/24		493g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL21	S24-My0078291 28/05/24		491g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL22	S24-My0078292 28/05/24		458g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-FP-VAL23	S24-My0078293 28/05/24		495g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL01	S24-My0070485 24/05/24		664g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL02	S24-My0070486 24/05/24		593g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL03	S24-My0070487 24/05/24		632g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL04	S24-My0070488 24/05/24		534g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL05	S24-My0070489 24/05/24		683g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL06	S24-My0070490 24/05/24		632g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL07	S24-My0070491 24/05/24		734g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL08	S24-My0070492 24/05/24		665g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL09	S24-My0070493 24/05/24		619g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL10	S24-My0070494 24/05/24		634g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL11	S24-My0070495 24/05/24		611g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL12	S24-My0070496 24/05/24		654g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL13	S24-My0070497 24/05/24		598g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL14	S24-My0070498 24/05/24		558g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL15	S24-My0070499 24/05/24		530g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL16	S24-My0070500 24/05/24		602g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
FP-VAL17	S24-My0070501 24/05/24		481g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-W01-1.0	S24-My0078185 28/05/24		638g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-W02-0.5	S24-My0078186 28/05/24		500g	Brown fine-grained clayey soil, corroded metal and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-W02-1.5	S24-My0078187 28/05/24		540g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-W03-0.5	S24-My0078188 28/05/24		687g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-W03-1.5	S24-My0078189 28/05/24		585g	Brown fine-grained clayey soil, cement and rocks	< 0.001	< 0.001	< 0.001	< 0.01
Z2-W04-1.0	S24-My0078190 28/05/24		624g	Brown fine-grained clayey soil and rocks	< 0.001	< 0.001	< 0.001	< 0.01

General Notes to Table: | - = Not Analysed | ACM = Asbestos Containing Material | AF = Asbestos Fines | FA = Fibrous Asbestos | NC = Not Calculated | ND = Non-Detect |

| NL = Not Limiting |PQL = Practical Quantification Limit

Notes to Statistical Calculations: The Average and Standard Deviation are calculated with non-detects replaced with a null (0) proxy value. Where all values are non-detect, a "NC" value is ouputted.

Value Highlighted concentration exceeds the site adopted criteria (HIL)

Sample Label	Sample ID / Refrence	Asbestos Health Screening Level NEPM ASC 2013 (% w/w)	On-site gravimetric results			
			Weight of Sample (10L), g	Onsite weight of ACM fragment >7mm, g	Weight of ACM fragment >7mm, g	Percentage of Bonded ACM >7mm (10L), %w/w
Z2-FP-VAL01	S24-My0078271 28/05/24	0.01%	15325	ND	-	0.000%
Z2-FP-VAL02	S24-My0078272 28/05/24	0.01%	16643	ND	-	0.000%
Z2-FP-VAL03	S24-My0078273 28/05/24	0.01%	16099	ND	-	0.000%
Z2-FP-VAL04	S24-My0078274 28/05/24	0.01%	12608	ND	-	0.000%
Z2-FP-VAL05	S24-My0078275 28/05/24	0.01%	14645	ND	-	0.000%
Z2-FP-VAL06	S24-My0078276 28/05/24	0.01%	14473	ND	-	0.000%
Z2-FP-VAL07	S24-My0078277 28/05/24	0.01%	17887	ND	-	0.000%
Z2-FP-VAL08	S24-My0078278 28/05/24	0.01%	16498	ND	-	0.000%
Z2-FP-VAL09	S24-My0078279 28/05/24	0.01%	14762	ND	-	0.000%
Z2-FP-VAL10	S24-My0078280 28/05/24	0.01%	15309	ND	-	0.000%
Z2-FP-VAL11	S24-My0078281 28/05/24	0.01%	16219	ND	-	0.000%
Z2-FP-VAL12	S24-My0078282 28/05/24	0.01%	15907	ND	-	0.000%
Z2-FP-VAL13	S24-My0078283 28/05/24	0.01%	16646	ND	-	0.000%
Z2-FP-VAL14	S24-My0078284 28/05/24	0.01%	15138	ND	-	0.000%
Z2-FP-VAL15	S24-My0078285 28/05/24	0.01%	15546	ND	-	0.000%
Z2-FP-VAL16	S24-My0078286 28/05/24	0.01%	13886	ND	-	0.000%
Z2-FP-VAL17	S24-My0078287 28/05/24	0.01%	15187	ND	-	0.000%
Z2-FP-VAL18	S24-My0078288 28/05/24	0.01%	14683	ND	-	0.000%
Z2-FP-VAL19	S24-My0078289 28/05/24	0.01%	17927	ND	-	0.000%
Z2-FP-VAL20	S24-My0078290 28/05/24	0.01%	16418	ND	-	0.000%
Z2-FP-VAL21	S24-My0078291 28/05/24	0.01%	15149	ND	-	0.000%
Z2-FP-VAL22	S24-My0078292 28/05/24	0.01%	14733	ND	-	0.000%
Z2-FP-VAL23	S24-My0078293 28/05/24	0.01%	16881	ND	-	0.000%
FP-VAL01	S24-My0070485 24/05/24	0.01%	17317	ND	-	0.000%
FP-VAL02	S24-My0070486 24/05/24	0.01%	14106	ND	-	0.000%
FP-VAL03	S24-My0070487 24/05/24	0.01%	13680	ND	-	0.000%
FP-VAL04	S24-My0070488 24/05/24	0.01%	16151	ND	-	0.000%
FP-VAL05	S24-My0070489 24/05/24	0.01%	13435	ND	-	0.000%
FP-VAL06	S24-My0070490 24/05/24	0.01%	13257	ND	-	0.000%
FP-VAL07	S24-My0070491 24/05/24	0.01%	17655	ND	-	0.000%
FP-VAL08	S24-My0070492 24/05/24	0.01%	16696	ND	-	0.000%
FP-VAL09	S24-My0070493 24/05/24	0.01%	14851	ND	-	0.000%
FP-VAL10	S24-My0070494 24/05/24	0.01%	16506	ND	-	0.000%
FP-VAL11	S24-My0070495 24/05/24	0.01%	14413	ND	-	0.000%
FP-VAL12	S24-My0070496 24/05/24	0.01%	15044	ND	-	0.000%
FP-VAL13	S24-My0070497 24/05/24	0.01%	15370	ND	-	0.000%
FP-VAL14	S24-My0070498 24/05/24	0.01%	14233	ND	-	0.000%
FP-VAL15	S24-My0070499 24/05/24	0.01%	14419	ND	-	0.000%
FP-VAL16	S24-My0070500 24/05/24	0.01%	13180	ND	-	0.000%
FP-VAL17	S24-My0070501 24/05/24	0.01%	13463	ND	-	0.000%
Z2-W01-1.0	S24-My0078185 28/05/24	0.01%	15944	ND	-	0.000%
Z2-W02-0.5	S24-My0078186 28/05/24	0.01%	12554	ND	-	0.000%
Z2-W02-1.5	S24-My0078187 28/05/24	0.01%	15614	ND	-	0.000%
Z2-W03-0.5	S24-My0078188 28/05/24	0.01%	15104	ND	-	0.000%
Z2-W03-1.5	S24-My0078189 28/05/24	0.01%	17455	ND	-	0.000%
Z2-W04-1.0	S24-My0078190 28/05/24	0.01%	13594	ND	-	0.000%

General Notes to Table: ACM = Asbestos Containing Material | ND = Non-Detect

Value Highlighted concentration exceeds the site adopted criteria (HIL)

		Sample ID			Z2-FP-VAL01	DUP01	RPD Limit	RPD	Z2-FP-VAL01	DUP01A	RPD Limit	RPD	FP-VAL01	DUP01	RPD Limit	RPD	FP-VAL01	DUP01A	RPD Limit	RPD
		Reference /Sample Date			S24-My0078271 28/05/24	S24-My0078294 28/05/24			S24-My0078271 28/05/24	ES2417697-001 28/05/24			S24-My0070485 24/05/24	S24-My0070502 24/05/24			S24-My0070485 24/05/24	ES2417298-001 24/05/24		
Group	**Analyte**	**Units**	**Eurofins PQL**	**SGS PQL**																
Metals	**Arsenic**	**mg/kg**	**2**	**1**	-	-	30	-	-	-	30	-	-	-	30	-	-	-	30	-
	Cadmium	**mg/kg**	**0.4**	**0.3**	-	-	30	-	-	-	30	-	-	-	30	-	-	-	30	-
	Chromium (Total)	**mg/kg**	**5**	**1**	-	-	30	-	-	-	30	-	-	-	30	-	-	-	30	-
	Copper	**mg/kg**	**5**	**1**	20	29	NL	37	20	-	NL	-	19	23	NL	19	19	-	NL	-
	Lead	**mg/kg**	**5**	**1**	21	29	NL	32	21	14.7	NL	35	29	30	NL	3	29	22	NL	54
	Mercury (Inorganic)	**mg/kg**	**0.1**	**0.05**	-	-	30	-	-	-	30	-	-	-	30	-	-	-	30	-
	Nickel	**mg/kg**	**5**	**1**	-	-	30	-	-	-	30	-	-	-	30	-	-	-	30	-
	Zinc	**mg/kg**	**5**	**2**	21	37	NL	55	21	-	NL	-	50	63	NL	23	50	-	NL	-

General Notes to Table: | - = Not Analysed | NC = Not Calculated | ND = Non-Detect | PAH = Polyaromatic Hydrocarbon |

| PQL = Practical Quantification Limit | RPD = Relative Percentage Difference | TEQ = Toxicity Equivalence Quotient |

Notes to RPD limits: Limits vary according based on a comparison of the parent sample concentration and the PQL for each analyte.

The following RPD limits apply: analyte concentration < 10x PQL: No RPD limit; > 10x < 20x PQL, 50% RPD limit; > 20x PQL, 30% RPD limit.

Value Highlighted value exceeds the site adopted RPD criteria

APPENDIX A

LABORATORY DOCUMENTATION

APPENDIX C

WORK HEALTH AND SAFTEY DOCUMENTAITON

Sydney Environmental Group

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Waste Classification Assessment Report	
Client:	CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV)
Report No:	1870-WCA-07-110624.v1f
Site Address:	CPBUIJV SCAW Project Gate 2, Patons Lane Compound Zone 2 Stockpiling Area, Orchard Hills NSW
Subject Area Inspected:	CPBUIJV SCAW Project Gate 2, Patons Lane Compound Zone 2 Stockpiling Area, Orchard Hills NSW, temporary stockpiling area, stockpiled soil materials 'SP01', 'SP02', 'SP03', 'SP04', 'SP05', and 'SP06' (refer to **Figure 1, Attachment 1**).
Date of Field Work:	28 May 2024
Date of Report:	11 June 2024
***In-situ* or Stockpile**	*Stockpiled*
Approximate Dimensions:	**Stockpile 1** ≈ 10 m x 9 m x 1 m **Stockpile 2** ≈ 10 m x 5 m 1 m **Stockpile 3** ≈ 20 m x 10 m x 1 m **Stockpile 4** ≈ 20 m x 10 m x 1 m **Stockpile 5** ≈ 20 m x 10 m x 1 m **Stockpile 6** ≈ 20 m x 10 m x 1 m
Approximate Volume and Mass:	**Stockpile 1** ≈ 100 m^3 / 180 tonnes **Stockpile 2** ≈ 50 m^3 / 90 tonnes **Stockpile 3** ≈ 200 m^3 / 360 tonnes **Stockpile 4** ≈ 200 m^3 / 360 tonnes **Stockpile 5** ≈ 200 m^3 / 360 tonnes **Stockpile 6** ≈ 200 m^3 / 360 tonnes Assuming a bulk density of 1.8 tonnes per m^3
Sample Size:	**Stockpile 1** Four (4) soil samples and one (1) fibre cement sample **Stockpile 2** Three (3) soil samples **Stockpile 3** Eight (8) soil samples **Stockpile 4** Eight (8) soil samples **Stockpile 5** Eight (8) soil samples **Stockpile 6** Eight (8) soil samples
Waste Description:	Soil materials across all stockpiles were observed to generally consist of Silty CLAY, low plasticity, medium brown, dry. Foreign materials including asbestos containing materials (ACM), fabric, scrap metal, brick, tile, PVC, plastics and terracotta were noted. No hydrocarbon odours, staining or sulfidic ores were observed (refer to **Site Photographs, Attachment 2**).

Waste Classification	**Stockpile 1:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)***
	Stockpile 2: ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)***
	Stockpile 3: ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)***
	Stockpile 4: ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)***
	Stockpile 5: ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)***
	Stockpile 6: ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)***

1. Introduction

Sydney Environmental Group Pty Ltd (SE) was engaged by CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIVJ) (the client) to determine the waste classification of stockpiled soil materials located within CPBUIJV SCAW Patons Lane Compound Zone 2, Orchard Hills NSW (herein referred to as 'the site', refer to **Figure 1, Attachment 1**).

An appropriately experienced environmental consultant from SE visited the site on 28 May 2024 and collected a total of thirty-nine (39) soil samples and one (1) fibre cement sample from six (6) separate stockpiles of soil materials (refer to **Figure 1, Attachment 1** and **Site Photographs, Attachment 2)** for the purpose of off-site disposal to a licensed waste receiving facility in accordance with the NSW *Protection of the Environment Operations Act* 1997 (NSW POEO 1997) and NSW EPA *Waste Classification Guidelines* 2014 (NSW EPA WCG 2014).

Refer to laboratory results summary **Table 5.2.1, Table 5.2.2** , **Table 5.2.3**, **Table 5.2.4**, **Table 5.2.5** and **Table 5.2.6** with laboratory reports provided in **Attachment 3**.

The scope of works for SE was;

- Visual inspection of the stockpiled soil materials;
- Collection of four (4) soil samples and one (1) fibre cement sample from **Stockpile 1**;
- Collection of three (3) soil samples from **Stockpile 2**;
- Collection of eight (8) soil samples from **Stockpile 3**;
- Collection of eight (8) soil samples from **Stockpile 4**;
- Collection of eight (8) soil samples from **Stockpile 5**;
- Collection of eight (8) soil samples from **Stockpile 6**;
- Analysis for contaminants of potential concern at a National Association of Testing Authorities (NATA) accredited laboratory;
- Evaluation of analyte concentrations in accordance with assessment criteria outlined in NSW EPA WCG 2014 for off-site disposal; and
- Preparation of a Waste Classification Report detailing the observations of the site inspection, results of analysis undertaken and classification of the materials.

2. Desktop / Background Study

2.1. Geological Survey

A review of the soil landscapes layer accessed on the Environment NSW 'eSpade V2.2' web application (environment.nsw.gov.au/eSpade2WebApp, accessed 24 May 2024), indicated that the site is underlain by Wianamatta Group Ashfield Shale consisting of laminite and dark grey siltstone, Bringelly Shale which consists of shale with occasional calcareous claystone, laminite and infrequent coal, and Minchinbury Sandstone consisting of fine to medium-grained quartz lithic sandstone.

2.2. Acid Sulfate Soils Risk

A review of the acid sulfate soil risk mapping layer accessed on the Environment NSW 'eSpade V2.2' web application (environment.nsw.gov.au/eSpade2WebApp, accessed 24 May 2024 indicated that the site is located in an area classed as ***No Known Occurrence*** for which acid sulfate soils could be encountered in these environments. As land management activities will not affected by acid sulfate soil materials, further assessment is not deemed warranted.

2.3. NSW EPA Contaminated Land Register and List of NSW Contaminated Site Notified to the EPA

A review of the publicly available online NSW EPA 'Record of Notices' and 'List of NSW Contaminated Site Notified to the EPA' was completed on 24 May 2024. The review indicated that the site was not the subject of any licences, applications, notices, audits or pollution studies or reduction programs under Section 308 of the NSW Protection of the Environment Operations Act 1997 or any notifications under Section 58 of the NSW Contaminated Land Management Act 1997 nor did the review identify the site or any adjacent sites as being significantly contaminated.

2.4. Surrounding Land Use

A review of online mapping and observations made during the site walkover indicated the following land use activities adjacent to the site:

North: M12 Motorway development and Bingo Recycling Facility;
South: Rural Residential;
East: Rural Residential; and
West: Rural Residential.

3. Sampling Plan, Methodology and Scope of Analysis

3.1. Soil Sampling & Transportation

Upon inspection and logging of the material, thirty-nine(39) soil samples and one (1) fibre cement sample were collected from the stockpiled soil materials for waste classification. The samples were recovered by an appropriately experienced environmental consultant from SE using disposable nitrile gloves and placed in sterile glass jars with Teflon lined lids or appropriate plastic sample bags provided by the laboratory. The samples were then transferred within an ice cooled esky (maintained at ≈ 4^{o}C) directly to Eurofins Scientific | Environment Testing, a National Australian Testing Authority (NATA) accredited laboratory for analysis.

3.2. Laboratory Analysis

The samples were analysed for the following parameters:

- Asbestos Quantitative (WA DOH 2021);
- Benzene, Toluene, Ethylbenzene, total Xylene (BTEX);
- Heavy Metals (Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc);
- Total Petroleum Hydrocarbons (TRHs);
- Polycyclic Aromatic Hydrocarbons (PAHs);
- Organochlorine Pesticides (OCPs); and
- Polychlorinated Biphenyls (PCBs).

Refer to laboratory analytical results summary in **Table 5.2.1, Table 5.2.2**, **Table 5.2.3**, **Table 5.2.4**, **Table 5.2.5** and **Table 5.2.6.**

4. Waste Classification Procedure

The 6-step classification procedure in NSW EPA (2014) was followed, with the results presented in **Table 4.1.1** below.

Table 4.1.1 NSW EPA 2014 6 Step Waste Classification Procedure

Step		Material Observation
1	Is the waste special waste?	**Stockpile 1:** Yes. Asbestos was detected in fibre cement fragment 'FC01' taken from the stockpiled soil materials. As the fragments was observed to be greater than 7 mm and could not be crushed or pulverised by hand. As such, the asbestos is considered to be ***non-friable***. **Stockpile 2:** Yes. Asbestos was observed in the form of fibre cement fragments across the stockpiled soil materials, represented by 'FC01'. **Stockpile 3:** Yes. Asbestos was detected within asbestos containing fibre cement materials within soil samples 'Z2-SP03-04' and 'Z2-SP03-05'. The total estimated concentration of ACM within the samples was 0.029% w/w and 0.026% w/w respectively. Friable Asbestos (FA) were also detected in soil samples 'Z2-SP03-07' and Z2-SP03-08'. No asbestos was detected at the reporting limit of 0.001% w/w. **Stockpile 4:** Yes. Asbestos was detected within asbestos containing fibre cement material within soil sample 'Z2-SP04-03'. Asbestos fines (AF) were detected within soil sample 'Z2-SP04-06', however was not detected at the limit of reporting (0.001% w/w). **Stockpile 5:** Yes. Asbestos was observed in the form of fibre cement fragments across the stockpiled soil materials, represented within 'FC01'. **Stockpile 6:** Yes. AF was detected within soil sample 'Z2-SP06-03', however no asbestos was detected at the reporting limit of 0.001% w/w. SE note that all six (6) stockpiles are considered to contain ***non-friable*** asbestos, as no AF/FA was detected above the reporting limit of 0.001% w/w.
2	Is the waste liquid waste?	No
3	Is the waste pre-classified?	No
4	Does the waste possess hazardous characteristics	No
5	Waste classification using chemical assessment.	Yes. Refer to **Table 5.2.1, Table 5.2.2, Table 5.2.3, Table 5.2.4, Table 5.2.5** and **Table 5.2.6** for the summary analytical results from the samples collected from the in-situ soil materials.
6	Is the waste putrescible or non-putrescible?	Non-putrescible

5. Summary of Results

5.1. Determination of Waste Classification Using Chemical Assessment

The first test which must be used to chemically assess waste is the Specific Contaminant Concentration (SCC) test. If a waste's SCC test value exceeds the Contaminant Threshold (CT1) set for General Solid Waste (GSW), further assessment using the Toxicity Characterisation Leaching Procedure (TCLP) test may be used.

To establish the waste's classification using both SCC and TCLP tests, the test values for each chemical contaminant must be compared with the threshold values provided in **Table 5.2.1, Table 5.2.2**, **Table 5.2.3**, **Table 5.2.4**, **Table 5.2.5** and **Table 5.2.6.** A summary of the relationship between SCC and TCLP values and the waste's classification is provided below in **Table 5.1.1**.

Table 5.1.1 – Waste Classification by SCC and TCLP Tests

Waste Classification	SCC Value	TCLP Value
General Solid Waste (GSW)	≤ SCC1	≤ TCLP1
Restricted Solid Waste (RSW)	≤ SCC2	≤ TCLP2
Hazardous Waste	> SCC2	> TCLP2

5.2. Comparison of Analytical Results with NSW EPA 2014

A summary of analytical results considered in the determination the waste classification of the soil materials under investigation is provided below in **Table 5.2.1, Table 5.2.2**, **Table 5.2.3**, **Table 5.2.4**, **Table 5.2.5** and **Table 5.2.6**.

Table 5.2.1 – Summary of analytical results and comparison with NSW EPA 2014 criteria of **Stockpile 1**

	Waste Classification Assessment Criteria		Results		Conclusion
Analytes	**Maximum Values of Total Concentration Assigned for General Solid Waste CT1/CT2, mg/kg**	**Maximum Values of Total Concentration Assigned for General Solid Waste TCLP1 (mg/L)/ SCC1 (mg/kg)**	**Maximum Concentration Detected (mg/kg)**	**Maximum TCLP Concentration Detected (mg/ L)**	**Acceptable as General Solid Waste (GSW)**
Metals					
Arsenic	100/400	5/500	22	-	Acceptable
Cadmium	20/80	1/100	0.7	-	Acceptable
Chromium	100/400	5/1,900	30	-	Acceptable
Copper	NA	NA	80	-	Acceptable
Lead	100/400	5/1,500	71	-	Acceptable
Mercury	4/16	0.2/50	ND	-	Acceptable
Nickel	40/160	2/1,050	17	-	Acceptable
Zinc	NA	NA	820	-	Acceptable
TRHs					
TRH Fraction $C_6 – C_{10}$	650/2,600	NA/650	ND	-	Acceptable
TRH Fraction C_{10}- C_{36}	10,000/40,000	NA/10,000	262	-	Acceptable
OCPs					
DDT + DDD + DDE	50/50[1]	NA/50[1]	ND	-	Acceptable
Chlordane	50/50[1]	NA/50[1]	ND	-	Acceptable
Aldrin + Dieldrin	50/50[1]	NA/50[1]	ND	-	Acceptable
Endosulfan	60/240	3/108	ND	-	Acceptable
Scheduled Chemicals Total[1]	50/50	NA/50	ND	-	Acceptable
PCBs					
Total PCBs	<50/< 50	NA/< 50	ND	-	Acceptable
BTEX					
Benzene	10/40	0.5/18	ND	-	Acceptable
Toluene	288/1,152	14.4/518	ND	-	Acceptable
Ethyl-benzene	600/2,400	30/1,080	ND	-	Acceptable
Xylenes (total)	1,000/4,000	50/1,800	ND	-	Acceptable
PAHs					
Benzo(a)pyrene	0.8/3.2	0.04/10	ND	-	Acceptable
PAH total	200/800	NA/200	ND	-	Acceptable

Notes to table

Note that where the concentration of PCBs (Total) or Scheduled Chemicals (Total) exceed 2 mg/kg, the waste must be managed in accordance with the NSW EPA's relevant chemical control order (Polychlorinated Biphenyl (PCB) Chemical Control Order 1997 or Scheduled Chemical Wastes Chemical Control Order 2004. Note that there are additional handling requirements where the concentration meets of exceeds 50 mg/kg of either PCBs (Total) or Scheduled Chemicals (Total).

ND – Not detected / below Practical Quantitation Limit (PQL)

NA – Not Applicable

[1] Scheduled Chemicals per Table 1 NSW EPA WCG 2014.

Table 5.2.2 – Summary of analytical results and comparison with NSW EPA 2014 criteria of **Stockpile 2**

	Waste Classification Assessment Criteria		Results		Conclusion
Analytes	**Maximum Values of Total Concentration Assigned for General Solid Waste CT1/CT2, mg/kg**	**Maximum Values of Total Concentration Assigned for General Solid Waste TCLP1 (mg/L)/ SCC1 (mg/kg)**	**Maximum Concentration Detected (mg/kg)**	**Maximum TCLP Concentration Detected (mg/ L)**	**Acceptable as General Solid Waste (GSW)**
Metals					
Arsenic	100/400	5/500	13	-	Acceptable
Cadmium	20/80	1/100	ND	-	Acceptable
Chromium	100/400	5/1,900	40	-	Acceptable
Copper	NA	NA	120	-	Acceptable
Lead	100/400	5/1,500	28	-	Acceptable
Mercury	4/16	0.2/50	ND	-	Acceptable
Nickel	40/160	2/1,050	9.9	-	Acceptable
Zinc	NA	NA	230	-	Acceptable
TRHs					
TRH Fraction $C_6 – C_{10}$	650/2,600	NA/650	ND	-	Acceptable
TRH Fraction C_{10}- C_{36}	10,000/40,000	NA/10,000	91	-	Acceptable
OCPs					
DDT + DDD + DDE	50/50[1]	NA/50[1]	ND	-	Acceptable
Chlordane	50/50[1]	NA/50[1]	ND	-	Acceptable
Aldrin + Dieldrin	50/50[1]	NA/50[1]	ND	-	Acceptable
Endosulfan	60/240	3/108	ND	-	Acceptable
Scheduled Chemicals Total[1]	50/50	NA/50	ND	-	Acceptable
PCBs					
Total PCBs	<50/< 50	NA/< 50	ND	-	Acceptable
BTEX					
Benzene	10/40	0.5/18	ND	-	Acceptable
Toluene	288/1,152	14.4/518	ND	-	Acceptable
Ethyl-benzene	600/2,400	30/1,080	ND	-	Acceptable
Xylenes (total)	1,000/4,000	50/1,800	ND	-	Acceptable
PAHs					
Benzo(a)pyrene	0.8/3.2	0.04/10	ND	-	Acceptable
PAH total	200/800	NA/200	ND	-	Acceptable

Notes to table

Note that where the concentration of PCBs (Total) or Scheduled Chemicals (Total) exceed 2 mg/kg, the waste must be managed in accordance with the NSW EPA's relevant chemical control order (Polychlorinated Biphenyl (PCB) Chemical Control Order 1997 or Scheduled Chemical Wastes Chemical Control Order 2004. Note that there are additional handling requirements where the concentration meets of exceeds 50 mg/kg of either PCBs (Total) or Scheduled Chemicals (Total).

ND – Not detected / below Practical Quantitation Limit (PQL)

NA – Not Applicable

[1] Scheduled Chemicals per Table 1 NSW EPA WCG 2014.

Table 5.2.3 – Summary of analytical results and comparison with NSW EPA 2014 criteria of **Stockpile 3**

	Waste Classification Assessment Criteria		Results		Conclusion
Analytes	**Maximum Values of Total Concentration Assigned for General Solid Waste CT1/CT2, mg/kg**	**Maximum Values of Total Concentration Assigned for General Solid Waste TCLP1 (mg/L)/ SCC1 (mg/kg)**	**Maximum Concentration Detected (mg/kg)**	**Maximum TCLP Concentration Detected (mg/ L)**	**Acceptable as General Solid Waste (GSW)**
Metals					
Arsenic	100/400	5/500	87	-	Acceptable
Cadmium	20/80	1/100	2.2	-	Acceptable
Chromium	100/400	5/1,900	57	-	Acceptable
Copper	NA	NA	580	-	Acceptable
Lead	100/400	5/1,500	**440**	<0.01	Acceptable
Mercury	4/16	0.2/50	0.1	-	Acceptable
Nickel	40/160	2/1,050	37	-	Acceptable
Zinc	NA	NA	2300	-	Acceptable
TRHs					
TRH Fraction $C_6 – C_{10}$	650/2,600	NA/650	ND	-	Acceptable
TRH Fraction C_{10}- C_{36}	10,000/40,000	NA/10,000	190	-	Acceptable
OCPs					
DDT + DDD + DDE	50/50[1]	NA/50[1]	ND	-	Acceptable
Chlordane	50/50[1]	NA/50[1]	ND	-	Acceptable
Aldrin + Dieldrin	50/50[1]	NA/50[1]	ND	-	Acceptable
Endosulfan	60/240	3/108	ND	-	Acceptable
Scheduled Chemicals Total[1]	50/50	NA/50	ND	-	Acceptable
PCBs					
Total PCBs	<50/< 50	NA/< 50	ND	-	Acceptable
BTEX					
Benzene	10/40	0.5/18	ND	-	Acceptable
Toluene	288/1,152	14.4/518	ND	-	Acceptable
Ethyl-benzene	600/2,400	30/1,080	ND	-	Acceptable
Xylenes (total)	1,000/4,000	50/1,800	ND	-	Acceptable
PAHs					
Benzo(a)pyrene	0.8/3.2	0.04/10	ND	-	Acceptable
PAH total	200/800	NA/200	ND	-	Acceptable

Notes to table

Note that where the concentration of PCBs (Total) or Scheduled Chemicals (Total) exceed 2 mg/kg, the waste must be managed in accordance with the NSW EPA's relevant chemical control order (Polychlorinated Biphenyl (PCB) Chemical Control Order 1997 or Scheduled Chemical Wastes Chemical Control Order 2004. Note that there are additional handling requirements where the concentration meets of exceeds 50 mg/kg of either PCBs (Total) or Scheduled Chemicals (Total).

ND – Not detected / below Practical Quantitation Limit (PQL)

NA – Not Applicable

[1] Scheduled Chemicals per Table 1 NSW EPA WCG 2014.

Table 5.2.4 – Summary of analytical results and comparison with NSW EPA 2014 criteria of **Stockpile 4**

	Waste Classification Assessment Criteria		Results		Conclusion
Analytes	**Maximum Values of Total Concentration Assigned for General Solid Waste CT1/CT2, mg/kg**	**Maximum Values of Total Concentration Assigned for General Solid Waste TCLP1 (mg/L)/ SCC1 (mg/kg)**	**Maximum Concentration Detected (mg/kg)**	**Maximum TCLP Concentration Detected (mg/ L)**	**Acceptable as General Solid Waste (GSW)**
Metals					
Arsenic	100/400	5/500	37	-	Acceptable
Cadmium	20/80	1/100	1.7	-	Acceptable
Chromium	100/400	5/1,900	99	-	Acceptable
Copper	NA	NA	320	-	Acceptable
Lead	100/400	5/1,500	**370**	<0.01	Acceptable
Mercury	4/16	0.2/50	0.1	-	Acceptable
Nickel	40/160	2/1,050	28	-	Acceptable
Zinc	NA	NA	1800	-	Acceptable
TRHs					
TRH Fraction $C_6 – C_{10}$	650/2,600	NA/650	ND	-	Acceptable
TRH Fraction C_{10}- C_{36}	10,000/40,000	NA/10,000	150	-	Acceptable
OCPs					
DDT + DDD + DDE	50/50[1]	NA/50[1]	ND	-	Acceptable
Chlordane	50/50[1]	NA/50[1]	0.8	-	Acceptable
Aldrin + Dieldrin	50/50[1]	NA/50[1]	0.08	-	Acceptable
Endosulfan	60/240	3/108	ND	-	Acceptable
Scheduled Chemicals Total[1]	50/50	NA/50	ND	-	Acceptable
PCBs					
Total PCBs	<50/< 50	NA/< 50	ND	-	Acceptable
BTEX					
Benzene	10/40	0.5/18	ND	-	Acceptable
Toluene	288/1,152	14.4/518	ND	-	Acceptable
Ethyl-benzene	600/2,400	30/1,080	ND	-	Acceptable
Xylenes (total)	1,000/4,000	50/1,800	ND	-	Acceptable
PAHs					
Benzo(a)pyrene	0.8/3.2	0.04/10	ND	-	Acceptable
PAH total	200/800	NA/200	ND	-	Acceptable

Notes to table

Note that where the concentration of PCBs (Total) or Scheduled Chemicals (Total) exceed 2 mg/kg, the waste must be managed in accordance with the NSW EPA's relevant chemical control order (Polychlorinated Biphenyl (PCB) Chemical Control Order 1997 or Scheduled Chemical Wastes Chemical Control Order 2004. Note that there are additional handling requirements where the concentration meets of exceeds 50 mg/kg of either PCBs (Total) or Scheduled Chemicals (Total).

ND – Not detected / below Practical Quantitation Limit (PQL)

NA – Not Applicable

[1] Scheduled Chemicals per Table 1 NSW EPA WCG 2014.

Table 5.2.5 – Summary of analytical results and comparison with NSW EPA 2014 criteria of **Stockpile 5**

	Waste Classification Assessment Criteria		Results		Conclusion
Analytes	**Maximum Values of Total Concentration Assigned for General Solid Waste CT1/CT2, mg/kg**	**Maximum Values of Total Concentration Assigned for General Solid Waste TCLP1 (mg/L)/ SCC1 (mg/kg)**	**Maximum Concentration Detected (mg/kg)**	**Maximum TCLP Concentration Detected (mg/ L)**	**Acceptable as General Solid Waste (GSW)**
Metals					
Arsenic	100/400	5/500	44	-	Acceptable
Cadmium	20/80	1/100	2.3	-	Acceptable
Chromium	100/400	5/1,900	34	-	Acceptable
Copper	NA	NA	150	-	Acceptable
Lead	100/400	5/1,500	83	-	Acceptable
Mercury	4/16	0.2/50	ND	-	Acceptable
Nickel	40/160	2/1,050	22	-	Acceptable
Zinc	NA	NA	1100	-	Acceptable
TRHs					
TRH Fraction $C_6 – C_{10}$	650/2,600	NA/650	ND	-	Acceptable
TRH Fraction C_{10}- C_{36}	10,000/40,000	NA/10,000	ND	-	Acceptable
OCPs					
DDT + DDD + DDE	50/50[1]	NA/50[1]	ND	-	Acceptable
Chlordane	50/50[1]	NA/50[1]	ND	-	Acceptable
Aldrin + Dieldrin	50/50[1]	NA/50[1]	ND	-	Acceptable
Endosulfan	60/240	3/108	ND	-	Acceptable
Scheduled Chemicals Total[1]	50/50	NA/50	ND	-	Acceptable
PCBs					
Total PCBs	<50/< 50	NA/< 50	ND	-	Acceptable
BTEX					
Benzene	10/40	0.5/18	ND	-	Acceptable
Toluene	288/1,152	14.4/518	ND	-	Acceptable
Ethyl-benzene	600/2,400	30/1,080	ND	-	Acceptable
Xylenes (total)	1,000/4,000	50/1,800	ND	-	Acceptable
PAHs					
Benzo(a)pyrene	0.8/3.2	0.04/10	ND	-	Acceptable
PAH total	200/800	NA/200	ND	-	Acceptable

Notes to table

Note that where the concentration of PCBs (Total) or Scheduled Chemicals (Total) exceed 2 mg/kg, the waste must be managed in accordance with the NSW EPA's relevant chemical control order (Polychlorinated Biphenyl (PCB) Chemical Control Order 1997 or Scheduled Chemical Wastes Chemical Control Order 2004. Note that there are additional handling requirements where the concentration meets of exceeds 50 mg/kg of either PCBs (Total) or Scheduled Chemicals (Total).

ND – Not detected / below Practical Quantitation Limit (PQL)

NA – Not Applicable

[1] Scheduled Chemicals per Table 1 NSW EPA WCG 2014.

Table 5.2.6 – Summary of analytical results and comparison with NSW EPA 2014 criteria of **Stockpile 6**

	Waste Classification Assessment Criteria		Results		Conclusion
Analytes	**Maximum Values of Total Concentration Assigned for General Solid Waste CT1/CT2, mg/kg**	**Maximum Values of Total Concentration Assigned for General Solid Waste TCLP1 (mg/L)/ SCC1 (mg/kg)**	**Maximum Concentration Detected (mg/kg)**	**Maximum TCLP Concentration Detected (mg/ L)**	**Acceptable as General Solid Waste (GSW)**
Metals					
Arsenic	100/400	5/500	39	-	Acceptable
Cadmium	20/80	1/100	ND	-	Acceptable
Chromium	100/400	5/1,900	29	-	Acceptable
Copper	NA	NA	94	-	Acceptable
Lead	100/400	5/1,500	100	-	Acceptable
Mercury	4/16	0.2/50	ND	-	Acceptable
Nickel	40/160	2/1,050	11	-	Acceptable
Zinc	NA	NA	270	-	Acceptable
TRHs					
TRH Fraction $C_6 – C_{10}$	650/2,600	NA/650	ND	-	Acceptable
TRH Fraction C_{10}- C_{36}	10,000/40,000	NA/10,000	260	-	Acceptable
OCPs					
DDT + DDD + DDE	50/50[1]	NA/50[1]	ND	-	Acceptable
Chlordane	50/50[1]	NA/50[1]	ND	-	Acceptable
Aldrin + Dieldrin	50/50[1]	NA/50[1]	ND	-	Acceptable
Endosulfan	60/240	3/108	ND	-	Acceptable
Scheduled Chemicals Total[1]	50/50	NA/50	ND	-	Acceptable
PCBs					
Total PCBs	<50/< 50	NA/< 50	ND	-	Acceptable
BTEX					
Benzene	10/40	0.5/18	ND	-	Acceptable
Toluene	288/1,152	14.4/518	ND	-	Acceptable
Ethyl-benzene	600/2,400	30/1,080	ND	-	Acceptable
Xylenes (total)	1,000/4,000	50/1,800	ND	-	Acceptable
PAHs					
Benzo(a)pyrene	0.8/3.2	0.04/10	0.6	-	Acceptable
PAH total	200/800	NA/200	8	-	Acceptable

Notes to table

Note that where the concentration of PCBs (Total) or Scheduled Chemicals (Total) exceed 2 mg/kg, the waste must be managed in accordance with the NSW EPA's relevant chemical control order (Polychlorinated Biphenyl (PCB) Chemical Control Order 1997 or Scheduled Chemical Wastes Chemical Control Order 2004. Note that there are additional handling requirements where the concentration meets of exceeds 50 mg/kg of either PCBs (Total) or Scheduled Chemicals (Total).

ND – Not detected / below Practical Quantitation Limit (PQL)

NA – Not Applicable

[1] Scheduled Chemicals per Table 1 NSW EPA WCG 2014.

6. Conclusion

Based on the data and evidence collected during the course of this investigation, it is the opinion of SE that soil materials assessed meet the criteria for classification as:

- **Stockpile 1:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)****;*
- **Stockpile 2:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)****;*
- **Stockpile 3:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)****.*
- **Stockpile 4***: Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)****;***
- **Stockpile 5***: Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)****; and***
- **Stockpile 6***: Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)****;***

Removal operations must be carried out by an experienced Class A or Class B Licensed Asbestos Removal Contractor, as per the SafeWork NSW Cope of Practice: *How to Safely Remove Asbestos* (2022).

6.1. Waste Classification

Waste Description:	Soil materials across all stockpiles were observed to generally consist of Silty CLAY, low plasticity, medium brown, dry. Foreign materials including asbestos containing materials (ACM), fabric, scrap metal, brick, tile, PVC, plastics and terracotta were noted. No hydrocarbon odours, staining or sulfidic ores were observed (refer to **Site Photographs, Attachment 2**).
Approximate Dimensions:	**Stockpile 1** ≈ 10 m x 9 m x 1 m **Stockpile 2** ≈ 10 m x 5 m 1 m **Stockpile 3** ≈ 20 m x 10 m x 1 m **Stockpile 4** ≈ 20 m x 10 m x 1 m **Stockpile 5** ≈ 20 m x 10 m x 1 m **Stockpile 6** ≈ 20 m x 10 m x 1 m
Approximate Volume and Mass:	**Stockpile 1** ≈ 100 m^3 / 180 tonnes **Stockpile 2** ≈ 50 m^3 / 90 tonnes **Stockpile 3** ≈ 200 m^3 / 360 tonnes **Stockpile 4** ≈ 200 m^3 / 360 tonnes **Stockpile 5** ≈ 200 m^3 / 360 tonnes **Stockpile 6** ≈ 200 m^3 / 360 tonnes Assuming a bulk density of 1.8 tonnes per m^3
Waste Classification:	**Stockpile 1:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)*** **Stockpile 2:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)*** **Stockpile 3:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)*** **Stockpile 4:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)*** **Stockpile 5:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)*** **Stockpile 6:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)***

Any material being excavated and transported off-site for disposal must be consistent the above waste description and be sourced exclusively from the area outline in the attached figures. Should any unexpected finds be identified during works that are not consistent with this classification, please contact SE immediately on 1300 884 164.

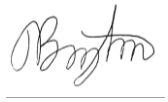
7. Statement of Limitations

This report has been prepared for the exclusive use of the client. SE has used a degree of care and skill ordinarily exercised in similar investigations by reputable members of the environmental industry in Australia. No other warranty, expressed or implied, is made or intended. No one section or part of a section, of this report should be taken as giving an overall idea of this report. Each section must be read in conjunction with the whole of this report, including its appendices and attachments.

Any other party should satisfy themselves that the scope of work conducted and report herein meets their specific needs. SE cannot be held liable for third party reliance on this document, as SE is not aware of the specific needs of the third party.

The subsurface environment can present substantial uncertainty due to its complex heterogeneity. The conclusions presented in this report are based on limited investigation of conditions at specific sampling locations chosen to be as representative as possible under the given circumstances. However, it is possible that this investigation may not have encountered all areas of contamination at the site due to the limited sampling and testing program undertaken.

SE's professional opinions are based upon its professional judgement, experience, training and results from analytical data. In some cases, further testing and analysis may be required, thus producing different results and / or opinions. SE has limited its investigation to the scope agreed upon with its client.

Author Signature		**Reviewer Signature**	
Name	Tristan Bonython	**Name**	Steven Wallace
Title	Environmental Scientist	**Title**	Managing Consultant

Attachments:

1) Figures
2) Site Photographs
3) Laboratory Reports and Chain of Custody Documentation

ATTACHMENT 1

FIGURES

LEGEND

- Stockpiling Area
- Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible) Stockpiles
- Sampling Locations

Sydney Environmental Group	Scale:	10 m	Sampling Plan	
	Client Name:	CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV)	N	Figure Number: 1
	Project Name:	Waste Characterisation Assessment		Figure Date: 6 June 2024
	Project Location:	CPBUIJV SCAW PROJECT Gate 2, Patons Lane Compound Zone 2, Orchard Hills NSW		Report Number: 1870-WCA-07-060624.v1f

ATTACHMENT 2

SITE PHOTOGRAPHS

Site Photograph 1: View of Stockpile 1, as observed 28 May 2024, facing east.

Site Photograph 2: View of Stockpile 02, as observed 28 May 2024, facing east.

Site Photograph 3: View of Stockpile 03, as observed 28 May 2024, facing east.

Site Photograph 4: View of Stockpile 04, as observed 28 May 2024, facing east.

Site Photograph 5: View of Stockpile 05, as observed 28 May 2024, facing east.

Site Photograph 6: View of Stockpile 06, as observed 28 May 2024, facing east.

Site Photograph 4: Representative asbestos fibre cement fragment encountered within the stockpiled material, as observed 28 May 2024.

ATTACHMENT 3

LABORATORY ANALYTICAL REPORTS AND CHAIN OF CUSTODY

RE: Eurofins Test Results - Report 1101834 : Site SCAW PATONS LANE-ZONE 2 SP SCA (1870)

Thomasine Hulme <Thomasine@sydneyenvironmental.com.au>

Thu 2024-06-06 5:11 PM

To:Asim Khan <Asim.Khan@eurofinsanz.com>;Nileshni Goundar <NileshniGoundar@eurofins.com>
Cc:Tristan Bonython <Tristan@sydneyenvironmental.com.au>;#AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>;Andrew O'Neill <Andrew@sydneyenvironmental.com.au>;Isabelle Figatowski <Isabelle@sydneyenvironmental.com.au>

Hi Asim,

Could we please get urgent TCLP Analysis for Lead on the following two samples please:

- Z2-SP04-02; and
- Z2-SP03-04

Any issues please let me know – Thank you! 😊

Kind regards,

Thomasine Hulme Environmental Consultant

B. Environmental Management (Biology)

Sydney Environmental Group

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Sydney Environmental Group acknowledges the Traditional Owners of the land upon which we live and work and pay our respects to their Elders past, present and emerging.

Sydney Environmental Group's management systems are certified to ISO9001:2015 (Quality), ISO45001:2018 (OH&S) and ISO14001:2015 (Environment).

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From: AsimKhan@eurofins.com <AsimKhan@eurofins.com>
Sent: Tuesday, June 4, 2024 10:01 AM
To: Andrew O'Neill <Andrew@sydneyenvironmental.com.au>

Cc: Enviro <enviro@sydneyenvironmental.com.au>; Tristan Bonython <Tristan@sydneyenvironmental.com.au>
Subject: Eurofins Test Results - Report 1101834 : Site SCAW PATONS LANE-ZONE 2 SP SCA (1870)

Please find attached results for your project in the subject header.

Kind regards,

Asim Khan
Analytical Services Manager
Please note my hours are from 9:30 am to 5:30 pm

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Waste Classification Assessment Report	
Client:	CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV)
Report No:	1870-WCA-06-060624.v1f
Site Address:	CPBUIJV SCAW Project Gate 2, Patons Lane Compound Zone 1 Stockpiling Area, Orchard Hills NSW
Subject Area Inspected:	CPBUIJV SCAW Project Gate 2, Patons Lane Compound Zone 1 Stockpiling Area, Orchard Hills NSW, temporary stockpiling area, stockpiled soil materials 'SP01', 'SP02' and 'SP03' (refer to **Figure 1, Attachment 1**).
Date of Field Work:	24 May 2024
Date of Report:	6 June 2024
***In-situ* or Stockpile**	*Stockpiled*
Approximate Dimensions:	**Stockpile 1** ≈ 20 m x 6 m x 1.5 m **Stockpile 2** ≈ 23 m x 5 m x 1 m **Stockpile 3** ≈ 20 m x 4.5 m x 1 m
Approximate Volume and Mass:	**Stockpile 1** ≈ 180 m^3 / 324 tonnes **Stockpile 2** ≈ 115 m^3 / 210 tonnes **Stockpile 3** ≈ 90 m^3 / 160 tonnes Assuming a bulk density of 1.8 tonnes per m^3
Sample Size:	**Stockpile 1** Eight (8) soil samples and one (1) fibre cement sample **Stockpile 2** Five (5) soil samples **Stockpile 3** Four (4) soil samples
Waste Description:	Soil materials across all stockpiles were observed to generally consist of Silty CLAY, low plasticity, medium brown, dry. Foreign materials including asbestos containing materials (ACM), fabric, scrap metal, brick, tile, PVC, plastics and terracotta were noted. No hydrocarbon odours, staining or sulfidic ores were observed (refer to **Site Photographs, Attachment 2**).
Waste Classification	**Stockpile 1:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)*** **Stockpile 2:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)*** **Stockpile 3:** ***Special Waste (Non-Friable Asbestos) as Restricted Solid Waste (Non-Putrescible)***

1. Introduction

Sydney Environmental Group Pty Ltd (SE) was engaged by CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIVJ) (the client) to determine the waste classification of stockpiled soil materials located within CPBUIJV SCAW Patons Lane Compound Zone 1, Orchard Hills NSW (herein referred to as 'the site', refer to **Figure 1, Attachment 1**).

An appropriately experienced environmental consultant from SE visited the site on 24 May 2024 and collected a total of seventeen (17) soil samples and one (1) fibre cement sample from three (3) separate stockpiles of soil materials (refer to **Figure 1, Attachment 1** and **Site Photographs, Attachment 2)** for the purpose of off-site disposal to a licensed waste receiving facility in accordance with the NSW *Protection of the Environment Operations Act* 1997 (NSW POEO 1997) and NSW EPA *Waste Classification Guidelines* 2014 (NSW EPA WCG 2014).

Refer to laboratory results summary **Table 5.2.1, Table 5.2.2** and **Table 5.2.3** with laboratory reports provided in **Attachment 3**.

The scope of works for SE was;

- Visual inspection of the stockpiled soil materials;
- Collection of eight (8) soil samples and one (1) fibre cement sample from **Stockpile 1**;
- Collection of five (5) soil samples from **Stockpile 2**;
- Collection of four (4) soil samples from **Stockpile 3**;
- Analysis for contaminants of potential concern at a National Association of Testing Authorities (NATA) accredited laboratory;
- Evaluation of analyte concentrations in accordance with assessment criteria outlined in NSW EPA WCG 2014 for off-site disposal; and
- Preparation of a Waste Classification Report detailing the observations of the site inspection, results of analysis undertaken and classification of the materials.

2. Desktop / Background Study

2.1. Geological Survey

A review of the soil landscapes layer accessed on the Environment NSW 'eSpade V2.2' web application (environment.nsw.gov.au/eSpade2WebApp, accessed 24 May 2024), indicated that the site is underlain by Wianamatta Group Ashfield Shale consisting of laminite and dark grey siltstone, Bringelly Shale which consists of shale with occasional calcareous claystone, laminite and infrequent coal, and Minchinbury Sandstone consisting of fine to medium-grained quartz lithic sandstone.

2.2. Acid Sulfate Soils Risk

A review of the acid sulfate soil risk mapping layer accessed on the Environment NSW 'eSpade V2.2' web application (environment.nsw.gov.au/eSpade2WebApp, accessed 24 May 2024 indicated that the site is located in an area classed as ***No Known Occurrence*** for which acid sulfate soils could be encountered in these environments. As land management activities will not affected by acid sulfate soil materials, further assessment is not deemed warranted.

2.3. NSW EPA Contaminated Land Register and List of NSW Contaminated Site Notified to the EPA

A review of the publicly available online NSW EPA 'Record of Notices' and 'List of NSW Contaminated Site Notified to the EPA' was completed on 24 May 2024. The review indicated that the site was not the subject of any licences, applications, notices, audits or pollution studies or reduction programs under Section 308 of the NSW Protection of the Environment Operations Act 1997 or any notifications under Section 58 of the NSW Contaminated Land Management Act 1997 nor did the review identify the site or any adjacent sites as being significantly contaminated.

2.4. Surrounding Land Use

A review of online mapping and observations made during the site walkover indicated the following land use activities adjacent to the site:

North: M12 Motorway development and Bingo Recycling Facility;
South: Rural Residential;
East: Rural Residential; and
West: Rural Residential.

3. Sampling Plan, Methodology and Scope of Analysis

3.1. Soil Sampling & Transportation

Upon inspection and logging of the material, seventeen (17) soil samples and one (1) fibre cement sample were collected from the stockpiled soil materials for waste classification. The samples were recovered by an appropriately experienced environmental consultant from SE using disposable nitrile gloves and placed in sterile glass jars with Teflon lined lids or appropriate plastic sample bags provided by the laboratory. The samples were then transferred within an ice cooled esky (maintained at ≈ 4^{o}C) directly to Eurofins Scientific | Environment Testing, a National Australian Testing Authority (NATA) accredited laboratory for analysis.

3.2. Laboratory Analysis

The samples were analysed for the following parameters:

- Asbestos Bulk ID (AS4964:2004);
- Benzene, Toluene, Ethylbenzene, total Xylene (BTEX);
- Heavy Metals (Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc);
- Total Petroleum Hydrocarbons (TRHs);
- Polycyclic Aromatic Hydrocarbons (PAHs);
- Organochlorine Pesticides (OCPs); and
- Polychlorinated Biphenyls (PCBs).

Refer to laboratory analytical results summary in **Table 5.2.1, Table 5.2.2** and **Table 5.2.3.**

4. Waste Classification Procedure

The 6-step classification procedure in NSW EPA (2014) was followed, with the results presented in **Table 4.1.1** below.

Table 4.1.1 NSW EPA 2014 6 Step Waste Classification Procedure

Step		Material Observation
1	Is the waste special waste?	Yes. Asbestos was detected in a fibre cement fragment ('SP-ASB-FC') and in sample 'SP01-01' collected from the stockpiled soil materials. The fragments were observed to be greater than 7 mm and could not be crushed or pulverised by hand. As such, the asbestos is considered to be ***non-friable***. Asbestos containing materials were observed in all stockpiled materials assessed.
2	Is the waste liquid waste?	No
3	Is the waste pre-classified?	No
4	Does the waste possess hazardous characteristics	No
5	Waste classification using chemical assessment.	Yes. Refer to **Table 5.2.1, Table 5.2.2** and **Table 5.2.3** for the summary analytical results from the samples collected from the in-situ soil materials.
6	Is the waste putrescible or non-putrescible?	Non-putrescible

5. Summary of Results

5.1. Determination of Waste Classification Using Chemical Assessment

The first test which must be used to chemically assess waste is the Specific Contaminant Concentration (SCC) test. If a waste's SCC test value exceeds the Contaminant Threshold (CT1) set for General Solid Waste (GSW), further assessment using the Toxicity Characterisation Leaching Procedure (TCLP) test may be used.

To establish the waste's classification using both SCC and TCLP tests, the test values for each chemical contaminant must be compared with the threshold values provided in **Table 5.2.1, Table 5.2.2** and **Table 5.2.3**. A summary of the relationship between SCC and TCLP values and the waste's classification is provided below in **Table 5.1.1**.

Table 5.1.1 – Waste Classification by SCC and TCLP Tests

Waste Classification	SCC Value	TCLP Value
General Solid Waste (GSW)	≤ SCC1	≤ TCLP1
Restricted Solid Waste (RSW)	≤ SCC2	≤ TCLP2
Hazardous Waste	> SCC2	> TCLP2

5.2. Comparison of Analytical Results with NSW EPA 2014

A summary of analytical results considered in the determination the waste classification of the soil materials under investigation is provided below in **Table 5.2.1**.

Table 5.2.1 – Summary of analytical results and comparison with NSW EPA 2014 criteria of Stockpile 01

	Waste Classification Assessment Criteria		Results		Conclusion
Analytes	**Maximum Values of Total Concentration Assigned for General Solid Waste CT1/CT2, mg/kg**	**Maximum Values of Total Concentration Assigned for General Solid Waste TCLP1 (mg/L)/ SCC1 (mg/kg)**	**Maximum Concentration Detected (mg/kg)**	**Maximum TCLP Concentration Detected (mg/ L)**	**Acceptable as General Solid Waste (GSW)**
Metals					
Arsenic	100/400	5/500	32	-	Acceptable
Cadmium	20/80	1/100	9.9	-	Acceptable
Chromium	100/400	5/1,900	**130**	< 0.05	Acceptable
Copper	NA	NA	1200	-	Acceptable
Lead	100/400	5/1,500	**840**	0.1	Acceptable
Mercury	4/16	0.2/50	0.4	-	Acceptable
Nickel	40/160	2/1,050	**41**	0.02	Acceptable
Zinc	NA	NA	2400	-	Acceptable
TRHs					
TRH Fraction $C_6 – C_{10}$	650/2,600	NA/650	ND	-	Acceptable
TRH Fraction $C_{10}- C_{36}$	10,000/40,000	NA/10,000	200	-	Acceptable
OCPs					
DDT + DDD + DDE	50/50[1]	NA/50[1]	ND	-	Acceptable
Chlordane	50/50[1]	NA/50[1]	ND	-	Acceptable
Aldrin + Dieldrin	50/50[1]	NA/50[1]	ND	-	Acceptable
Endosulfan	60/240	3/108	ND	-	Acceptable
Scheduled Chemicals Total[1]	50/50	NA/50	ND	-	Acceptable
PCBs					
Total PCBs	<50/< 50	NA/< 50	ND	-	Acceptable
BTEX					
Benzene	10/40	0.5/18	ND	-	Acceptable
Toluene	288/1,152	14.4/518	ND	-	Acceptable
Ethyl-benzene	600/2,400	30/1,080	ND	-	Acceptable
Xylenes (total)	1,000/4,000	50/1,800	ND	-	Acceptable
PAHs					
Benzo(a)pyrene	0.8/3.2	0.04/10	ND	-	Acceptable
PAH total	200/800	NA/200	ND	-	Acceptable

Notes to table

Note that where the concentration of PCBs (Total) or Scheduled Chemicals (Total) exceed 2 mg/kg, the waste must be managed in accordance with the NSW EPA's relevant chemical control order (Polychlorinated Biphenyl (PCB) Chemical Control Order 1997 or Scheduled Chemical Wastes Chemical Control Order 2004. Note that there are additional handling requirements where the concentration meets of exceeds 50 mg/kg of either PCBs (Total) or Scheduled Chemicals (Total).

ND – Not detected / below Practical Quantitation Limit (PQL)

NA – Not Applicable

[1] Scheduled Chemicals per Table 1 NSW EPA WCG 2014.

Table 5.2.2 – Summary of analytical results and comparison with NSW EPA 2014 criteria of Stockpile 02

	Waste Classification Assessment Criteria		Results		Conclusion
Analytes	**Maximum Values of Total Concentration Assigned for General Solid Waste CT1/CT2, mg/kg**	**Maximum Values of Total Concentration Assigned for General Solid Waste TCLP1 (mg/L)/ SCC1 (mg/kg)**	**Maximum Concentration Detected (mg/kg)**	**Maximum TCLP Concentration Detected (mg/ L)**	**Acceptable as General Solid Waste (GSW)**
Metals					
Arsenic	100/400	5/500	22	-	Acceptable
Cadmium	20/80	1/100	4.1	-	Acceptable
Chromium	100/400	5/1,900	53	-	Acceptable
Copper	NA	NA	1200	-	Acceptable
Lead	100/400	5/1,500	**1200**	0.47	Acceptable
Mercury	4/16	0.2/50	0.2	-	Acceptable
Nickel	40/160	2/1,050	45	-	Acceptable
Zinc	NA	NA	2900	-	Acceptable
TRHs					
TRH Fraction $C_6 – C_{10}$	650/2,600	NA/650	ND	-	Acceptable
TRH Fraction C_{10}- C_{36}	10,000/40,000	NA/10,000	166	-	Acceptable
OCPs					
DDT + DDD + DDE	50/50[1]	NA/50[1]	ND	-	Acceptable
Chlordane	50/50[1]	NA/50[1]	ND	-	Acceptable
Aldrin + Dieldrin	50/50[1]	NA/50[1]	ND	-	Acceptable
Endosulfan	60/240	3/108	ND	-	Acceptable
Scheduled Chemicals Total[1]	50/50	NA/50	ND	-	Acceptable
PCBs					
Total PCBs	<50/< 50	NA/< 50	ND	-	Acceptable
BTEX					
Benzene	10/40	0.5/18	ND	-	Acceptable
Toluene	288/1,152	14.4/518	ND	-	Acceptable
Ethyl-benzene	600/2,400	30/1,080	ND	-	Acceptable
Xylenes (total)	1,000/4,000	50/1,800	ND	-	Acceptable
PAHs					
Benzo(a)pyrene	0.8/3.2	0.04/10	ND	-	Acceptable
PAH total	200/800	NA/200	ND	-	Acceptable

Notes to table

Note that where the concentration of PCBs (Total) or Scheduled Chemicals (Total) exceed 2 mg/kg, the waste must be managed in accordance with the NSW EPA's relevant chemical control order (Polychlorinated Biphenyl (PCB) Chemical Control Order 1997 or Scheduled Chemical Wastes Chemical Control Order 2004. Note that there are additional handling requirements where the concentration meets of exceeds 50 mg/kg of either PCBs (Total) or Scheduled Chemicals (Total).

ND – Not detected / below Practical Quantitation Limit (PQL)

NA – Not Applicable

[1] Scheduled Chemicals per Table 1 NSW EPA WCG 2014.

Table 5.2.3 – Summary of analytical results and comparison with NSW EPA 2014 criteria of Stockpile 03

	Waste Classification Assessment Criteria		Results		Conclusion
Analytes	**Maximum Values of Total Concentration Assigned for General Solid Waste CT1/CT2, mg/kg**	**Maximum Values of Total Concentration Assigned for General Solid Waste TCLP1 (mg/L)/ SCC1 (mg/kg)**	**Maximum Concentration Detected (mg/kg)**	**Maximum TCLP Concentration Detected (mg/ L)**	**Acceptable as General Solid Waste (GSW)**
Metals					
Arsenic	100/400	5/500	44	-	Acceptable
Cadmium	20/80	1/100	20	-	Acceptable
Chromium	100/400	5/1,900	91	-	Acceptable
Copper	NA	NA	1200	-	Acceptable
Lead	100/400	5/1,500	**2100**	0.13	**Unacceptable**
Mercury	4/16	0.2/50	0.3	-	Acceptable
Nickel	40/160	2/1,050	**260**	0.09	Acceptable
Zinc	NA	NA	7800	-	Acceptable
TRHs					
TRH Fraction $C_6 – C_{10}$	650/2,600	NA/650	ND	-	Acceptable
TRH Fraction C_{10}- C_{36}	10,000/40,000	NA/10,000	300	-	Acceptable
OCPs					
DDT + DDD + DDE	50/50[1]	NA/50[1]	ND	-	Acceptable
Chlordane	50/50[1]	NA/50[1]	ND	-	Acceptable
Aldrin + Dieldrin	50/50[1]	NA/50[1]	ND	-	Acceptable
Endosulfan	60/240	3/108	ND	-	Acceptable
Scheduled Chemicals Total[1]	50/50	NA/50	ND	-	Acceptable
PCBs					
Total PCBs	<50/< 50	NA/< 50	ND	-	Acceptable
BTEX					
Benzene	10/40	0.5/18	ND	-	Acceptable
Toluene	288/1,152	14.4/518	ND	-	Acceptable
Ethyl-benzene	600/2,400	30/1,080	ND	-	Acceptable
Xylenes (total)	1,000/4,000	50/1,800	ND	-	Acceptable
PAHs					
Benzo(a)pyrene	0.8/3.2	0.04/10	ND	-	Acceptable
PAH total	200/800	NA/200	ND	-	Acceptable

Notes to table

Note that where the concentration of PCBs (Total) or Scheduled Chemicals (Total) exceed 2 mg/kg, the waste must be managed in accordance with the NSW EPA's relevant chemical control order (Polychlorinated Biphenyl (PCB) Chemical Control Order 1997 or Scheduled Chemical Wastes Chemical Control Order 2004. Note that there are additional handling requirements where the concentration meets of exceeds 50 mg/kg of either PCBs (Total) or Scheduled Chemicals (Total).

ND – Not detected / below Practical Quantitation Limit (PQL)

NA – Not Applicable

[1] Scheduled Chemicals per Table 1 NSW EPA WCG 2014.

6. Conclusion

Based on the data and evidence collected during the course of this investigation, it is the opinion of SE that soil materials assessed meet the criteria for classification as:

- **Stockpile 01:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)****;*
- **Stockpile 02:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)****; and*
- **Stockpile 03:** ***Special Waste (Non-Friable Asbestos) as Restricted Solid Waste (Non-Putrescible)****.*

Removal operations must be carried out by an experienced Class A or Class B Licensed Asbestos Removal Contractor, as per the SafeWork NSW Cope of Practice: *How to Safely Remove Asbestos* (2022).

6.1. Waste Classification

Waste Description:	Soil materials across all stockpiles were observed to generally consist of Silty CLAY, low plasticity, medium brown, dry. Foreign materials including asbestos containing materials (ACM), fabric, scrap metal, brick, tile, PVC, plastics and terracotta were noted. No hydrocarbon odours, staining or sulfidic ores were observed (refer to **Site Photographs, Attachment 2**).
Approximate Dimensions:	**Stockpile 1** ≈ 20 m x 6 m x 1.5 m **Stockpile 2** ≈ 23 m x 5 m x 1 m **Stockpile 3** ≈ 20 m x 4.5 m x 1 m
Approximate Volume and Mass:	**Stockpile 1** ≈ 180 m^3 / 324 tonnes **Stockpile 2** ≈ 115 m^3 / 210 tonnes **Stockpile 3** ≈ 90 m^3 / 160 tonnes Assuming a bulk density of 1.8 tonnes per m^3
Waste Classification:	**Stockpile 1:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)*** **Stockpile 2:** ***Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible)*** **Stockpile 3:** ***Special Waste (Non-Friable Asbestos) as Restricted Solid Waste (Non-Putrescible)***

Any material being excavated and transported off-site for disposal must be consistent the above waste description and be sourced exclusively from the area outline in the attached figures. Should any unexpected finds be identified during works that are not consistent with this classification, please contact SE immediately on 1300 884 164.

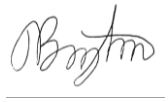
7. Statement of Limitations

This report has been prepared for the exclusive use of the client. SE has used a degree of care and skill ordinarily exercised in similar investigations by reputable members of the environmental industry in Australia. No other warranty, expressed or implied, is made or intended. No one section or part of a section, of this report should be taken as giving an overall idea of this report. Each section must be read in conjunction with the whole of this report, including its appendices and attachments.

Any other party should satisfy themselves that the scope of work conducted and report herein meets their specific needs. SE cannot be held liable for third party reliance on this document, as SE is not aware of the specific needs of the third party.

The subsurface environment can present substantial uncertainty due to its complex heterogeneity. The conclusions presented in this report are based on limited investigation of conditions at specific sampling locations chosen to be as representative as possible under the given circumstances. However, it is possible that this investigation may not have encountered all areas of contamination at the site due to the limited sampling and testing program undertaken.

SE's professional opinions are based upon its professional judgement, experience, training and results from analytical data. In some cases, further testing and analysis may be required, thus producing different results and / or opinions. SE has limited its investigation to the scope agreed upon with its client.

Author Signature		**Reviewer Signature**	
Name	Tristan Bonython	**Name**	Steven Wallace
Title	Environmental Scientist	**Title**	Managing Consultant

Attachments:

1) Figures
2) Site Photographs
3) Laboratory Reports and Chain of Custody Documentation

ATTACHMENT 1

FIGURES

LEGEND

- Stockpiling Area
- Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible) Stockpiles
- Special Waste (Non-Friable Asbestos) as Restricted Solid Waste (Non-Putrescible)
- Sampling Locations

Source: Nearmap (apps.nearmap.com/maps/)

Sydney Environmental Group

Sampling Plan			
Client Name:	CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV)	**Figure Number:**	1
Project Name:	Waste Classification Assessment	**Figure Date:**	6 June 2024
Project Location:	CPBUIJV SCAW PROJECT Gate 2, Patons Lane Compound Zone 1, Orchard Hills NSW	**Report Number:**	1870-WCA-06-060624.v1f

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ATTACHMENT 2

SITE PHOTOGRAPHS

Site Photograph 1: View of Stockpile 01, as observed 24 May 2024, facing east.

Site Photograph 2: View of Stockpile 02, as observed 24 May 2024, facing east.

Site Photograph 3: View of Stockpile 03, as observed 24 May 2024, facing east.

Site Photograph 4: Representative asbestos fibre cement fragment encountered within the stockpiled material, as observed 24 May 2024.

ATTACHMENT 3

LABORATORY ANALYTICAL REPORTS AND CHAIN OF CUSTODY

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ASBESTOS MATERIALS CLEARANCE INSPECTION REPORT

Report Number	1870-ASBCLR-23-280524.v1f
Client	CPB Contractors and United Infrastructure Joint Venture (CPBUIJV)
Project Location	CPBUIJV SCAW PROJECT GATE 2, Patons Lane Compound Zone 1, Orchard Hills NSW
Inspection Date	24 May 2024
Report Date	28 May 2024
Scope of Works	Visual clearance and soil validation sampling following removal of non-friable asbestos impacted soil material from Zone 1.
Subject Areas	CPBUIJV 'Sydney Metro Western Sydney Airport, Surface and Civil Alignment Works', Gate 2 Patons Lane Compound Zone 1, Orchard Hills NSW, non-friable asbestos impacted soil removal. (refer *to Appendix A – Aerial Photographs* and *Appendix B – Photographs)*.

INTRODUCTION

General

Sydney Environmental Group Pty Ltd (SE) was commissioned by CPB Contractors and United Infrastructure Joint Venture (CPBUIJV) to undertake an Asbestos Materials Clearance Inspection of the subject area located within CPBUIJV 'Sydney Metro Western Sydney Airport, Surface and Civil Alignment Works (SCAW)', Gate 2 Patons Lane Compound Zone 1, Orchard Hills NSW. Site supervision was carried out from 20 May 2024 to 27 May 2024 by Tristan Bonython and Siyuan He, suitably qualified occupational hygienists, under the supervision of Andrew O'Neill, a SafeWork NSW Licensed Asbestos Assessor (LAA) (LAA001413) representing SE. The final site inspection was undertaken on 27 May 2024 by Tristan Bonython, under the supervision of Andrew O'Neill (LAA) (LAA001413).

Legislative Requirements

The survey works and production of this report have been undertaken in accordance with the requirements of:

- *Work Health and Safety Regulation 2017;*
- *Work Health and Safety Act 2011;*
- SafeWork NSW *Code of Practice: How to Manage and Control Asbestos in the Workplace* (2022); and
- SafeWork NSW *Code of Practice: How to Safely Remove Asbestos* (2022).

SCOPE OF WORK

The scope of work involved the following:

- Completion of a Safety, Health, and Environmental Work Method Statement prior to undertaking works;
- Boundary control airborne asbestos monitoring for the duration of the works;
- Visual inspection of the subject area and sampling of residual soil surface soils for laboratory analysis of asbestos by a suitably qualified occupational hygienist, following works;
- Analysis of seventeen (17) soil samples by a NATA Accredited Laboratory for asbestos (0.001%) in soil analysis; and
- Preparation of an Asbestos Materials Clearance report outlining the site data and conclusions.

INSPECTION DETAILS

General

Impacted soil materials from within the subject area (refer to Appendix A – Figures) were wet down prior to removal works. Impacted soil materials were excavated and removed via an excavator and loaded into a truck and dog for off-site disposal at a licensed receiving facility. Upon completion of loading of each truck, and prior to them leaving the subject area, the vehicles were inspected and decontaminated by the removalist on-site. Removal works were undertaken by Spot-On Asbestos Removal Pty Ltd, a SafeWork NSW Class A licensed asbestos removalist (AD204059) on 4, 5 & 6 March 2024.

Following the removal of non-friable asbestos impacted soils from the subject area, the supervising occupational hygienist inspected the footprint and surrounding areas for residual asbestos containing materials. No asbestos containing materials were observed on the residual soil surface within the subject area at the time of the inspection. The residual soil surface was sampled at a rate of 1:25 m2. Soil samples were sent to Eurofins Australia, a NATA accredited laboratory for quantitative asbestos analysis (NEPM WA DOH 0.001%). No suspected ACM was identified. A summary of the results of the assessment can be found in Table 1.

Airborne Asbestos Monitoring

Boundary control airborne asbestos monitoring was undertaken for the duration of the removal works. All air monitoring devices were calibrated and analysed by Eurofins | Environment Testing Pty Ltd, a NATA accredited laboratory. All monitoring results were below the detection limit of the method (< 0.01 fibres / mL) (Refer to ***Appendix C – Laboratory Documentation***).

Laboratory Analysis

Soil samples collected from the subject areas were submitted to a NATA accredited laboratory for quantitative asbestos analysis (refer to ***Appendix C – Laboratory Documentation***). A summary of the results is provided below in **Table 1**.

Table 1 Laboratory Analytical Results

Sample ID	Laboratory ID	Sample Date	Analyte	Matrix	Identification Results
FP-VAL01	24-My0070485	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL02	24-My0070486	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL03	24-My0070487	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL04	24-My0070488	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL05	24-My0070489	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL06	24-My0070490	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL07	24-My0070491	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL08	24-My0070492	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL09	24-My0070493	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL10	24-My0070494	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL11	24-My0070495	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL12	24-My0070496	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL13	24-My0070497	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL14	24-My0070498	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL15	24-My0070499	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL16	24-My0070500	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FP-VAL17	24-My0070501	27 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected

Restrictions on Survey / Areas not accessed

Please note that this inspection is limited to the soil surface of the subject area. Areas adjacent to and below the soil surface of the subject area are considered outside the scope of this report.

Please remain diligent when undertaking any further work within or adjacent to the subject area and contact SE immediately if any further contamination is observed.

CONCLUSION

Based on the information presented in this report, it is the opinion of SE that:

- Visual examination of the subject area indicated no evidence of asbestos containing materials on the residual soil surface following removal works;
- The subject area is considered ***safe*** with regards to the asbestos hazard at the time of the visual inspection;
- The results from boundary control airborne asbestos monitoring indicated that the concentration of airborne fibres was below the detection limit of the method (< 0.01 fibres / mL);
- Laboratory analysis indicated that asbestos was ***not detected*** with the soil samples collected from the subject area following the removal works; and
- Please remain diligent and adhere to the restrictions within the body of this report and the limitations stated below..

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 on information provided by the client. The advice herein relates only to this project and all results, conclusions and recommendations made should be reviewed by a competent and experienced person with experience in environmental investigations, before being used for any other purpose. Sydney Environmental Group Pty Ltd (SE) accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced or amended in any away without prior approval by the client or SE and should not be relied upon by any other party, who should make their own independent enquiries.

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, SE reserves the right to review the report in the context of the additional information.

SE's professional opinions are based upon its professional judgment, experience, training and results from analytical data. In some cases, further testing and analysis may be required, thus producing different results and/or opinions. SE has limited investigation to the scope agreed upon with its client. It should be noted only the subject area outlined in this report was inspected and adjacent areas may contain asbestos.

SE has used a degree of care and skill ordinarily exercised in similar investigations by reputable member of the Environmental Industry within Australia. No other warranty, expressed or implied, is made or intended.

Inspected & Prepared By:

Siyuan He

Siyuan He
Occupational Hygienist

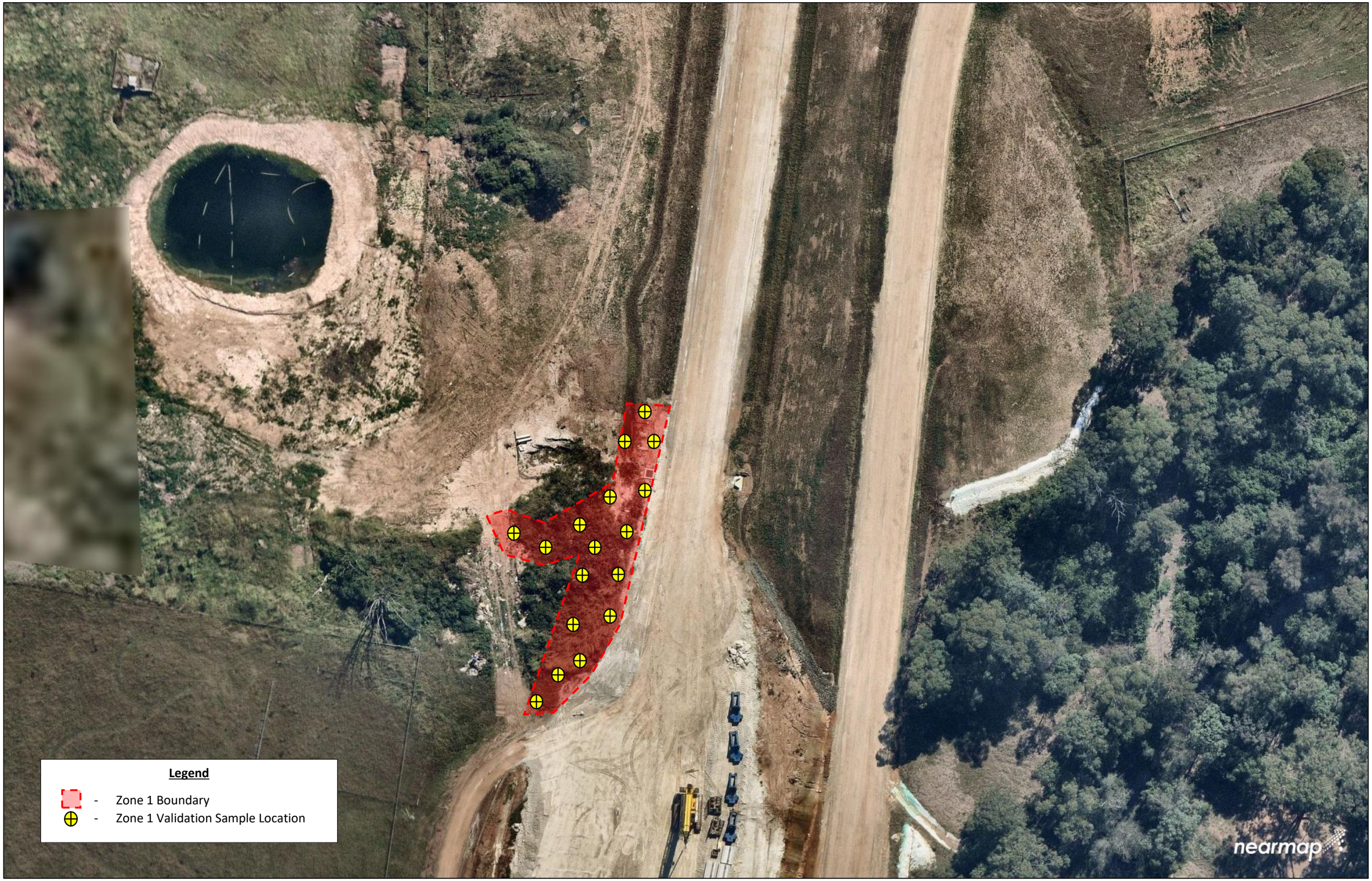
Reviewed by:

A.J. O'Neill

Andrew O'Neill
Occupational Hygienist
NSW LAA LAA001413

APPENDIX A

FIGURES



Sydney Environmental Group

Sampling Plan				
Client Name:	CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV)	N	Figure Number:	1
Project Name:	Asbestos Validation Clearance		Figure Date:	28 May 2024
Project Location:	CPBUIJC SCAW Project, Gate 2, Patons Lane Compound Zone 1, Orchard Hills NSW		Report Number:	1870-ASBCLR-23-280524.v1f

APPENDIX B

PHOTOGRAPHS

Photograph 1: Subject area: Overview of Soil surface, as inspected on 24th May 2024.

Photograph 2: Subject area: Overview of Soil surface, as inspected on 24th May 2024.

Photograph 1: Subject area: Representative detail of Soil surface, as inspected on 24th May 2024.

APPENDIX C

LABORATORY DOCUMENTATION

Sydney Environmental Group

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ASBESTOS MATERIALS CLEARANCE INSPECTION REPORT

Report Number	1870-ASBCLR-24-300524.v1f
Client	CPB Contractors and United Infrastructure Joint Venture (CPBUIJV)
Project Location	CPBUIJV SCAW PROJECT GATE 2, Patons Lane Compound Zone 2, Orchard Hills NSW
Inspection Date	28 May 2024
Report Date	30 May 2024
Scope of Works	Visual clearance and soil validation sampling following removal of non-friable asbestos impacted soil material from Zone 2.
Subject Areas	CPBUIJV 'Sydney Metro Western Sydney Airport, Surface and Civil Alignment Works', Gate 2 Patons Lane Compound Zone 2, Orchard Hills NSW, non-friable asbestos impacted soil removal. (refer *to Appendix A – Aerial Photographs* and *Appendix B – Photographs)*.

INTRODUCTION

General

Sydney Environmental Group Pty Ltd (SE) was commissioned by CPB Contractors and United Infrastructure Joint Venture (CPBUIJV) to undertake an Asbestos Materials Clearance Inspection of the subject area located within CPBUIJV 'Sydney Metro Western Sydney Airport, Surface and Civil Alignment Works (SCAW)', Gate 2 Patons Lane Compound Zone 2, Orchard Hills NSW. Site supervision was carried out from 22 May 2024 to 27 May 2024 by Tristan Bonython and Siyuan He, suitably qualified occupational hygienists, under the supervision of Andrew O'Neill, a SafeWork NSW Licensed Asbestos Assessor (LAA) (LAA001413) representing SE. The final site inspection was undertaken on 28 May 2024 by Tristan Bonython, under the supervision of Andrew O'Neill (LAA) (LAA001413).

Legislative Requirements

The survey works and production of this report have been undertaken in accordance with the requirements of:

- *Work Health and Safety Regulation 2017;*
- *Work Health and Safety Act 2011;*
- SafeWork NSW *Code of Practice: How to Manage and Control Asbestos in the Workplace* (2022); and
- SafeWork NSW *Code of Practice: How to Safely Remove Asbestos* (2022).

SCOPE OF WORK

The scope of work involved the following:

- Completion of a Safety, Health, and Environmental Work Method Statement prior to undertaking works;
- Boundary control airborne asbestos monitoring for the duration of the works;
- Visual inspection of the subject area and sampling of residual soil surface soils for laboratory analysis of asbestos by a suitably qualified occupational hygienist, following works;
- Analysis of twenty-three (23) soil samples by a NATA Accredited Laboratory for asbestos (0.001%) in soil analysis; and
- Preparation of an Asbestos Materials Clearance report outlining the site data and conclusions.

INSPECTION DETAILS

General

Impacted soil materials from within the subject area (refer to **Appendix A – Figures**) were wet down prior to removal works. Impacted soil materials were excavated and removed via an excavator and loaded into bogies to be moved to a designated 'Metro Stockpiling Area'. Upon completion of loading of each truck, and prior to them leaving the subject area, the vehicles were inspected and decontaminated by the removalist on-site. Removal works were undertaken by Spot-On Asbestos Removal Pty Ltd, a SafeWork NSW Class A licensed asbestos removalist (AD204059) on 22, 23, 24 and 27 May 2024.

Following the removal of non-friable asbestos impacted soils from the subject area, the supervising occupational hygienist inspected the footprint and surrounding areas for residual asbestos containing materials. No asbestos containing materials were observed on the residual soil surface within the subject area at the time of the inspection. The residual soil surface was sampled at a rate of 1:25 m2. Soil samples were sent to Eurofins Australia, a NATA accredited laboratory for quantitative asbestos analysis (NEPM WA DOH 0.001%). No suspected ACM was identified. A summary of the results of the assessment can be found in **Table 1**.

Airborne Asbestos Monitoring

Boundary control airborne asbestos monitoring was undertaken for the duration of the removal works. All air monitoring devices were calibrated and analysed by Eurofins | Environment Testing Pty Ltd, a NATA accredited laboratory. All monitoring results were below the detection limit of the method (< 0.01 fibres / mL) (Refer to ***Appendix C – Laboratory Documentation***).

Laboratory Analysis

Soil samples collected from the subject areas were submitted to a NATA accredited laboratory for quantitative asbestos analysis (refer to ***Appendix C – Laboratory Documentation***). A summary of the results is provided below in **Table 1** and **Table 2**.

Table 1 Laboratory Analytical Results for base footprint samples

Sample ID	Laboratory ID	Sample Date	Analyte	Matrix	Identification Results
Z2-FP-VAL01	24-My0078271	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL02	24-My0078272	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL03	24-My0078273	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL04	24-My0078274	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL05	24-My0078275	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL06	24-My0078276	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL07	24-My0078277	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL08	24-My0078278	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL09	24-My0078279	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL10	24-My0078280	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL11	24-My0078281	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL12	24-My0078282	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL13	24-My0078283	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL14	24-My0078284	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL15	24-My0078285	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL16	24-My0078286	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL17	24-My0078287	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL18	24-My0078288	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL19	24-My0078289	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL20	24-My0078290	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL21	24-My0078291	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL22	24-My0078292	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-FP-VAL23	24-My0078293	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected

Restrictions on Survey / Areas not accessed

Please note that this inspection is limited to the soil surface of the subject area. Areas adjacent to and below the soil surface of the subject area are considered outside the scope of this report.

Please remain diligent when undertaking any further work within or adjacent to the subject area and contact SE immediately if any further contamination is observed.

CONCLUSION

Based on the information presented in this report, it is the opinion of SE that:

- Visual examination of the subject area indicated no evidence of asbestos containing materials on the residual soil surface following removal works;
- The subject area is considered ***safe*** with regards to the asbestos hazard at the time of the visual inspection;
- The results from boundary control airborne asbestos monitoring indicated that the concentration of airborne fibres was below the detection limit of the method (< 0.01 fibres / mL);
- Laboratory analysis indicated that asbestos was ***not detected*** with the soil samples collected from the subject area following the removal works; and
- Please remain diligent and adhere to the restrictions within the body of this report and the limitations stated below.

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 on information provided by the client. The advice herein relates only to this project and all results, conclusions and recommendations made should be reviewed by a competent and experienced person with experience in environmental investigations, before being used for any other purpose. Sydney Environmental Group Pty Ltd (SE) accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced or amended in any away without prior approval by the client or SE and should not be relied upon by any other party, who should make their own independent enquiries.

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, SE reserves the right to review the report in the context of the additional information.

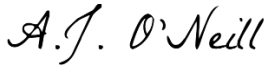
SE's professional opinions are based upon its professional judgment, experience, training and results from analytical data. In some cases, further testing and analysis may be required, thus producing different results and/or opinions. SE has limited investigation to the scope agreed upon with its client. It should be noted only the subject area outlined in this report was inspected and adjacent areas may contain asbestos.

SE has used a degree of care and skill ordinarily exercised in similar investigations by reputable member of the Environmental Industry within Australia. No other warranty, expressed or implied, is made or intended.

Inspected & Prepared By:

Tristan Bonython
Occupational Hygienist

Reviewed by:



Andrew O'Neill
Occupational Hygienist
NSW LAA LAA001413

APPENDIX A

FIGURES

Sydney Environmental Group

Sampling Plan				
Client Name:	CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV)	N	Figure Number:	1
Project Name:	Asbestos Validation Clearance		Figure Date:	30 May 2024
Project Location:	CPBUIJC SCAW Project, Gate 2, Patons Lane Compound Zone 2, Orchard Hills NSW		Report Number:	1870-ASBCLR-24-300524.v1f

APPENDIX B

PHOTOGRAPHS

Photograph 1: Subject area: Overview of Soil surface, as inspected on 28th May 2024.

Photograph 2: Subject area: Overview of Soil surface, as inspected on 28th May 2024.

Photograph 1: Subject area: Representative detail of Soil surface, as inspected on 28th May 2024.

APPENDIX C

LABORATORY DOCUMENTATION

Sydney Environmental Group

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ASBESTOS MATERIALS MAKE SAFE INSPECTION REPORT

Report Number	1870-ASBCLR-25-300524.v1f
Client	CPB Contractors and United Infrastructure Joint Venture (CPBUIJV)
Project Location	CPBUIJV SCAW PROJECT GATE 2, Patons Lane Compound Zone 2, Orchard Hills NSW
Inspection Date	28 May 2024
Report Date	30 May 2024
Scope of Works	Temporary 'Makesafe' of western wall prior to backfilling with suitable material into basin excavation.
Subject Area	CPBUIJV 'Sydney Metro Western Sydney Airport, Surface and Civil Alignment Works', Gate 2 Patons Lane Compound Zone 2, Orchard Hills NSW, non-friable asbestos impacted soil removal.

INTRODUCTION

General

Sydney Environmental Group Pty Ltd (SE) was commissioned by CPB Contractors and United Infrastructure Joint Venture (CPBUIJV) to undertake an Asbestos Materials Make Safe Inspection of a section of the site located within 'CPBUIJV SCAW PROJECT GATE 2, Patons Lane Compound Zone 2'. The site inspection was carried out on 28 May 2024 by Tristan Bonython, a suitably experienced occupational hygienist under the supervision of Andrew O'Neill, a SafeWork NSW Licensed Asbestos Assessor (LAA) (LAA001413) representing SE.

Whole Report

No one section or part of a section, of this report should be taken as giving an overall idea of this report. Each section must be read in conjunction with the whole of this report, including its appendices and attachments.

Legislative Requirements

The survey works and production of this report have been undertaken in accordance with the requirements of:

- *Work Health and Safety Regulation 2017;*
- *Work Health and Safety Act 2011;*
- SafeWork NSW *Code of Practice: How to Manage and Control Asbestos in the Workplace* (2022); and
- SafeWork NSW *Code of Practice: How to Safely Remove Asbestos* (2022).

SCOPE OF WORK

The scope of work involved the following:

- Completion of a Safety, Health, and Environmental Work Method Statement prior to undertaking works;
- Visual inspection of subject area by an appropriately experienced occupational hygienist; and
- Preparation of an Asbestos Materials Make Safe report outlining the site data and conclusions.

INSPECTION DETAILS

General

Following the removal of non-friable asbestos impacted soils from the subject area, residual fragments of non-friable asbestos were identified to the western wall of the subject area which established the extent of excavation and end of planned excavation works. The western wall was spot picked and covered with a layer of geofabric to eliminate the risk of inadvertent disturbance of ACM.

No asbestos containing materials were observed on the residual soil surface within the subject area at the time of the inspection. The residual soil surface was sampled at a rate of 1:25 m2. Soil samples were sent to Eurofins Australia, a NATA accredited laboratory for quantitative asbestos analysis (NEPM WA DOH 0.001%). No suspected ACM was identified. A summary of the results of the assessment can be found in Table 1.

Soil materials within the site are known to contain non-friable asbestos in the form of asbestos fibre cement fragments. As a result of this, all earthworks within the subject area are undertaken under non-friable asbestos conditions. The proposed works within the subject area will not require earthworks, and the subject area has been covered with geofabric, making the soil surface inaccessible. As a result of this, the subject area can temporarily be cleared so that works can be undertaken without asbestos controls (i.e. asbestos PPE).

The area was visually inspected by the occupational hygienist on 3 February 2024 at 7:30 am. No visible evidence of asbestos containing materials was observed on the residual soil surface at the time of the inspection. The subject area has been made safe and can be accessed without asbestos controls in place.

This Make Safe report will become null and invalid if earthworks recommence in the area and soil is disturbed, or the geofabric is removed. Should any suspected asbestos materials be uncovered, works are to be halted, and the area re-inspected by the supervising occupational hygienist.

Airborne Asbestos Monitoring

Boundary control airborne asbestos monitoring was undertaken for the duration of the removal works. All air monitoring devices were calibrated and analysed by Eurofins | Environment Testing Pty Ltd, a NATA accredited laboratory. All monitoring results were below the detection limit of the method (< 0.01 fibres / mL) (Refer to ***Appendix C – Laboratory Documentation***).

Laboratory Analysis

Soil samples collected from the subject areas were submitted to a NATA accredited laboratory for quantitative asbestos analysis (refer to ***Appendix C – Laboratory Documentation***). A summary of the results is provided below in **Table 1**.

Table 1 Laboratory Analytical Results for wall samples

Sample ID	Laboratory ID	Sample Date	Analyte	Matrix	Identification Results
Z2-W01-1.0	24-My0078185	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-W02-0.5	24-My0078186	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-W02-1.5	24-My0078187	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-W03-0.5	24-My0078188	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-W03-1.5	24-My0078189	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
Z2-W04-1.0	24-My0078190	28 May 2024	Asbestos (0.001%)	Soil	No Asbestos Detected
FC01	24-My0078191	28 May 2024	Asbestos (0.001%)	Fragment	Asbestos Detected

Restrictions on Survey / Areas not accessed

Please note that this inspection is limited to the soil surface of the subject area. Areas adjacent to and below the soil surface of the subject area are considered outside the scope of this report.

Please remain diligent when undertaking any further work within or adjacent to the subject area and contact SE immediately if any further contamination is observed.

CONCLUSION

Based on the information presented in this report, it is the opinion of SE that:

- Visual examination of the subject area revealed no evidence of asbestos containing materials on the residual soil surface;
- The subject area is considered ***safe*** with regards to the asbestos hazard at the time of the inspection;
- This make safe report will become null and invalid once earthworks recommence in the area and soil is disturbed. Should and suspected asbestos materials be uncovered, works are to be halted, and the area re-inspected by the supervising occupational hygienist; and
- Please remain diligent and adhere to the restrictions within the body of this report and the limitations stated below.

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 on information provided by the client. The advice herein relates only to this project and all results, conclusions and recommendations made should be reviewed by a competent and experienced person with experience in environmental investigations, before being used for any other purpose. Sydney Environmental Group Pty Ltd (SE) accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced or amended in any away without prior approval by the client or SE and should not be relied upon by any other party, who should make their own independent enquiries.

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, SE reserves the right to review the report in the context of the additional information.

SE's professional opinions are based upon its professional judgment, experience, training and results from analytical data. In some cases, further testing and analysis may be required, thus producing different results and/or opinions. SE has limited investigation to the scope agreed upon with its client. It should be noted only the subject area outlined in this report was inspected and adjacent areas may contain asbestos.

SE has used a degree of care and skill ordinarily exercised in similar investigations by reputable member of the Environmental Industry within Australia. No other warranty, expressed or implied, is made or intended.

Prepared By:

A.J. O'Neill

Andrew O'Neill
Senior Occupational Hygienist
NSW Licensed Asbestos Assessor (LAA001413)

APPENDIX A

AERIAL PHOTOGRAPH

Aerial Photograph 1. Approximate location of subject area in the western section of Zone 2, located within Patons Lane Compound Zone 2, Orchard Hills NSW (Source: *maps.au.nearmap.com* accessed on 28 May 2024).

APPENDIX B

PHOTOGRAPHS

Photograph 1 View of the Subject Area prior to being covered with geofab and black plastic, as viewed facing west, as observed 28 May 2024.

Photograph 2 View of the Subject Area following being covered with geofab and black plastic, as viewed facing west, as observed 28 May 2024.

APPENDIX C

LABORATORY DOCUMENTATION

Sydney Environmental Group

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ASBESTOS MATERIALS CLEARANCE INSPECTION REPORT

Report Number	1870-ASBCLR-30-220724.v1f
Client	CPB Contractors and United Infrastructure Joint Venture (CPBUIJV)
Project Location	CPBUIJV SCAW Gate 2, Lansdowne Road Compound, Orchard Hills NSW
Remediation Date	18 & 19 July 2024
Inspection Date	18 & 19 July 2024
Report Date	22 July 2024
Scope of Works	Supervision of removal of stockpiled non–friable asbestos impacted soil materials, boundary control airborne asbestos monitoring for the duration of the works, and visual clearance of the subject area following removal works.
Subject Area	CPBUIJV 'Sydney Metro Western Sydney Airport, Surface and Civil Alignment Works', Gate 2 Lansdowne Road Compound, Orchard Hills NSW, non-friable asbestos containing stockpile footprint (refer to ***Appendix A – Figures*** and ***Appendix B – Photographs***).

INTRODUCTION

General

Sydney Environmental Group Pty Ltd (SE) was commissioned by CPB Contractors and United Infrastructure Joint Venture (CPBUIJV) to undertake an Asbestos Materials Clearance Inspection of the subject area located within CPBUIJV 'Sydney Metro Western Sydney Airport, Surface and Civil Alignment Works (SCAW)', Gate 2 Lansdowne Road Compound, Orchard Hills NSW. Site supervision was carried out on 18 & 19 July 2024 by Lawrence Liu, a suitably qualified occupational hygienist, under the supervision of Andrew O'Neill, a SafeWork NSW Licensed Asbestos Assessor (LAA) (LAA001413) representing SE.

Legislative Requirements

The survey works and production of this report have been undertaken in accordance with the requirements of:

- *Work Health and Safety Regulation 2017;*
- *Work Health and Safety Act 2011;*
- SafeWork NSW *Code of Practice: How to Manage and Control Asbestos in the Workplace* 2022; and
- SafeWork NSW *Code of Practice: How to Safely Remove Asbestos* 2022.

SCOPE OF WORK

The scope of work involved the following:

- Completion of a Safety, Health, and Environmental Work Method Statement prior to undertaking works;
- Boundary control airborne asbestos monitoring for the duration of the works;
- Supervision of the removal of stockpiled non-friable asbestos impacted soil materials by a suitably qualified occupational hygienist;
- Visual inspection of the subject area by a suitably qualified occupational hygienist, following works; and
- Preparation of an Asbestos Materials Clearance report outlining the site data and conclusions.

INSPECTION DETAILS

Initial Remediation Works

Stockpiled non-friable asbestos impacted soils identified on-site during a previous investigation were identified as requiring removal and off-site disposal to a suitably licensed receiving facility. The soil materials were temporarily stockpiled within the Stockpile Area 'Zone 1' on geofabric located in the northern portion of the site, south of the SCAW Gate 2 site entrance (SCAW, Gate 2, Lansdowne Road Compound, Orchard Hills NSW) (refer to ***Appendix A – Figures***).

Impacted soil materials were removed using a 22-tonne excavator and loaded into a truck and dog for off-site disposal at a licensed receiving facility. Upon completion of loading of each truck, and prior to them leaving the subject area, the vehicles were inspected and decontaminated by the removalist on-site. Removal works were undertaken by Spot-On Asbestos Removal Pty Ltd, a SafeWork NSW Class A licensed asbestos removalist (AD214060) on 18 & 19 July 2024.

Following the removal of non-friable asbestos impacted soils from the subject area, the supervising occupational hygienist inspected the footprint and surrounding areas for residual asbestos containing materials. No asbestos containing materials were observed on the residual soil surface within the subject area at the time of the inspection.

Airborne Asbestos Monitoring

Boundary control airborne asbestos monitoring was undertaken for the duration of the removal works. All air monitoring devices were calibrated and analysed by Eurofins | Environment Testing Pty Ltd, a NATA accredited laboratory. All monitoring results were below the detection limit of the method (< 0.01 fibres / mL) (Refer to ***Appendix C – Laboratory Documentation***).

Restrictions on Survey / Areas not accessed

Please note that this inspection is limited to the soil surface of the subject area. Areas adjacent to and below the soil surface of the subject area are considered outside the scope of this report.

Please remain diligent when undertaking any further work within or adjacent to the subject area and contact SE immediately if any further contamination is observed.

CONCLUSIONS & RECOMMENDATIONS

Based on the information presented in this report, it is the opinion of SE that:

- Visual examination of the subject area indicated no evidence of asbestos containing materials on the residual soil surface following removal works;
- The subject area is considered ***safe*** with regards to the asbestos hazard at the time of the visual inspection;
- The results from boundary control airborne asbestos monitoring indicated that the concentration of airborne fibres was below the detection limit of the method (< 0.01 fibres / mL); and
- Please remain diligent and adhere to the restrictions within the body of this report and the limitations stated below.

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 on information provided by the client. The advice herein relates only to this project and all results, conclusions and recommendations made should be reviewed by a competent and experienced person with experience in environmental investigations, before being used for any other purpose. Sydney Environmental Group Pty Ltd (SE) accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced or amended in any away without prior approval by the client or SE and should not be relied upon by any other party, who should make their own independent enquiries.

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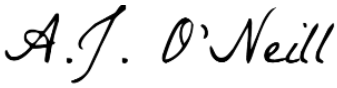
Prepared By:

Lawrence Liu
Occupational Hygienist

Reviewed By:



Andrew O'Neill
Senior Occupational Hygienist
SafeWork NSW LAA (LAA001413)

APPENDIX A

FIGURES

LEGEND

- Stockpile Area 'Zone 1'
- Special Waste (Non-Friable Asbestos) as General Solid Waste (Non-Putrescible) 'Stockpile 1 & 2'
- Special Waste (Non-Friable Asbestos) as Restricted Solid Waste (Non-Putrescible) 'Stockpile 3'

Source: Nearmap (apps.nearmap.com/maps/)

Sydney Environmental Group	**Scale:**	50 m — Subject Area	N	
	Client Name:	CPB Contractors Pty Ltd & Universal Infrastructure Pty Ltd Joint Venture (CPBUIJV)	**Figure Number:**	1
	Project Name:	Asbestos Materials Clearance Inspection	**Figure Date:**	22 July 2024
	Project Location:	CPBUIJC SCAW Gate 2, Lansdowne Road Compound, Orchard Hills NSW	**Report Number:**	1870-ASBCLR-30-220724.v1f

APPENDIX B

PHOTOGRAPHS

Photograph 1. Subject area 'Stockpile 1 & 2' following remediation works, as observed on 19 July 2024 facing north.

Photograph 2. Subject area 'Stockpile 3' following remediation works, as observed on 19 July 2024 facing north.

Photograph 3. Representative residual soil surface encountered within 'Stockpile 1 & 2' following remediation works, as observed on 22 July 2024.

Photograph 3. Representative residual soil surface encountered within 'Stockpile 3' following remediation works, as observed on 22 July 2024.

APPENDIX C

LABORATORY DOCUMENTATION

Sydney Environmental Group

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ASBESTOS MATERIALS CLEARANCE INSPECTION REPORT

Report Number	1870-ASBCLR-32-020924.v1f
Client	CPB Contractors and United Infrastructure Joint Venture (CPBUIJV)
Project Location	CPBUIJV SCAW Gate 2, Patons Lane Compound, Zone 2 Stockpiling Area, Orchard Hills NSW
Remediation Date	20th – 23rd August 2024
Inspection Date	23 August 2024
Report Date	2 September 2024
Scope of Works	Supervision of removal of stockpiled non–friable asbestos impacted soil materials, boundary control airborne asbestos monitoring for the duration of the works, and visual clearance of the subject area following removal works.
Subject Area	CPBUIJV 'Sydney Metro Western Sydney Airport, Surface and Civil Alignment Works', Patons Lane Compound, Zone 2 Stockpiling Area, Orchard Hills NSW, non-friable asbestos containing stockpile footprints (refer to ***Appendix A – Figures*** and ***Appendix B – Photographs***).

INTRODUCTION

General

Sydney Environmental Group Pty Ltd (SE) was commissioned by CPB Contractors and United Infrastructure Joint Venture (CPBUIJV) to undertake an Asbestos Materials Clearance Inspection of the subject area located within CPBUIJV 'Sydney Metro Western Sydney Airport, Surface and Civil Alignment Works (SCAW)', Patons Lane Compound Zone 2 Stockpiling Area, Orchard Hills NSW. Supervision works were undertaken on 20th – 23rd August 2024 by Lachlan Mulhearn and Siyuan He, two (2) suitably qualified occupational hygienists representing SE. The final clearance inspection was undertaken on 23rd August 2024 by Siyuan He under the supervision of Andrew O'Neill, a SafeWork NSW Licensed Asbestos Assessor (LAA) (LAA001413) representing SE.

Legislative Requirements

The survey works and production of this report have been undertaken in accordance with the requirements of:

- *Work Health and Safety Regulation 2017;*
- *Work Health and Safety Act 2011;*
- SafeWork NSW *Code of Practice: How to Manage and Control Asbestos in the Workplace* 2022; and
- SafeWork NSW *Code of Practice: How to Safely Remove Asbestos* 2022.

SCOPE OF WORK

The scope of work involved the following:

- Completion of a Safety, Health, and Environmental Work Method Statement prior to undertaking works;
- Boundary control airborne asbestos monitoring for the duration of the works;
- Supervision of the removal of stockpiled non-friable asbestos impacted soil materials by a suitably qualified occupational hygienist;
- Visual inspection of the subject area by a suitably qualified occupational hygienist, following works; and
- Preparation of an Asbestos Materials Clearance report outlining the site data and conclusions.

INSPECTION DETAILS

General

Stockpiled non-friable asbestos impacted soils identified on-site during a previous investigation were identified as requiring removal and off-site disposal to a suitably licensed receiving facility. The soil materials were temporarily stockpiled within the Stockpile Area 'Zone 2' on geofabric located in the northern portion of the site, south of the SCAW Gate 2 site entrance (SCAW, Gate 2, Patons Lane Compound, Orchard Hills NSW) (refer to ***Appendix A – Figures***).

Impacted soil materials were removed using a 22-tonne excavator and loaded into a truck and dog for off-site disposal at a licensed receiving facility. Upon completion of loading of each truck, and prior to them leaving the subject area, the vehicles were inspected and decontaminated by the removalist on-site. Removal works were undertaken by Spot-On Asbestos Removal Pty Ltd, a SafeWork NSW Class A licensed asbestos removalist (AD214060) on 20th-23rd August 2024.

Following the removal of non-friable asbestos impacted soils from the subject area, the supervising occupational hygienist inspected the footprint and surrounding areas for residual asbestos containing materials on 23rd August 2024. No asbestos containing materials were observed on the residual soil surface within the subject area at the time of the inspection.

Airborne Asbestos Monitoring

Boundary control airborne asbestos monitoring was undertaken for the duration of the removal works. All air monitoring devices were calibrated and analysed by Eurofins | Environment Testing Pty Ltd, a NATA accredited laboratory. All monitoring results were below the detection limit of the method (< 0.01 fibres / mL) (Refer to ***Appendix C – Laboratory Documentation***).

Restrictions on Survey / Areas not accessed

Please note that this inspection is limited to the soil surface of the subject area. Areas adjacent to and below the soil surface of the subject area are considered outside the scope of this report.

Please remain diligent when undertaking any further work within or adjacent to the subject area and contact SE immediately if any further contamination is observed.

CONCLUSIONS & RECOMMENDATIONS

Based on the information presented in this report, it is the opinion of SE that:

- Visual examination of the subject area indicated no evidence of asbestos containing materials on the residual soil surface following removal works;
- The subject area is considered ***safe*** with regards to the asbestos hazard at the time of the visual inspection;
- The results from boundary control airborne asbestos monitoring indicated that the concentration of airborne fibres was below the detection limit of the method (< 0.01 fibres / mL); and
- Please remain diligent and adhere to the restrictions within the body of this report and the limitations stated below.

LIMITATIONS

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Prepared By:

Siyuan He

Siyuan He
Occupational Hygienist

Reviewed By:

A.J. O'Neill

Andrew O'Neill
Senior Occupational Hygienist
SafeWork NSW LAA (LAA001490)

APPENDIX A

FIGURES

Aerial Image 1: Aerial image of the subject area within the site, following the removal of the non-friable asbetsos impacted stockpiles (Source: Nearmapp apps.nearmap.com.au/maps, accessed 2 September 2024).

APPENDIX B

PHOTOGRAPHS

Photograph 1. View of the subject area following remediation works, as observed on 23 August 2024, facing north-east.

Photograph 2. View of the northern portion of the subject area following remediation works, as observed on 23 August 2024, facing north-east.

APPENDIX C

LABORATORY DOCUMENTATION