ENV Solutions

ENVIRONMENTAL | ASBESTOS | REMEDIATION | RESOURCE RECOVERY

DETAILED SITE INVESTIGATION

25-27 Boyd St, Tweed Heads, NSW, 2485

Job Number: 250347

For:

Homes NSW

By:

ENV Services Pty Ltd

Date:

29/05/2025

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SCOPE OF ENGAGEMENT AND LIMITATIONS

This report has been prepared by ENV Services Pty Ltd at the request of Homes NSW for the purpose of a Detailed Site Investigation. No other parties may rely on the contents of this report for any purposes except those stated.

This report has been prepared based on the information provided to us and from other information obtained as a result of enquiries made by us. ENV accepts no responsibility for any loss or damage suffered howsoever arising to any person or corporation who may use or rely on this document for a purpose other than that described above.

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ENV declares that it does not have, nor expects to have, a beneficial interest in the subject project.

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LIST OF ACRONYMS

Below is a list of commonly used acronyms in this report:

COC	Chain of Custody
COPC	Chemical of Potential Concern
EILs	Ecological Investigation Levels
ENV	ENV Services Pty Ltd
HILs	Health Investigation Levels
NEPC	National Environment Protection Council
NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)
NSW EPA	New South Wales Environment Protection Authority
OCP	Organochlorine Pesticides
QA/QC	Quality Assurance and Quality Control

EXECUTIVE SUMMARY

ENV Services Pty Ltd (ENV) was engaged by Homes NSW (the Client) to complete a Detailed Site Investigation (DSI) at 25-27 Boyd St, Tweed, Tweed Heads (hereafter referred to as the 'site'). ENV understands that the investigation has been requested to address the request for information (RFI) from the Department Planning Housing Infrastructure (DPHI) for redevelopment of the Lot, in accordance with the requirements of NSW State Environment Planning Policy (resilience and hazards) (SEPP) (2021) and the Tweed Shire Council pre-demolition sub slab testing requirements (last updated 2020).

The RFI was issued due to missing analytes from the original contamination investigation conducted by EnviroScience Solutions in 2023 (Appendix E), specifically organochlorine pesticides (OCPs). To ensure a comprehensive assessment and compliance with Tweed Shire Council requirements, additional testing was undertaken by ENV. The previous investigation confirmed that concentrations of all analysed contaminants fell below the adopted assessment criteria for residential land use (*National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999, as amended 2013* (NEPC, 2013); NEPM HIL-A).

The DSI conducted by ENV included the following components:

- A desktop review of the site conditions, history and surrounding environment, including previous reports;
- Identification of past and present potentially contaminating activities and chemicals of potential concern (COPC);
- An inspection of the investigation area and adjacent areas of land;
- Development of a conceptual site model (CSM);
- Collection of 27 soil samples from nine (9) discrete locations at up to three depth intervals within the site area (2035 m^2), focused on dwelling footprints;
- Assessment of the soil analytical results against relevant Tier 1 investigation levels detailed in the *NEPM* for residential land use*;* and
- Assessment of the environmental (chemical) suitability of soils under and around the existing dwellings floors, for future residential land use.

This report has been prepared in accordance with the Tweed Shire Council pre-demolition testing requirements. As such, the contaminants of potential concern (COPC) for this assessment were assumed to be Organochlorine Pesticides (OCPs), potentially applied under the original building envelope (demolished in 2023).

A site inspection was completed concurrently with the soil sampling program on 02 April 2025, with no soil discolouration or olfactory contamination observed. The sampling program comprised the collection of soil samples from nine (9) discrete locations, in accordance with the Tweed Shire Council requirements from three depth intervals (0.0 – 0.15 mBGL, 0.15 – 0.3 mBGL, 0.3 – 0.5 m BGL), and sent for laboratory analysis at NATA accredited laboratory Eurofins. Results for soil samples are tabulated and provided in Appendix C, along with the laboratory issued reports and certificates.

The laboratory reported all concentrations fell below the adopted assessment criteria (NEPM HIL-A) for low density residential land use. Based on the findings of this assessment, soils across the site are considered suitable for the proposed residential land use and require no further management, from a chemical perspective (specifically, OCP concentrations).

1 INTRODUCTION

ENV Services Pty Ltd (ENV) was engaged by Homes NSW (the Client) to complete a detailed site investigation (DSI) at 25-27 Boyd Street, Tweed Heads (hereafter referred to as the 'site'). ENV understands that the investigation has been requested to address the request for information (RFI) from the Department Planning Housing Infrastructure (DPHI) for redevelopment of the Lot, in accordance with the requirements NSW State Environment Planning Policy (resilience and hazards) (SEPP) (2021) and the Tweed Shire Council pre-demolition sub slab testing requirements (2020).

The RFI was issued due to missing analytes from the original contamination investigation conducted by EnviroScience Solutions in 2023 (Appendix E), specifically organochlorine pesticides (OCPs). The DSI was conducted to address this data gap.

This DSI has been prepared in general accordance with the requirements of the NSW EPA (2020) document entitled *Consultants Reporting on Contaminated Land (Contaminated Land Guidelines)* and the *Northern Rivers Regional Policy for the Management of Contaminated Land* (Northern Rivers Regional Councils, 2007).

1.1 Objective

The objective of the DSI was to assess the potential for contamination to exist at the site as a result of historical application of insecticides beneath the former building envelope; and if further investigation and/or remediation is required for the site to be considered suitable for proposed development, from a chemical perspective.

1.2 Scope of Works

The contamination assessment included the following components:

- A desktop review of the site conditions, history and surrounding environment, including review of previous reports;
- Identification of past and present potentially contaminating activities and chemicals of potential concern (COPC);
- An inspection of the investigation area and adjacent areas of land;
- Development of a preliminary conceptual site model (CSM);
- Collection of 27 soil samples from nine (9) discrete locations across the site;
- Assessment of the soil analytical results against relevant Tier 1 investigation levels detailed in the *National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999, as amended 2013* (NEPC, 2013 for future residential land use); and
- Assessment of the environmental (chemical) suitability of soils within the former building envelope with respect to the proposed future residential land use.

1.3 Technical and Regulatory Framework

The following technical and regulatory framework has been considered in preparing this assessment:

- Contaminated Land Management Act 1997 (CLM Act);
- Environmental Planning and Assessment Act 1979;
- *State Environmental Planning Policy (Resilience and Hazards)* (Department Planning, Industry and Environment & NSW Environment Protection Authority [EPA], 2021);
- *Sampling Design Guidelines* (NSW EPA, 2022) – Parts 1 and 2;
- *National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999, as amended 2013* (NEPC, 2013);
- *Consultants Reporting on Contaminated Land (Contaminated Land Guidelines)* (NSW EPA, 2020);
- *Regional Policy for the Management of Contaminated Land* (Northern Rivers Regional Councils, 2007); and
- *Pre-Demolition Testing Requirements, Tweed Shire Council (2020).*

2 SITE DESCRIPTION AND CHARACTERISTICS

2.1 Site Identification Details

Table 1 provides an overview of relevant identification details for the site. The site location is depicted in Figure 1, Appendix A.

Table 1: Site Details

Site Address	25-27 Boyd Street, Tweed Heads, NSW 2485
Real Property Description	Lot 1 on DP843470
Site Area	2035 m^2
Local Government Area	Tweed Shire
Existing Land Use	Residential (buildings demolished)
Proposed Land Use	Medium Density Residential (multi-storey apartments)

2.2 Site Investigation Observations

At the time of the ENV investigation, the site was bare land, with previous residential dwellings having been removed.

Site observations during the sampling program recorded a well graded, light brown- tan gravely clay across the surface of the site consistent with soils described in the literature for the site area. At deeper depth intervals, trace inclusions of coarse sands became mixed with brown clay.

Photographs taken during the site inspection and soil sampling activities are provided in Appendix B.

2.3 Zoning and Land Use

The site is zoned R3 – Medium Density Residential under Tweed Shire Council Local Environment Plan (LEP) (2014). An excerpt of the Tweed LEP (2014) land use zoning map is provided as Figure 3, Appendix A.

2.4 Topography and Drainage

According to Geoscience Australia (2021) the investigation area is relatively flat. It is reasonable to assume that surface water from the site will infiltrate surface soils and/or flow overland to the east, to surface storm water drains on Boyd Street.

2.5 Geology and Soils

The NSW Department of Planning, Industry and Environment's eSPADE v2.2 webapp maps the site to be situated within the Kingscliff soil landscape (ki). The Kingscliff soil landscape can be summarised as follows:

- Soils – *Deep (>200 cm), generally well-drained Podzols (Uc2.22, Uc2.21).*

- Geology – *Aeolian and marine quartz sand sheets and dunes of the Pleistocene inner barrier system.*

Site observations during the sampling program (ENV, 2025) recorded fill material consisting of gravelly clay with a light brown to yellow-tan colouration; well graded material, containing fine, angular gravels with occasional inclusions of coarse sand. Overall, the observed soil characteristics are consistent with descriptions found in the literature for the Tweed Heads area.

2.6 Surface Water Bodies and Flooding

The Tweed Marina that runs off the Tweed River is located approximately 180 m to the east of the site.

Due to the topography and infrastructure between the site and river, the risk of any potential contamination at the subject site migrating to the Tweed River is considered negligible.

The site is located within 80 m of a flood planning area of a design flood depth (0-1 m), as mapped within the Tweed Shire LEP (2014). The site is not effected by flood (1% AEP), according to the property flood report (Tweed Shire Council, 2020).

2.7 Groundwater Resources

A search of the WaterNSW Realtime groundwater database was completed on 02 April 2025. The search identified three (3) bores or other ground water resources within a 500 m radius of the site (GW306058, GW303657 and GW246047). If chemical contamination is identified in the surface soils at the investigation site, further investigation of the contamination extent, including groundwater, may be required.

2.8 Surrounding Environment

The site is located in an area of medium density residential dwellings. Land use immediately surrounding the site can be summarised as:

- North: Medium Density Residential (Florence Street)
- South: Medium Density Residential and Mixed Use
- East: Mixed Use
- West: Medium Density Residential and Public Recreation (Tweed Heads Park).

2.9 Contaminated Land Record and Record of Notices

The NSW EPA Contaminated Land Record (EPA Notifications) contains a list of sites which have been notified to the NSW EPA under the Contaminated Land Management Act 1997 (CLM Act) and was searched on 01 May 2025. No notices were recorded for the immediate area of the site (within 500 m) (NSW EPA, 2024).

The NSW EPA Record of Notices provides a register of sites which have been issued with a Notice by NSW EPA. The Record of Notices was searched on 14 May 2025. No sites located within 500 m of the site were listed on the Record.

2.10 POEO Act Public Register/Enviroportal Contaminated Land WebApp Search

The Protection of the Environment Operations Act 1997 (POEO Act) Public Register contains information about environment protection licences, licence applications, notices issued under the POEO Act, and pollution studies and reduction programs. The POEO Act Public Register was searched on 01 May 2025 for the Tweed Heads suburb, no licences were recorded for sites within 500 m of the site.

2.11 Cattle Dip Sites

The NSW DPI's cattle dip site locator and Tweed Shire Council's interactive Cattle Dip Map were searched on 01 May 2025. No cattle dips were recorded within a 500 m radius of the site.

2.12 Historical Aerial Photographs

A review of seven (7) historic aerial photographs (dated 1962, 1972, 1987, 1991, 1997, 2012 and 2024) was undertaken to assess changes in land use at the site and immediate surrounds. Aerial photographs were accessed through the NSW Historical Imagery Viewer.

A review of historical aerial photographs indicates that the site supported various structures from 1962 through to 2024. Between 1991 and 1997, the site underwent redevelopment (residential building), which remained in place until its demolition in 2023, as confirmed by the 2024 aerial imagery. Over time, the surrounding area experienced an increase in residential density. Notable developments include a park to the northwest, a marina to the southeast, and Club Tweed to the east of the site, which was established between 1972 and 1987.

Copies of the historical aerial photographs are provided as Figure 4 to Figure 10, Appendix A.

2.13 Historical Site Investigations

EnviroScience Solutions Pty Ltd conducted a Phase 3 asbestos clearance and soil testing at 25-27 Boyd Street, Tweed Heads, NSW, following the demolition of residential building (Appendix E). The inspection, carried out on 1 August 2023 by a licensed asbestos assessor, involved sampling thirteen test pits and eight stockpiles for asbestos and chemical contaminants. The results showed no detection of asbestos-containing materials (ACM), friable asbestos (FA), or asbestos fines (AF) in any samples. Additionally, chemical analysis for Total Recoverable Hydrocarbons (TRH), Benzene, Toluene, Ethylbenzene, Xylene (BTEX), and Naphthalene indicated that all samples were below the Human Health Investigation Level (HIL-A) for residential areas, confirming no significant contamination.

Further testing for heavy metals; including arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc, revealed that all results were within acceptable limits, with no exceedances of the

HIL-A. Consequently, the site was deemed to be clear of hazardous materials, allowing for safe access and the backfilling of test pits and respreading of stockpiled soils on site.

3 CONCEPTUAL SITE MODEL

The information presented in the previous sections pertaining to the site characteristics, history and surrounding environment, has been used to identify potential contamination sources from historic and current activities on the subject site; COPC associated with these sources, plausible receptors of contamination at the site and in off-site areas, and exposure pathways linking the contamination sources and receptors. This information is brought together in what is known as a conceptual site model (CSM), which is presented in the following sub-sections.

3.1 Contamination Sources

The desktop study identified that the site has remained in residential use since development. The structures on the site appear to have been built prior to 1962. The potential exists for OCPs to have been applied beneath the building slabs as an anti-termite treatment.

Considering the age of the structures; there is also a possibility of site contamination from lead-based paints and asbestos. However, neither of these were identified by the previous sampling investigation (EnviroScience Solutions Pty Ltd, 2023).

3.2 Chemicals of Potential Concern

Organochlorine pesticides (OCPs) are the only chemicals of potential concern (COPC) associated with the identified contamination sources for this report, as all other COPCs have been analysed in previous investigations, as discussed in Section 2.13.

3.3 Potentially Affected Environmental Media

Potentially affected environmental media include surface soils. While other environmental media may be affected by the contamination sources described above, surface soils and shallow underlying soils beneath hardstands are considered the most likely media to be directly impacted by the presence of OCPs applied in termiticides. If the surface soils at the site are contaminated, it is possible that also other environmental media have been impacted, which may then require further investigation.

3.4 Potential Migration and Exposure Pathways

OCPs such as DDT are largely bound to soil particles and as a result, ingestion of soil particles/dust is considered the major exposure pathway. However, other OCPs, including aldrin and dieldrin, are readily absorbed by oral, inhalation and dermal exposure routes (NEPC, 2013).

For inorganics (i.e., heavy metals) in soil, ingestion of soil and dust particles is considered the most significant human exposure pathway (NEPC, 2013).

In consideration of the above, potential migration pathways for identified COPC include:

- Volatilisation;
- Generation of dust;
- Stormwater run-off; and

- Plant uptake and bioaccumulation.

Subsequently, potential exposure pathways include:

- Direct contact (ingestion or dermal) with contaminated environmental media;
- Inhalation of dust;
- Ingestion of food grown in contaminated soils; and
- Direct toxicity for plants and terrestrial/aquatic ecosystems, where these exist or may exist in the future (depending on hardstand cover).

3.5 Potential Receptors of Contamination

Potential receptors of contamination have been identified as:

- Future on-site residents;
- Future workers and visitors on-site;
- Future construction workers on-site; and
- Terrestrial ecosystems on-site.

It is noted that the potential for off-site receptors to be exposed to contamination originating from the site depends on the nature and extent of the contamination, soil properties, local surface water and groundwater hydrology, and distance to the receptors. If contamination is identified on-site, additional investigations may be required to identify and assess the risk to potential off-site receptors.

4 DATA QUALITY OBJECTIVES

4.1 Step 1: State the Problem

ENV understands that the DSI has been requested to support the development of a 13 storey residential building at the site. The purpose of the DSI is to evaluate the potential for contamination resulting from current or past land use. A previous investigation, described in Section 2.12, was conducted at the site in August 2023, analysing soil for asbestos and heavy metals following demolition activities. The results confirmed that no contamination was present, however OCPs where not analysed.

4.2 Step 2: Identify the Decision(s)

The principal decisions (questions) for this investigation are:

- What are the current and previous land uses at the site and is there a potential for contamination to exist as a result of pesticide application beneath the former building footprint?
- What are the COPC associated with pesticide application?
- Do the concentrations of COPC exceed relevant assessment criteria for the protection of potential receptors?
- Is the investigation area suitable for the proposed future medium density residential land use from a contamination perspective, or is further investigation and/or remediation required?

4.3 Step 3: Inputs into the Decision(s)

To address the decisions in Step 2, the following activities were completed:

- A desktop review of relevant and available information, to gain an understanding of site characteristics, history and potential receptors, as well as to identify gaps in the existing data;
- An inspection of the site and surrounding areas; and
- Soil sampling and laboratory analysis of COPC.

4.4 Step 4: Define the Study Boundaries

The study area encompassed the proposed lot boundaries, currently identified as 1/DP843470. Sub-slab soil samples were not collected, as the site was demolished in 2023. Instead, samples were obtained across the site within the original building footprint, to a depth of 0.5 m below ground level (mBGL). Regarding temporal boundaries, the site inspection and soil sampling were conducted over the course of a single day, providing a snapshot of the soil conditions at the time of assessment.

4.5 Step 5: Develop the Analytical Approach (Decision Rule)

The number of discrete soil sampling locations required for site characterisation was determined in accordance the Tweed pre-demolition testing requirements (2020) and the NSW EPA (2022) Sampling Design Guidelines; with reference to the size of the investigation area.

Samples were collected using a systematic sampling pattern and involved the collection of soil samples from nine (9) discrete locations. Soil samples were collected from the upper soil stratum (0-0.15, 0.15-0.3, 0.3-0.5 mBGL). Laboratory analysis was conducted, with results assessed against the HIL-A (Tier 1) investigation levels outlined in the NEPM (NEPC, 2013). Use of these levels is conservative, in consideration of the proposed medium density residential land use (apartment buildings).

To characterise the site, the following statistical measures were adopted, with the results compared to the adopted assessment criteria:

- Maximum observed contaminant concentration of each COPC.

4.6 Step 6: Specify the Performance or Acceptance Criteria

Assessment criteria were adopted from the Tier 1 investigation levels outlined in *Schedule B(1) Guideline on Investigation Levels For Soil and Groundwater* (NEPC, 2013) and included:

- Health investigation levels (HILs): exposure setting A – HIL A residential with accessible soil. Includes standard residential properties, with gardens and grassed areas, as well as day cares, preschools, and primary schools.
- Ecological investigation levels (EILs) for Urban Residential and open Public Space. This land-use setting is broadly equivalent to the HIL-Residential A land use scenario.

As described above, adoption of the HIL-A is conservative, given the proposed medium density land use (apartments).

Tier 1 investigation levels adopted for the assessment are summarised in Table 2. The investigation and screening levels contained in NEPC (2013) have been established through toxicity tests and field and laboratory experiments. In some cases, insufficient data currently exist to provide thresholds. In these cases, the laboratory analysis data is simply used as an indicator of the presence and extent of contamination.

Table 2: Adopted Assessment Criteria (HILs/EILs)

Chemical	Unit	HIL Res A	EIL Res & Open Space
Organochlorine Pesticides			
DDT+DDE+DDD	mg/kg	240	180
Aldrin + Dieldrin	mg/kg	6	-
Chlordane (gamma)	mg/kg	50	-
Chlordane (alpha)	mg/kg	-	-
Endosulfan	mg/kg	270	-
Endrin	mg/kg	10	-
Heptachlor	mg/kg	6	-
HCB	mg/kg	10	-
Methoxychlor	mg/kg	300	-
Mirex	mg/kg	10	-
Toxaphene	mg/kg	20	-

4.7 Step 7: Optimise the Design for Obtaining Data

The sampling regime was designed to collect soil data from surface soils and sub surface soils within the investigation area; with reference to the footprint of structures formerly in place on the site. The design incorporated guidance and requirements presented in NEPC (2013), as well as current Tweed Shire Council guidance for pre-demolition assessments (2020) and other current industry standards relating to the objectives of the assessment.

To optimise the design of the investigation, the sampling and analytical program included in the DSI was devised to specifically target information required to meet the pre-demolition testing requirements of Tweed Shire Council.

5 SITE INVESTIGATION METHODOLOGY

5.1 Sampling and Analysis Plan

The sampling program comprised the collection of soil samples from nine (9) discrete locations and three depth intervals per location (0.0 - 0.15, 0.15 - 0.3 and 0.3 - 0.5 mBGL).

Sampling locations are depicted in Figure 2, Appendix A. The sampling methodology is summarised in Table 3.

Table 3: Soil Sampling Methodology

Activity	Details
Sampling	▪ At all sampling locations, surface soil was loosened with a hand auger and collected using a fresh pair of disposable nitrile gloves. ▪ Samples were collected by an appropriately qualified Environmental Consultant from ENV.
Laboratory Analysis	▪ All primary samples were analysed for the identified COPC.
Sample Preservation and Transport	▪ Samples were placed in laboratory-supplied sample jars, with no headspace. ▪ Each sample was labelled with the project number, sampling date and unique sample identifier, and immediately placed into a chilled esky with ice, pending dispatch to the laboratory. ▪ Samples were transported to a laboratory accredited by the National Association of Testing Authorities (NATA) for the required analysis, and with accompanying chain of custody (COC) documentation.
Decontamination Procedure	▪ The hand auger was cleaned between sampling locations using detergent (*Decon 90)* and potable water.

5.2 Justification of Sampling Design and Analysis Plan

Justification for the sampling design and analysis plan is as follows:

- The number of discrete sampling locations was established in accordance with the NEPC (2013), NSW EPA (2022) and the Tweed Shire Council, Pre-demolition Testing requirements (2020) for the building footprint area of approximately 1,400 m^2.
- Sampling locations, including stratum and depth, were based on the requirements of the Tweed Shire Council Pre-demolition Testing requirements.
- COPC include contaminants that are persistent in the environment; and are recognised as having been used historically in the Northern Rivers region for the following purposes:
    - potential application of OCPs to structural envelopes and beneath building slabs for termicidal treatment.

6 RESULTS

6.1 Laboratory Analysis Results

Laboratory analysis results for soil samples are tabulated and provided in Appendix C, along with the laboratory issued reports and certificates.

The laboratory reported that only low OCP concentrations were detected in a limited number of samples, with all OCP concentrations below the adopted assessment criteria (HIL-A) for the investigation area.

6.2 Quality Assurance/Quality Control (QA/QC) Results

Quality assurance and quality control (QA/QC) involved an assessment of the completeness, comparability, representativeness, precision and accuracy of the investigation and collected data. QA/QC indicators and results are presented in Table 4.

Table 4: Summary of QA/QC Indicators and Results

QA/QC Indicator	Compliance	Details
Details of Sampling Team	Yes	▪ Field sampling was undertaken by an appropriately qualified Environmental Consultant, Will van der Beek.
Sampling Plan Adhered To	Yes	▪ All discrete samples were collected at three (3) depth intervals from each of 9 individual locations.
Decontamination of Equipment	Yes	▪ Reusable equipment (hand auger) was cleaned between sampling locations using a mixture of potable water and Decon90.
Sample Collection	Yes	▪ Laboratory supplied jars used (no headspace). ▪ Collected samples placed in cooler box with ice. ▪ Each sample labelled with a unique sample ID. ▪ Samples collected in accordance with the methodology detailed in Section 5.2.
Chain of Custody	Yes	▪ COC was completed with full and demonstrable delivery of samples. COC documentation is presented in Appendix C.
Holding Times	Yes	▪ Samples analysed within the laboratory specified holding times.
Analyses NATA accredited	Yes	▪ Samples analysed by SGS in Sydney, which is NATA accredited for the analyses required.

6.3 Summary of Data Usability

On the basis of the internal quality control data reported by SGS (Appendix C), and the field QA/QC procedures adopted by ENV for the DSI; the accuracy and representativeness of the analytical results is considered suitable to meet the objectives of this assessment, and to provide sufficient confidence in the primary dataset for interpretative purposes. No data was excluded from the soil data set for interpretation.

7 DISCUSSION AND CONCLUSION

Previous environmental testing at 25-27 Boyd Street, Tweed Heads, NSW, confirmed the site was clear of asbestos and hazardous chemical contaminants, with all heavy metal concentrations within acceptable guideline levels and no asbestos containing materials detected. However, organochlorine pesticides (OCPs) had not been included in the original testing program, prompting further assessment.

A site inspection and soil sampling program were subsequently undertaken by ENV on 02 April 2025. No visual or olfactory contamination was evident. The sampling program comprised the collection of soil samples from nine (9) discrete locations, in accordance with the Tweed Shire Council's pre-demolition testing requirements (2013).

Laboratory analysis results reported all OCP concentrations to be less than the adopted assessment criteria for residential land use.

Based on the findings of this assessment, and the results of the previous investigations, soils across the site are considered suitable for the proposed residential land use and require no further management, from a chemical perspective.

8 REFERENCES

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APPENDIX A

Figures

LEGEND

Site Location (Approximate)

0 0.1 0.2km

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Figure 1 – Site Location
25-27 Boyd St, Tweed Heads NSW

Project: 250437
Client: Homes NSW
Date Drawn: 01/05/25

Image source: NSW Explorer Maps v1.0

LEGEND

Site Location (Approximate)

Borehole Location (approximate)

0 5 10m

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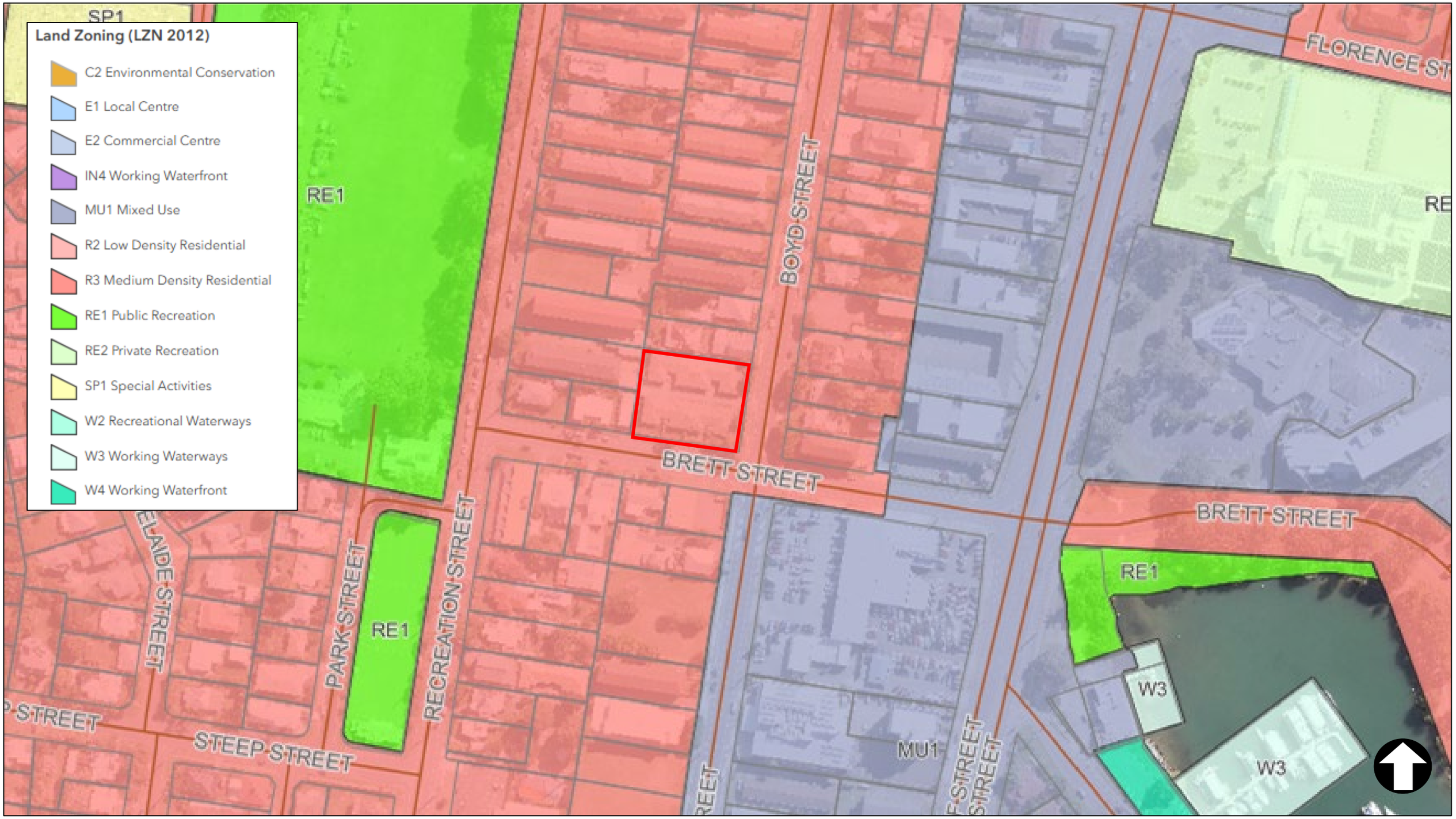
Figure 2 – Sampling Plan
25-27 Boyd St, Tweed Heads NSW

Project: 250437
Client: Homes NSW
Date Drawn: 01/05/25

Image source: Lismore City Council Intra maps



LEGEND

Site Location (Approximate)

0 30 60m

ENV Solutions
ENVIRONMENTAL | ASBESTOS | REMEDIATION | RESOURCE RECOVERY

Figure 3 – Land Zoning
25-27 Boyd St, Tweed Heads NSW

Project: 250437
Client: Homes NSW
Date Drawn: 01/05/25

Image source: Tweed Local Environmental Plans

LEGEND

Site Location (Approximate)

Image source: NSW Historical Imagery Viewer (not to scale)

ENV Solutions
ENVIRONMENTAL | ASBESTOS | REMEDIATION | RESOURCE RECOVERY

Figure 4 – 1962 Aerial Photograph
25-27 Boyd St, Tweed Heads NSW

Project: 250437
Client: Homes NSW
Date Drawn: 01/05/25

LEGEND

Site Location (Approximate)

Image source: NSW Historical Imagery Viewer (not to scale)

ENV Solutions
ENVIRONMENTAL | ASBESTOS | REMEDIATION | RESOURCE RECOVERY

Figure 5 – 1972 Aerial Photograph
25-27 Boyd St, Tweed Heads NSW

Project: 250437
Client: Homes NSW
Date Drawn: 01/05/25

LEGEND

Site Location (Approximate)

Image source: NSW Historical Imagery Viewer (not to scale)

ENV Solutions
ENVIRONMENTAL | ASBESTOS | REMEDIATION | RESOURCE RECOVERY

Figure 6 – 1987 Aerial Photograph
25-27 Boyd St, Tweed Heads NSW

Project: 250437
Client: Homes NSW
Date Drawn: 01/05/25

LEGEND

Site Location (Approximate)

ENV Solutions
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Figure 7 – 1991 Aerial Photograph
25-27 Boyd St, Tweed Heads NSW

Project: 250437
Client: Homes NSW
Date Drawn: 01/05/25

Image source: NSW Historical Imagery Viewer (not to scale)

LEGEND

Site Location (Approximate)

Image source: NSW Historical Imagery Viewer (not to scale)

ENV Solutions
ENVIRONMENTAL | ASBESTOS | REMEDIATION | RESOURCE RECOVERY

Figure 8 – 1997 Aerial Photograph
25-27 Boyd St, Tweed Heads NSW

Project: 250437
Client: Homes NSW
Date Drawn: 01/05/25

LEGEND

Site Location (Approximate)

Image source: Google Earth (not to scale)

ENV Solutions
ENVIRONMENTAL | ASBESTOS | REMEDIATION | RESOURCE RECOVERY

Figure 9 – 2012 Aerial Photograph
25-27 Boyd St, Tweed Heads NSW

Project: 250437
Client: Homes NSW
Date Drawn: 01/05/25

LEGEND

Site Location (Approximate)

Image source: Google Earth (not to scale)

ENV Solutions
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Figure 10 – 2024 Aerial Photograph
25-27 Boyd St, Tweed Heads NSW

Project: 250437
Client: Homes NSW
Date Drawn: 01/05/25

LEGEND

Site Location (Approximate)

0 30 60m

ENV Solutions
ENVIRONMENTAL | ASBESTOS | REMEDIATION | RESOURCE RECOVERY

Figure 11 – Flood Zoning Map
25-27 Boyd St, Tweed Heads NSW

Project: 250437
Client: Homes NSW
Date Drawn: 01/05/25

Image source: Tweed Shire Property Floods Report

APPENDIX B

Photolog

PHOTOGRAPHIC LOG

Client Name	Site Location	Project
Homes NSW	25-27 Boyd St, Tweed Heads, NSW 2485	Detailed Site Investigation

Photo No.	Date
1	02.05.2025

Description

Image of soil profile at auger hole HA4.

Photo No.	Date
2	02.05.2025

Description

Image of soils at sample HA4-0.15-0.3

ENV Solutions
ENVIRONMENTAL | ASBESTOS | REMEDIATION | RESOURCE RECOVERY

PHOTOGRAPHIC LOG

Client Name	Site Location	Project
Homes NSW	25-27 Boyd St, Tweed Heads, NSW 2485	Detailed Site Investigation

Photo No.	Date
3	02.05.2025

Description

Image of site taken day prior to sampling, looking north across the site.

Photo No.	Date
4	02.05.2025

Description

Image of site taken the day prior to sampling, looking east across site.

ENV Solutions
ENVIRONMENTAL | ASBESTOS | REMEDIATION | RESOURCE RECOVERY

PHOTOGRAPHIC LOG

Client Name	Site Location	Project
Homes NSW	25-27 Boyd St, Tweed Heads, NSW 2485	Detailed Site Investigation

Photo No.	Date
5	02.05.2025

Description

Image of borehole drilled during acid sulfate soil (ASS) sampling the day prior to DSI sampling. Soils found to be consistent throughout site.

APPENDIX C

Laboratory Results and Documentation

			Inorganics	Halogenated Benzenes	Organochlorine Pesticides																						
			Moisture Content (dried @ 103°C)	Hexachlorobenzene	Organochlorine pesticides EPAVic	Other organochlorine pesticides EPAVic	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
			%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			1	0.05	0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space															180												
NEPM 2013 Table 1A(1) HILs Res A Soil				10						6		50				240					10				6		300
NEPM 2013 Northern Rivers EIL Sandy Clay#															180												
Field ID	**Date**	**Matrix Type**																									
HA1_0-0.15	**02 Apr 2025**	**Soil**	**15**	<0.05	**0.26**	**0.26**	<0.05	<0.05	<0.05	<0.05	<0.05	**0.2**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.06**	<0.05
HA1_0.3-0.5	**02 Apr 2025**	**Soil**	**15**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA1_0.15-0.3	**02 Apr 2025**	**Soil**	**15**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA2_0-0.15	**02 Apr 2025**	**Soil**	**8.8**	<0.05	**0.2**	**0.2**	<0.05	<0.05	<0.05	<0.05	<0.05	**0.2**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA2_0.3-0.5	**02 Apr 2025**	**Soil**	**13**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA2_0.15-0.3	**02 Apr 2025**	**Soil**	**13**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA3_0-0.15	**02 Apr 2025**	**Soil**	**9.4**	<0.05	**0.1**	**0.1**	<0.05	<0.05	<0.05	<0.05	<0.05	**0.1**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA3_0.3-0.5	**02 Apr 2025**	**Soil**	**13**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA3_0.15-0.3	**02 Apr 2025**	**Soil**	**12**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA4_0-0.15	**02 Apr 2025**	**Soil**	**10**	<0.05	**0.1**	**0.1**	<0.05	<0.05	<0.05	<0.05	<0.05	**0.1**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA4_0.3-0.5	**02 Apr 2025**	**Soil**	**15**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA4_0.15-0.3	**02 Apr 2025**	**Soil**	**14**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA5_0-0.15	**02 Apr 2025**	**Soil**	**13**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA5_0.3-0.5	**02 Apr 2025**	**Soil**	**14**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA5_0.15-0.3	**02 Apr 2025**	**Soil**	**14**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA6_0-0.15	**02 Apr 2025**	**Soil**	**8.2**	<0.05	**0.1**	**0.1**	<0.05	<0.05	<0.05	<0.05	<0.05	**0.1**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA6_0.3-0.5	**02 Apr 2025**	**Soil**	**12**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA6_0.15-0.3	**02 Apr 2025**	**Soil**	**12**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA7_0-0.15	**02 Apr 2025**	**Soil**	**12**	<0.05	**0.1**	**0.1**	<0.05	<0.05	<0.05	<0.05	<0.05	**0.1**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA7_0.3-0.5	**02 Apr 2025**	**Soil**	**6.8**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA7_0.15-0.3	**02 Apr 2025**	**Soil**	**15**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA8_0-0.15	**02 Apr 2025**	**Soil**	**11**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA8_0.3-0.5	**02 Apr 2025**	**Soil**	**18**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA8_0.15-0.3	**02 Apr 2025**	**Soil**	**15**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA9_0-0.15	**02 Apr 2025**	**Soil**	**8.8**	<0.05	**0.26**	**0.26**	<0.05	<0.05	<0.05	<0.05	<0.05	**0.2**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.06**	<0.05
HA9_0.3-0.5	**02 Apr 2025**	**Soil**	**13**	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA9_0.15-0.3	**02 Apr 2025**	**Soil**	**11**	<0.05	**0.16**	**0.16**	<0.05	<0.05	<0.05	<0.05	<0.05	**0.1**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.06**	<0.05
Statistics																											
Number of Results			**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**
Number of Detects			**27**	**0**	**8**	**8**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**
Minimum Concentration			**6.8**	**<0.05**	**0.1**	**0.1**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**0.1**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**
Minimum Detect			**6.8**	**ND**	**0.1**	**0.1**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.1**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.06**	**ND**
Maximum Concentration			**18**	**<0.05**	**0.26**	**0.26**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**0.2**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**0.06**	**<0.05**
Maximum Detect			**18**	**ND**	**0.26**	**0.26**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.2**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.06**	**ND**
Average Concentration *			**12**	**0.025**	**0.083**	**0.083**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.076**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.029**	**0.025**
Median Concentration *			**13**	**0.025**	**0.05**	**0.05**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.05**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**
Standard Deviation *			**2.6**	**0**	**0.063**	**0.063**	**0**	**0**	**0**	**0**	**0**	**0.049**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.011**	**0**
95% UCL (Student's-t) *			**13.33**	**0.025**	**0.103**	**0.103**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.0919**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.0326**	**0.025**
Number of Env Standard Exceedances			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Number of Env Standard Exceedances (Detects Only)			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% of Detects			**100**	**0**	**30**	**30**	**0**	**0**	**0**	**0**	**0**	**30**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**0**
% of Non-Detects			**0**	**100**	**70**	**70**	**100**	**100**	**100**	**100**	**100**	**70**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**89**	**100**
% of Detects at or above Env Standards			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% of Results Below Env Standards or Non-Detect			**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

* A Non Detect Multiplier of 0.5 has been applied.

Based on sandy clay with CEC 40, pH 6.5, %OC 2.5 and %clay 80

Environmental Standards

2013, NEPM 2013 Table 1A(1) HILs Res A Soil

eurofins | Environment Testing

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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	+61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370 & 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise	43 Detroit Drive	1277 Cameron Road
Penrose	Mount Wellington	Rolleston	Gate Pa
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	ENV Services Pty Ltd
Contact name:	WILL VANDERBEEK
Project name:	Not provided
Project ID:	250347
Turnaround time:	3 Day
Date/Time received	May 2, 2025 5:40 PM
Eurofins reference	1215217

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
N/A	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Bonnie Pu on phone : or by email: Bonnie.Pu@eurofinsanz.com

Results will be delivered electronically via email to WILL VANDERBEEK - will.vanderbeek@envsolutions.com.au.

Note: A copy of these results will also be delivered to the general ENV Services Pty Ltd email address.

Global Leader - Results you can trust

ENV Services Pty Ltd
Level 1, 2247 Gold Coast Highway
Nobby Beach
QLD 4218

Attention: **WILL VANDERBEEK**

Report **1215217-S**
Project name
Project ID 250347
Received Date May 02, 2025

Client Sample ID			**HA1_0-0.15**	**HA1_0.15-0.3**	**HA1_0.3-0.5**	**HA2_0-0.15**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**B25-My0006169**	**B25-My0006170**	**B25-My0006171**	**B25-My0006172**
Date Sampled			**Apr 02, 2025**	**Apr 02, 2025**	**Apr 02, 2025**	**Apr 02, 2025**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	0.2	< 0.1	< 0.1	0.2
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	0.06	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	N/A	N/A	N/A	N/A
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	0.26	< 0.1	< 0.1	0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	0.26	< 0.1	< 0.1	0.2
Dibutylchlorendate (surr.)	1	%	54	57	53	52
Tetrachloro-m-xylene (surr.)	1	%	108	124	103	91
Sample Properties						
% Moisture	1	%	15	15	15	8.8

Client Sample ID			HA2_0.15-0.3	HA2_0.3-0.5	HA3_0-0.15	HA3_0.15-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B25-My0006173	B25-My0006174	B25-My0006175	B25-My0006176
Date Sampled			Apr 02, 2025	Apr 02, 2025	Apr 02, 2025	Apr 02, 2025
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	N/A	N/A	N/A	N/A
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	INT	53	56	56
Tetrachloro-m-xylene (surr.)	1	%	INT	104	99	103
Sample Properties						
% Moisture	1	%	13	13	9.4	12

Client Sample ID			HA3_0.3-0.5	HA4_0-0.15	HA4_0.15-0.3	HA4_0.3-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B25-My0006177	B25-My0006178	B25-My0006179	B25-My0006180
Date Sampled			Apr 02, 2025	Apr 02, 2025	Apr 02, 2025	Apr 02, 2025
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			HA3_0.3-0.5	HA4_0-0.15	HA4_0.15-0.3	HA4_0.3-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B25-My0006177	B25-My0006178	B25-My0006179	B25-My0006180
Date Sampled			Apr 02, 2025	Apr 02, 2025	Apr 02, 2025	Apr 02, 2025
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	N/A	N/A	N/A	N/A
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	67	57	53	54
Tetrachloro-m-xylene (surr.)	1	%	110	106	103	97
Sample Properties						
% Moisture	1	%	13	10	14	15

Client Sample ID			HA5_0-0.15	HA5_0.15-0.3	HA5_0.3-0.5	HA6_0-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B25-My0006181	B25-My0006182	B25-My0006183	B25-My0006184
Date Sampled			Apr 02, 2025	Apr 02, 2025	Apr 02, 2025	Apr 02, 2025
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	N/A	N/A	N/A	N/A
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			HA5_0-0.15	HA5_0.15-0.3	HA5_0.3-0.5	HA6_0-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B25-My0006181	B25-My0006182	B25-My0006183	B25-My0006184
Date Sampled			Apr 02, 2025	Apr 02, 2025	Apr 02, 2025	Apr 02, 2025
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1
Dibutylchlorendate (surr.)	1	%	56	55	52	51
Tetrachloro-m-xylene (surr.)	1	%	118	105	99	103
Sample Properties						
% Moisture	1	%	13	14	14	8.2

Client Sample ID			HA6_0.15-0.3	HA6_0.3-0.5	HA7_0-0.15	HA7_0.15-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B25-My0006185	B25-My0006186	B25-My0006187	B25-My0006188
Date Sampled			Apr 02, 2025	Apr 02, 2025	Apr 02, 2025	Apr 02, 2025
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	N/A	N/A	N/A	N/A
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	72	60	53	52
Tetrachloro-m-xylene (surr.)	1	%	138	111	101	112
Sample Properties						
% Moisture	1	%	12	12	12	15

Client Sample ID			HA7_0.3-0.5	HA8_0-0.15	HA8_0.15-0.3	HA8_0.3-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B25-My0006189	B25-My0006190	B25-My0006191	B25-My0006192
Date Sampled			Apr 02, 2025	Apr 02, 2025	Apr 02, 2025	Apr 02, 2025
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	N/A	N/A	N/A	N/A
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	66	61	63	INT
Tetrachloro-m-xylene (surr.)	1	%	103	108	103	58
Sample Properties						
% Moisture	1	%	6.8	11	15	18

Client Sample ID			HA9_0-0.15	HA9_0.15-0.3	HA9_0.3-0.5
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			B25-My0006193	B25-My0006194	B25-My0006195
Date Sampled			Apr 02, 2025	Apr 02, 2025	Apr 02, 2025
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	0.2	0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05

Client Sample ID			HA9_0-0.15	HA9_0.15-0.3	HA9_0.3-0.5
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			B25-My0006193	B25-My0006194	B25-My0006195
Date Sampled			Apr 02, 2025	Apr 02, 2025	Apr 02, 2025
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	0.06	0.06	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	N/A	N/A	N/A
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	0.26	0.16	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	0.26	0.16	< 0.1
Dibutylchlorendate (surr.)	1	%	52	70	54
Tetrachloro-m-xylene (surr.)	1	%	90	110	100
Sample Properties					
% Moisture	1	%	8.8	11	13

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Organochlorine Pesticides	Brisbane	May 06, 2025	14 Days
- Method: LTM-ORG-2220 OCP and PCB in Soil and Water			
% Moisture	Brisbane	May 02, 2025	14 Days
- Method: LTM-GEN-7080 Moisture			

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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	+61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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Eurofins Environment Testing NZ Ltd
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Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise	43 Detroit Drive	1277 Cameron Road
Penrose	Mount Wellington	Rolleston	Gate Pa
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: ENV Services Pty Ltd
Address: Level 1, 2247 Gold Coast Highway
Nobby Beach
QLD 4218

Project Name:
Project ID: 250347

Order No.:
Report #: 1215217
Phone:
Fax:

Received: May 2, 2025 5:40 PM
Due: May 9, 2025
Priority: 3 Day
Contact Name: WILL VANDERBEEK

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Organochlorine Pesticides	Moisture Set
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	HA1_0-0.15	Apr 02, 2025		Soil	B25-My0006169	X	X
2	HA1_0.15-0.3	Apr 02, 2025		Soil	B25-My0006170	X	X
3	HA1_0.3-0.5	Apr 02, 2025		Soil	B25-My0006171	X	X
4	HA2_0-0.15	Apr 02, 2025		Soil	B25-My0006172	X	X
5	HA2_0.15-0.3	Apr 02, 2025		Soil	B25-My0006173	X	X
6	HA2_0.3-0.5	Apr 02, 2025		Soil	B25-My0006174	X	X
7	HA3_0-0.15	Apr 02, 2025		Soil	B25-My0006175	X	X
8	HA3_0.15-0.3	Apr 02, 2025		Soil	B25-My0006176	X	X
9	HA3_0.3-0.5	Apr 02, 2025		Soil	B25-My0006177	X	X
10	HA4_0-0.15	Apr 02, 2025		Soil	B25-My0006178	X	X
11	HA4_0.15-0.3	Apr 02, 2025		Soil	B25-My0006179	X	X
12	HA4_0.3-0.5	Apr 02, 2025		Soil	B25-My0006180	X	X
13	HA5_0-0.15	Apr 02, 2025		Soil	B25-My0006181	X	X
14	HA5_0.15-0.3	Apr 02, 2025		Soil	B25-My0006182	X	X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
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Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Organochlorine Pesticides	Moisture Set
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780						X	X
15	HA5_0.3-0.5	Apr 02, 2025		Soil	B25-My0006183	X	X
16	HA6_0-0.15	Apr 02, 2025		Soil	B25-My0006184	X	X
17	HA6_0.15-0.3	Apr 02, 2025		Soil	B25-My0006185	X	X
18	HA6_0.3-0.5	Apr 02, 2025		Soil	B25-My0006186	X	X
19	HA7_0-0.15	Apr 02, 2025		Soil	B25-My0006187	X	X
20	HA7_0.15-0.3	Apr 02, 2025		Soil	B25-My0006188	X	X
21	HA7_0.3-0.5	Apr 02, 2025		Soil	B25-My0006189	X	X
22	HA8_0-0.15	Apr 02, 2025		Soil	B25-My0006190	X	X
23	HA8_0.15-0.3	Apr 02, 2025		Soil	B25-My0006191	X	X
24	HA8_0.3-0.5	Apr 02, 2025		Soil	B25-My0006192	X	X
25	HA9_0-0.15	Apr 02, 2025		Soil	B25-My0006193	X	X
26	HA9_0.15-0.3	Apr 02, 2025		Soil	B25-My0006194	X	X
27	HA9_0.3-0.5	Apr 02, 2025		Soil	B25-My0006195	X	X
Test Counts						27	27

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	N/A			0.5	N/A	
Method Blank							
Organochlorine Pesticides							
Aldrin and Dieldrin (Total)*	mg/kg	-			0.05	N/A	
DDT + DDE + DDD (Total)*	mg/kg	-			0.05	N/A	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	N/A			0.5	N/A	
LCS - % Recovery							
Organochlorine Pesticides							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chlordanes - Total	%	71			70-130	Pass	
4.4'-DDD	%	128			70-130	Pass	
4.4'-DDE	%	78			70-130	Pass	
4.4'-DDT	%	85			70-130	Pass	
a-HCH	%	73			70-130	Pass	
Aldrin	%	77			70-130	Pass	
b-HCH	%	83			70-130	Pass	
d-HCH	%	78			70-130	Pass	
Dieldrin	%	74			70-130	Pass	
Endosulfan I	%	82			70-130	Pass	
Endosulfan II	%	86			70-130	Pass	
Endrin aldehyde	%	76			70-130	Pass	
Endrin ketone	%	83			70-130	Pass	
g-HCH (Lindane)	%	83			70-130	Pass	
Heptachlor	%	91			70-130	Pass	
Hexachlorobenzene	%	72			70-130	Pass	
Methoxychlor	%	90			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	77			70-130	Pass	
4.4'-DDD	%	129			70-130	Pass	
4.4'-DDE	%	86			70-130	Pass	
4.4'-DDT	%	76			70-130	Pass	
a-HCH	%	77			70-130	Pass	
Aldrin	%	84			70-130	Pass	
b-HCH	%	80			70-130	Pass	
d-HCH	%	79			70-130	Pass	
Dieldrin	%	75			70-130	Pass	
Endosulfan I	%	80			70-130	Pass	
Endosulfan sulphate	%	78			70-130	Pass	
Endrin	%	70			70-130	Pass	
Endrin aldehyde	%	82			70-130	Pass	
Endrin ketone	%	83			70-130	Pass	
Heptachlor	%	72			70-130	Pass	
Heptachlor epoxide	%	74			70-130	Pass	
Hexachlorobenzene	%	75			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	B25-My0006178	CP	%	115			70-130	Pass	
4.4'-DDE	B25-My0006178	CP	%	106			70-130	Pass	
4.4'-DDT	B25-My0006178	CP	%	83			70-130	Pass	
a-HCH	B25-My0006178	CP	%	97			70-130	Pass	
Aldrin	B25-My0006178	CP	%	101			70-130	Pass	
b-HCH	B25-My0006178	CP	%	97			70-130	Pass	
d-HCH	B25-My0006178	CP	%	97			70-130	Pass	
Dieldrin	B25-My0006178	CP	%	91			70-130	Pass	
Endosulfan I	B25-My0006178	CP	%	110			70-130	Pass	
Endosulfan II	B25-My0006178	CP	%	112			70-130	Pass	
Endosulfan sulphate	B25-My0006178	CP	%	77			70-130	Pass	
Endrin	B25-My0006178	CP	%	80			70-130	Pass	
Endrin aldehyde	B25-My0006178	CP	%	80			70-130	Pass	
Endrin ketone	B25-My0006178	CP	%	104			70-130	Pass	
g-HCH (Lindane)	B25-My0006178	CP	%	93			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor	B25-My0006178	CP	%	86			70-130	Pass	
Heptachlor epoxide	B25-My0006178	CP	%	84			70-130	Pass	
Hexachlorobenzene	B25-My0006178	CP	%	95			70-130	Pass	
Methoxychlor	B25-My0006178	CP	%	75			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	B25-My0006187	CP	%	75			70-130	Pass	
4.4'-DDE	B25-My0006187	CP	%	80			70-130	Pass	
4.4'-DDT	B25-My0006187	CP	%	93			70-130	Pass	
a-HCH	B25-My0006187	CP	%	78			70-130	Pass	
Aldrin	B25-My0006187	CP	%	80			70-130	Pass	
b-HCH	B25-My0006187	CP	%	81			70-130	Pass	
d-HCH	B25-My0006187	CP	%	82			70-130	Pass	
Dieldrin	B25-My0006187	CP	%	76			70-130	Pass	
Endosulfan I	B25-My0006187	CP	%	79			70-130	Pass	
Endosulfan II	B25-My0006187	CP	%	88			70-130	Pass	
Endrin	B25-My0006187	CP	%	74			70-130	Pass	
Endrin ketone	B25-My0006187	CP	%	82			70-130	Pass	
g-HCH (Lindane)	B25-My0006187	CP	%	75			70-130	Pass	
Heptachlor	B25-My0006187	CP	%	84			70-130	Pass	
Heptachlor epoxide	B25-My0006187	CP	%	88			70-130	Pass	
Hexachlorobenzene	B25-My0006187	CP	%	74			70-130	Pass	
Methoxychlor	B25-My0006187	CP	%	99			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	B25-My0006194	CP	%	93			70-130	Pass	
4.4'-DDD	B25-My0006194	CP	%	116			70-130	Pass	
4.4'-DDE	B25-My0006194	CP	%	78			70-130	Pass	
a-HCH	B25-My0006194	CP	%	71			70-130	Pass	
Aldrin	B25-My0006194	CP	%	75			70-130	Pass	
b-HCH	B25-My0006194	CP	%	75			70-130	Pass	
d-HCH	B25-My0006194	CP	%	73			70-130	Pass	
Dieldrin	B25-My0006194	CP	%	71			70-130	Pass	
Endosulfan I	B25-My0006194	CP	%	80			70-130	Pass	
Endosulfan II	B25-My0006194	CP	%	81			70-130	Pass	
Endrin	B25-My0006194	CP	%	72			70-130	Pass	
Endrin ketone	B25-My0006194	CP	%	76			70-130	Pass	
Heptachlor	B25-My0006194	CP	%	79			70-130	Pass	
Hexachlorobenzene	B25-My0006194	CP	%	71			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Toxaphene	B25-Ap0053998	NCP	mg/kg	N/A	N/A	N/A	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	B25-My0006176	CP	%	12	13	6.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	B25-My0006178	CP	mg/kg	0.1	0.2	28	30%	Pass	
4.4'-DDD	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
b-HCH	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	B25-My0006178	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	B25-My0006187	CP	mg/kg	0.1	0.2	25	30%	Pass	
4.4'-DDD	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	B25-My0006187	CP	mg/kg	< 0.05	0.06	20	30%	Pass	
Hexachlorobenzene	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	B25-My0006187	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	B25-My0006187	CP	%	12	13	7.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	B25-My0006194	CP	mg/kg	0.1	0.2	10	30%	Pass	
4.4'-DDD	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endrin aldehyde	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	B25-My0006194	CP	mg/kg	0.06	< 0.05	18	30%	Pass	
Hexachlorobenzene	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	B25-My0006194	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	N/A
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Nileshni Goundar	Analytical Services Manager
Angelique Lang-Frey	Senior Analyst-Organic
Jonathon Angell	Senior Analyst-Organic
Jonathon Angell	Senior Analyst-Sample Properties

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

APPENDIX D

Tweed Shire Council Pre-Demolition Testing Requirements

Customer Service | 1300 292 872 | (02) 6670 2400
PO Box 816 Murwillumbah NSW 2484
Fax (02) 6670 2429 | ABN 90 178 732 496
tsc@tweed.nsw.gov.au | www.tweed.nsw.gov.au

TWEED SHIRE COUNCIL

Pre Demolition Testing

Building and Environmental Health Unit

A1. Background

Within Tweed shire, chemical treatment using Organo Chlorine pesticides beneath structures such as dwellings to provide an effective barrier to termites was only a recommendation. Nevertheless it was a method that was used extensively from pre 1960's until the use of such pesticides was banned around July 1995.

Organo Chlorine pesticides are known to persist in the environment for upwards of seventy (70) years and therefore it is possible that given their residual nature, they may remain within the soil material beneath structures such as dwellings where they were predominantly applied beneath concrete slabs.

Exposure to high levels of Organo Chlorine pesticides may lead to serious health concerns in humans and as a consequence this may pose an issue when considering applications for the demolition of structures where their use in providing a barrier to termites may have been possible.

Where chemical treatment involving the use of Organo Chlorine termiticides to the soil material beneath the structure may have been carried out Tweed Shire Council must consider the requirements of State SEPP (Resilience and Hazards) 2021 in determining any development applications to demolish a structure.

A2. Requirements

Should the applicant agree that contamination of the site is likely due to the presence of pesticides, and only the presence of pesticides due to termite control practices described within this note, the following protocol will be adopted:

A satisfactory Preliminary Site Remediation Action Plan shall be submitted as part of the development application. The plan shall set objectives and document the process to remediate the site including details of specific on site burial or treatment method and shall also include, but not be limited to, the minimum requirement to undertake the following assessment prior to release of the construction certificate:

- Prior to the **disturbance/removal of the concrete slab** commencing on site, a minimum of four (4) sample points shall be selected for the sampling of the soil material beneath the structure, the sample points shall be appropriately separated so as to provide a representative distribution pattern. The soil material shall ideally be accessed via breaching of the slab either by drilling or other method that will not lead to undue disturbance of the soil material beneath.

- Accessing the soil material from the sides of the slab is not an accepted sample method as the 0-150mm layer beneath the slab is unlikely to be intercepted.

- Samples of the soil material shall be taken from each of the four (4) sample points at the following depths: 0-150mm, 150-300mm and 300-500mm.

- Where the soil material is considered to be homogeneous at the four sample points and at each of the required depths, the samples from the same depth at each of the four points may be mixed to form a composite sample for analysis. Using this method will yield three (3) composite samples for analysis each consisting of four (4) sub-samples from each corresponding depth layer.

- The samples shall be sent under appropriate chain of custody documentation to a NATA (National Association of Testing Authorities) certified laboratory for analysis of Organo-Chlorine pesticides (eg; dieldrin, aldrin, heptachlor, chlordane etc.)

- Laboratory analysis results shall be submitted to Council for further consideration and **written approval prior to the disturbance/removal of the concrete slab.**

  An amended Remediation Action Plan (Final) is to be submitted if required by Council's Officer.

- Where composite sampling is utilized then results are to be adjusted and reported to reflect composite sample results.

A3. Note

The above procedures are to be carried out by a suitably qualified consultant with experience in contaminated soil sampling.

APPENDIX E

EnviroScience Solutions – Phase 3 Asbestos Clearance and Soil Testing Report (CLR29082R01)

EnviroScience SOLUTIONS
Protecting Health and the Environment Through Science

10th August 2023
NSW Land and Housing Corporation
Level 2, 31-39 Macquarie Street,
Parramatta, NSW 2150

Attn: Gerald Alexander

RE: 25-27 Boyd Street, Tweed Heads, NSW, 2485

PHASE 3 ASBESTOS CLEARANCE & SOIL TESTING LAHC 2023/250

Report Reference: CLR29082R01

Dear Mr. Alexander,

EnviroScience Solutions Pty Ltd were engaged by NSW Land and Housing Corporation to undertake soil sampling and a visual inspection post demolition, of the residential property located at 25-27 Boyd Street, Tweed Heads, NSW, 2845.

At the completion of demolition works, a visual inspection of the area was undertaken. The purpose of the inspection was to confirm that the asbestos containing materials and associated residues had been successfully removed. In addition to the visual clearance, two test pits were excavated within the house footprint and the back yard of the property to test for asbestos and chemical contaminates of concern at depth. It should be noted that this is not a clearance report that all asbestos products have been removed as the works were limited to the areas detailed in this report.

A visual inspection was undertaken on the 1st of August 2023 by Sam Ramsey, Licensed Asbestos Assessor No LAA001598 at the completion of the Demolition Works. Please refer to the images below, which depict the satisfactory completion of the removal works. Figure 1 below shows approximate locations of Test pits and stockpiles onsite.

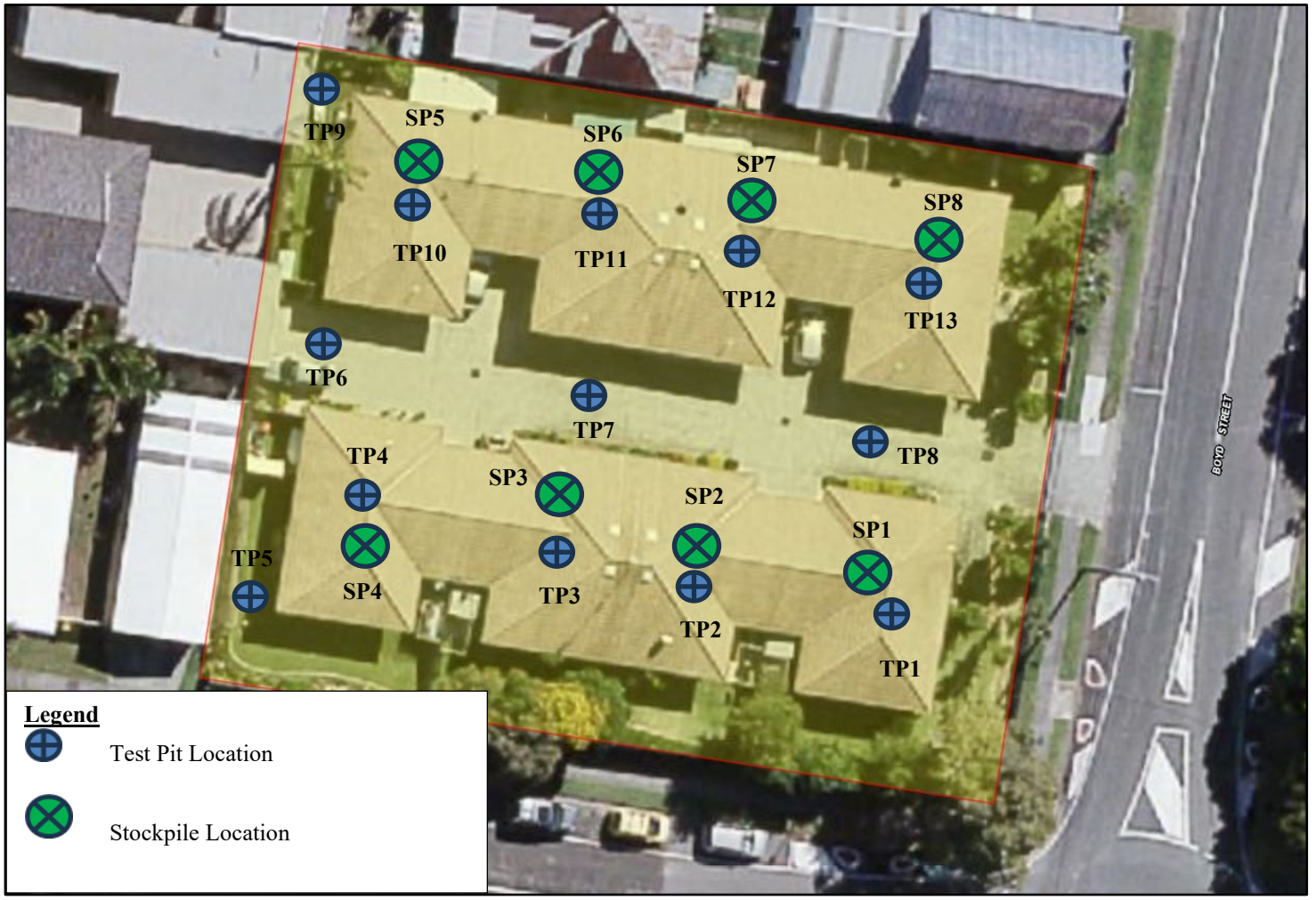


Figure 1: Location of samples collected for analysis

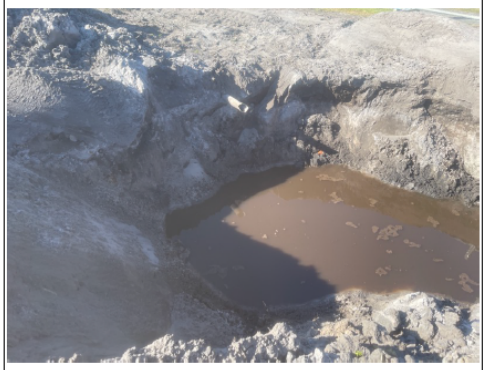
Table 1: Site after Demolition – 25-27 Boyd Street, Tweed Heads, NSW, 2485

Images of Sampling Locations	GPS Location	Comments
	Latitude: -28.177496 Longitude: 153.539688	Sand soil with rock and concrete fragments
	Latitude: -28.177483 Longitude: 153.539688	No asbestos observed

Images of Sampling Locations	GPS Location	Comments
	Latitude: -28.177481 Longitude: 153.539551	No asbestos observed, yellow sand
	Latitude: -28.177475 Longitude: 153.539536	No asbestos observed, gravel black sand and yellow sand

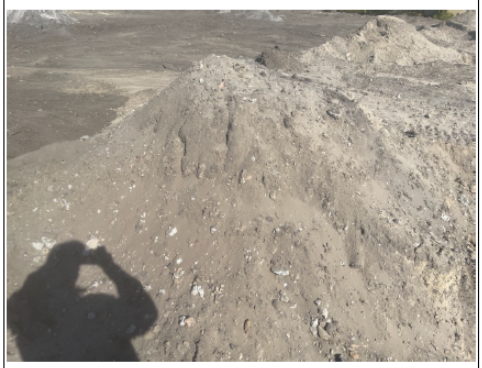
Images of Sampling Locations	GPS Location	Comments
	Latitude: -28.177473 Longitude: 153.539459	No asbestos observed, yellow sand
	Latitude: -28.177488 Longitude: 153.539444	No asbestos observed, grey sand and gravel

Images of Sampling Locations	GPS Location	Comments
	Latitude: -28.177488 Longitude: 153.539398	No asbestos observed, black sand and gravels
	Latitude: -28.177479 Longitude: 153.539368	No asbestos observed, grey and yellow sand with gravels

Images of Sampling Locations	GPS Location	Comments
	Latitude: -28.177519 Longitude: 153.539322	No asbestos observed, grey and black sand
	Latitude: -28.177416 Longitude: 153.539398	No asbestos observed, grey and black sand

Images of Sampling Locations	GPS Location	Comments
	Latitude: -28.177362 Longitude: 153.539490	No asbestos observed, white and grey sand
	Latitude: -28.177422 Longitude: 153.539886	No asbestos observed, grey and white sand

Images of Sampling Locations	GPS Location	Comments
	Latitude: -28.177296 Longitude: 153.539673	No asbestos observed, yellow sand and gravel
	Latitude: -28.177275 Longitude: 153.539688	No asbestos observed, yellow sand and gravel

Images of Sampling Locations	GPS Location	Comments
	Latitude: -28.177252 Longitude: 153.539597	No asbestos observed, yellow sand and gravel
	Latitude: -28.177286 Longitude: 153.539627	No asbestos observed, grey and yellow sand with gravels

Images of Sampling Locations	GPS Location	Comments
	Latitude: -28.177309 Longitude: 153.539551	No asbestos observed, yellow and grey sand and gravel
	Latitude: -28.177284 Longitude: 153.539536	No asbestos observed, grey and yellow sands with gravel

Images of Sampling Locations	GPS Location	Comments
	Latitude: -28.177212 Longitude: 153.539368	No asbestos observed, yellow and grey sand
	Latitude: -28.177229 Longitude: 153.539429	No asbestos observed, grey and yellow sand with gravel

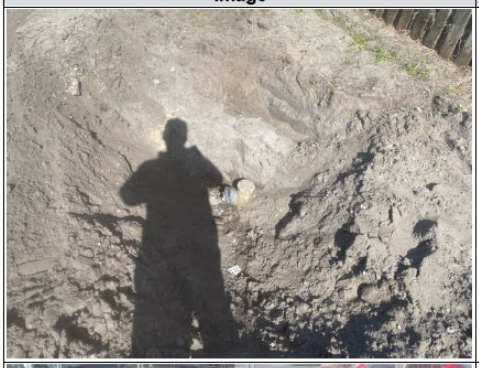
Images of Sampling Locations	GPS Location	Comments
	Latitude: -28.177244 Longitude: 153.539368	No asbestos observed, yellow sand and gravel

Image	GPS Location	Comments
	Latitude: -28.177223 Longitude: 153.539444	No asbestos observed on surface
	Latitude: -28.177429 Longitude: 153.539825	No asbestos observed on surface

Image	GPS Location	Comments
	Latitude: -28.177586 Longitude: 153.539627	No asbestos observed on surface.

	Latitude: -28.177519 Longitude: 153.539322	No asbestos observed on the surface.
	Latitude: -28.177416 Longitude: 153.539413	No asbestos observed on surface.

Table 2: Showing location of services on site

Image	GPS Location	Comments
	Latitude: -28.177412 Longitude: 153.539322	
	Latitude: -28.177494 Longitude: 153.539276	

	Latitude: -28.177326 Longitude: 153.539322	

Image	GPS Location	Comments
	Latitude: -28.177561 Longitude: 153.539734	

One (1) test pit location was established within each unit footprint. The test pit was then excavated to an approximate depth of 500mm and one (1) sample was obtained from each test pit for asbestos and chemical analysis for a total of thirteen (13) samples. Additionally, one (1) sample was taken from each stockpile from the surface of the footprint of each property for a total of eight (8) samples.

Asbestos materials were not detected within the test pits or stockpiles. The soil surface also remains clear of asbestos debris. It should be noted that analysis for friable asbestos or asbestos fines all samples obtained were negative for asbestos (Table 2).

Eight (8) samples were were obtained from the test pits and eight (8) samples from the former house footprints for chemical contamination analysis. The samples were sent to EnviroLab Chatswood on the 2nd of August 2023 and processed for analytes including: Total Recoverable Hydrocarbons (TRH), Benzene, Toluene, Ethylbenzene, Naphthalene and xylene (BTEXN). The results were compared to the NEPM Residential A, Human Health Investigation Levels (HIL'S).

The analytical results for the samples taken do not exceed or trigger any of the HIL's for heavy metals hydrocarbon. The results from the analysis of the soils indicate that the soil material does not contain Total Recoverable Hydrocarbons (TRH), Benzene, Toluene, Ethylbenzene, and xylene (BTEX) in excess of the method detection limits as described in the laboratory report (Appendix 2).

Table 3: Asbestos Results vs HIL A criteria (WA DOH, 2021)

Sample	Depth (mm)	Date Sampled	ACM (+7mm) (g)	FA (-7mm to +2mm) (g)	AF (-2mm) (g)	Asbestos Concentration (%w/w) ACM	Asbestos Concentration (% w/w) FA	Asbestos Concentration (%w/w) AF
Test Pit 1 – Unit 1	0-500	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Stockpile 1 – Unit 1	0-300	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Test Pit 2 – Unit 2	0-500	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Stockpile 2 – Unit 2	0-300	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Test Pit 3 – Unit 3	0-500	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Stockpile 3 – Unit 3	0-300	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Test Pit 4 – Unit 4	0-500	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Stockpile 4 – Unit 4	0-300	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Test Pit 5 – Rear Yard (SW)	0-500	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Test Pit 6 – West End Driveway	0-500	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Test Pit 7 – Centre Driveway	0-500	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Test Pit 8 – East End Driveway	0-500	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Test Pit 9 – Rear Yard (NW)	0-500	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Test Pit 10 – Unit 5	0-500	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Stockpile 5 – Unit 5	0-300	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Test Pit 11 – Unit 6	0-500	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Stockpile 6 – Unit 6	0-300	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Test Pit 12 – Unit7	0-500	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Stockpile 7 – Unit 7	0-300	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Test Pit 13 – Unit8	0-500	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Stockpile 8 – Unit 8	0-300	1/08/2023	NAD*	NAD*	NAD*	NAD*	NAD*	NAD*
Residential A Screening Levels Bonded ACM (%w/w)						**0.01% w/w**		
All Site Uses FA (%w/w)							**0.001%w/w**	
All Site Uses AF (%w/w)								**0.001%w/w**
***NAD (No Asbestos Detected)**								

Table 4: Heavy Metals Results vs HIL A Criteria

Sample	Depth (mm)	Date Sampled	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
Test Pit 1 – Unit 1	0-500	1/08/2023	<4	<0.4	2	13	55	<0.1	2	92
Stockpile 1 – Unit 1	0-300	1/08/2023	<4	<0.4	2	8	19	<0.1	1	34
Test Pit 2 – Unit 2	0-500	1/08/2023	<4	<0.4	2	30	33	<0.1	6	58
Stockpile 2 – Unit 2	0-300	1/08/2023	<4	<0.4	2	<1	2	<0.1	<1	8
Test Pit 3 – Unit 3	0-500	1/08/2023	<4	<0.4	<1	4	23	<0.1	<1	48
Stockpile 3 – Unit 3	0-300	1/08/2023	<4	<0.4	1	2	6	<0.1	<1	16
Test Pit 4 – Unit 4	0-500	1/08/2023	<4	<0.4	4	8	27	<0.1	2	100
Stockpile 4 – Unit 4	0-300	1/08/2023	<4	<0.4	2	2	13	<0.1	<1	29
Test Pit 5 – Rear Yard (SW)	0-500	1/08/2023	<4	<0.4	2	13	36	<0.1	2	63
Test Pit 6 – West End Driveway	0-500	1/08/2023	<4	<0.4	<1	4	2	<0.1	<1	17
Test Pit 7 – Centre Driveway	0-500	1/08/2023	<4	<0.4	1	8	26	<0.1	<1	96
Test Pit 8 – East End Driveway	0-500	1/08/2023	<4	<0.4	<1	1	5	<0.1	<1	13
Test Pit 9 – Rear Yard (NW)	0-500	1/08/2023	<4	<0.4	41	28	240	<0.1	4	130
Test Pit 10 – Unit 5	0-500	1/08/2023	<4	<0.4	2	15	49	<0.1	2	130
Stockpile 5 – Unit 5	0-300	1/08/2023	<4	<0.4	2	8	83	<0.1	1	85
Test Pit 11 – Unit 6	0-500	1/08/2023	<4	<0.4	1	25	16	<0.1	3	54
Stockpile 6 – Unit 6	0-300	1/08/2023	<4	<0.4	2	3	14	<0.1	<1	12
Test Pit 12 – Unit7	0-500	1/08/2023	<4	<0.4	3	14	62	<0.1	3	100
Stockpile 7 – Unit 7	0-300	1/08/2023	<4	<0.4	2	11	18	<0.1	<1	28
Test Pit 13 – Unit8	0-500	1/08/2023	<4	<0.4	1	8	20	<0.1	1	30
Stockpile 8 – Unit 8	0-300	1/08/2023	4	<0.4	2	42	28	<0.1	10	50
95%upper confidence Level			N/A	N/A	8.06	17.03	58.78	N/A	4.2	78.06
Residential A Health Based Levels (mg/kg)			**100**	**20**	**100**	**6000**	**300**	**40**	**400**	**7400**

Table 5: TRH & BTEX Results vs HSL

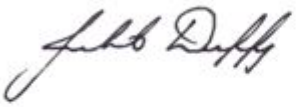
Sample	Depth (mm)	Date Sampled	TRH C6-C10 (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Naphthalene (mg/kg)	Benzene (mg/kg)
Test Pit 1 – Unit 1	0-500	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Stockpile 1 – Unit 1	0-300	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Test Pit 2 – Unit 2	0-500	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Stockpile 2 – Unit 2	0-300	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Test Pit 3 – Unit 3	0-500	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Stockpile 3 – Unit 3	0-300	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Test Pit 4 – Unit 4	0-500	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Stockpile 4 – Unit 4	0-300	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Test Pit 5 – Rear Yard (SW)	0-500	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Test Pit 6 – West End Driveway	0-500	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Test Pit 7 – Centre Driveway	0-500	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Test Pit 8 – East End Driveway	0-500	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Test Pit 9 – Rear Yard (NW)	0-500	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Test Pit 10 – Unit 5	0-500	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Stockpile 5 – Unit 5	0-300	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Test Pit 11 – Unit 6	0-500	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Stockpile 6 – Unit 6	0-300	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Test Pit 12 – Unit7	0-500	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Stockpile 7 – Unit 7	0-300	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Test Pit 13 – Unit8	0-500	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
Stockpile 8 – Unit 8	0-300	1/08/2023	<25	<0.5	<1	<1	<1	<0.2
95%upper confidence Level			N/A	N/A	N/A	N/A	N/A	N/A
Residential A Health Based Levels (mg/kg)			**4400**	**14000**	**4500**	**12000**	**1400**	**100**

Table 6: TRH Vs HIL A Levels

Sample	Depth (mm)	Date Sampled	TRH C10-C16 (mg/kg)	TRH C16-C34 (mg/kg)	TRH C34-C40 (mg/kg)
Test Pit 1 – Unit 1	0-500	1/08/2023	<50	<100	<100
Stockpile 1 – Unit 1	0-300	1/08/2023	<50	<100	<100
Test Pit 2 – Unit 2	0-500	1/08/2023	<50	<100	<100
Stockpile 2 – Unit 2	0-300	1/08/2023	<50	<100	<100
Test Pit 3 – Unit 3	0-500	1/08/2023	<50	<100	<100
Stockpile 3 – Unit 3	0-300	1/08/2023	<50	<100	<100
Test Pit 4 – Unit 4	0-500	1/08/2023	<50	<100	<100
Stockpile 4 – Unit 4	0-300	1/08/2023	<50	<100	<100
Test Pit 5 – Rear Yard (SW)	0-500	1/08/2023	<50	<100	<100
Test Pit 6 – West End Driveway	0-500	1/08/2023	<50	<100	<100
Test Pit 7 – Centre Driveway	0-500	1/08/2023	<50	<100	<100
Test Pit 8 – East End Driveway	0-500	1/08/2023	<50	<100	<100
Test Pit 9 – Rear Yard (NW)	0-500	1/08/2023	<50	<100	<100
Test Pit 10 – Unit 5	0-500	1/08/2023	<50	<100	<100
Stockpile 5 – Unit 5	0-300	1/08/2023	<50	<100	<100
Test Pit 11 – Unit 6	0-500	1/08/2023	<50	<100	<100
Stockpile 6 – Unit 6	0-300	1/08/2023	<50	<100	<100
Test Pit 12 – Unit7	0-500	1/08/2023	<50	<100	<100
Stockpile 7 – Unit 7	0-300	1/08/2023	<50	<100	<100
Test Pit 13 – Unit8	0-500	1/08/2023	<50	<100	<100
Stockpile 8 – Unit 8	0-300	1/08/2023	<50	<100	<100
95%upper confidence Level			N/A	N/A	N/A
Residential A Health Based Levels (mg/kg)			**3300**	**4500**	**6300**

Accessing of the area can safely proceed. Backfilling of test pits and respreading of stockpiled soils can be undertaken.

Reported by:



Juliet Duffy MSM *Syd Uni*

Director, Occupational Hygienist

Asbestos Assessor Licence No: LAA 000 102

Appendix 1 – Soil Sampling Analysis Results– EnviroScience Solutions A29082-R1
Appendix 2 – Envirolab Certificate of Analysis 329589

LIMITATIONS

The clearance inspection was limited to areas that are outlined in this report. The following limitations also apply to cleared demolition sites and remediated contaminated areas.

1 To the extent permitted by law, EnviroScience Solutions Pty Ltd will not be responsible in tort, contract or otherwise for any loss or damage, including for any personal injuries or death, or any consequential loss, loss of markets and pure economic loss, suffered by the Customer, whether or not the loss or damage occurs in the course of performance by EnviroScience Solutions of this contract or in events which are in the contemplation of EnviroScience Solutions and/or the Customer or in events which are foreseeable by EnviroScience Solutions and/or the Customer.

2 To the extent that liability has not been effectively excluded by the preceding clause, then EnviroScience Solutions limits its liability to:

(a) The supply of services again; or

(b) The payment of the cost of supplying the services again, at the election of EnviroScience Solutions Pty Ltd.

EnviroScience SOLUTIONS

Protecting Health and the Environment Through Science

LABORATORY ANALYSIS REPORT
Asbestos Identification Report - Soil

Report No:	B29082-R1	**Report Date:**	Friday, 4 August 2023
Client:	NSW Land & Housing Corporation	**Analysed Date:**	Friday, 4 August 2023
Client Address:	Locked Bag 4001, Ashfield,NSW, 1800	**Laboratory Receival Date:**	Friday, 4 August 2023
		Sampled Date:	Tuesday, 1 August 2023
		Sampled by :	Sam Ramsey
Attention:	Gerald Alexander	**Approved Identifier and Signatory:**	Arpit Dabhi
Sampled From:	25-27 Boyd Street, Tweed Heads, NSW 2485		

Site Sample Method: A 10 litre soil sample was collected from each sampling point. The samples were sieved with a 7mm screen on site. The +7mm fraction of the samples was spread out and examined for pieces with a potential to contain asbestos. Any fragments of material suspected of containing asbestos were extracted, given a sample number and subjected to further analysis. A representative soil sample was then collected from the sieved sample, labelled and transported back to EnviroScience Solutions laboratory. The soil sample comprised a minimum of 500ml of soil and was contained in a labelled ziplock plastic bag.

Test Method: Polarised Light Microscopy (PLM) including Dispersion Staining (DS), EnviroScience Solutions in-house laboratory method, in accordance with Australian Standard AS4964-2004 'Method for the qualitative identification of asbestos in bulk samples'. Accredited for compliance with ISO/IEC:17025-Testing. At reporting Limit of 0.1g/kg.

Subsampling Soil Method: If required, the whole of the laboratory sample was dried. The -7mm fraction was sieved with a 2mm screen. The -7 to +2mm fraction of the sample was examined for pieces with a potential to contain asbestos using a stereo microscope. Any fragments of material suspected of containing asbestos were extracted and subjected to further analysis. As per ISO 3082:2009(E), a sub-sample approximately 30 to 60g of the -2mm fraction of the sample was created by coning and quartering. This sample was examined using a stereo microscope, any -2mm fragments of suspected asbestos material or asbestos fines were extracted for analysis. Trace analysis was carried out on the remainder of the sample to determine whether it contained respirable asbestos fibres at a level above the reporting limit of 0.1g/kg. Note that taking a sub-sample of the -2mm fraction means that the result may not be representative of the whole sample.

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Asbestos Identification Report - Soil

Report No: B29082-R1 **Report Date:** Friday, 4 August 2023

Client: NSW Land & Housing Corporation **Analysed Date:** Friday, 4 August 2023

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S1 835gm	SP1	Brown Soil	+7mm 401gm	Rock - 401 gm	Organic
			-7 +2mm 103gm	Nil	Organic
		Sub Sample	-2mm 58gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S2 811gm	TP1_0.0-0.5	Brown Soil	+7mm 282gm	Rock - 282 gm	Organic
			-7 +2mm 251gm	Nil	Organic
		Sub Sample	-2mm 54gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S3 713gm	SP2	Brown Soil	+7mm 148gm	Rock - 148 gm	Organic
			-7 +2mm 207gm	Nil	Organic
		Sub Sample	-2mm 59gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

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Asbestos Identification Report - Soil

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Client: NSW Land & Housing Corporation **Analysed Date:** Friday, 4 August 2023

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S4 845gm	TP2_0.0-0.5	Brown Soil	+7mm 313gm	Rock - 313 gm	Organic
			-7 +2mm 221gm	Nil	Organic
		Sub Sample	-2mm 64gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S5 758gm	SP3	Brown Soil	+7mm 153gm	Rock - 153 gm	Organic
			-7 +2mm 166gm	Nil	Organic
		Sub Sample	-2mm 57gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S6 423gm	TP3_0.0-0.5	Brown Soil	+7mm 147gm	Rock - 147 gm	Organic
			-7 +2mm 101gm	Nil	Organic
		Sub Sample	-2mm 54gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

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Report No: B29082-R1 **Report Date:** Friday, 4 August 2023

Client: NSW Land & Housing Corporation **Analysed Date:** Friday, 4 August 2023

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S7 603gm	SP4	Brown Soil	+7mm 227gm	Rock - 227 gm	Organic
			-7 +2mm 164gm	Nil	Organic
		Sub Sample	-2mm 54gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S8 730gm	TP4_0.0-0.5	Brown Soil	+7mm 297gm	Rock - 297 gm	Organic
			-7 +2mm 184gm	Nil	Organic
		Sub Sample	-2mm 57gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S9 749gm	TP5_0.0-0.9	Brown Soil	+7mm 266gm	Rock - 266 gm	Organic
			-7 +2mm 198gm	Nil	Organic
		Sub Sample	-2mm 61gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

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Asbestos Identification Report - Soil

Report No: B29082-R1 **Report Date:** Friday, 4 August 2023

Client: NSW Land & Housing Corporation **Analysed Date:** Friday, 4 August 2023

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S10 499gm	TP6_0.0-0.5	Brown Soil	+7mm 97gm	Rock - 97 gm	Organic
			-7 +2mm 183gm	Nil	Organic
		Sub Sample	-2mm 58gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S11 505gm	TP7_0.0-0.5	Brown Soil	+7mm 129gm	Rock - 129 gm	Organic
			-7 +2mm 204gm	Nil	Organic
		Sub Sample	-2mm 57gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S12 450gm	TP8_0.0-0.5	Brown Soil	+7mm 115gm	Rock - 115 gm	Organic
			-7 +2mm 107gm	Nil	Organic
		Sub Sample	-2mm 54gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

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Asbestos Identification Report - Soil

Report No: B29082-R1 **Report Date:** Friday, 4 August 2023

Client: NSW Land & Housing Corporation **Analysed Date:** Friday, 4 August 2023

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S13 582gm	TP9_0.0-0.5	Brown Soil	+7mm 246gm	Rock - 246 gm	Organic
			-7 +2mm 147gm	Nil	Organic
		Sub Sample	-2mm 60gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S14 667gm	SP5	Brown Soil	+7mm 292gm	Rock - 292 gm	Organic
			-7 +2mm 201gm	Nil	Organic
		Sub Sample	-2mm 59gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S15 626gm	TP10_0.0-0.5	Brown Soil	+7mm 306gm	Rock - 306 gm Nil	Organic
			-7 +2mm 65gm	Nil	Organic
		Sub Sample	-2mm 52gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

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Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S16 640gm	SP6	Brown Soil	+7mm 226gm	Rock - 226 gm	Organic
			-7 +2mm 187gm	Nil	Organic
		Sub Sample	-2mm 59gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S17 743gm	TP11_0.0-0.5	Brown Soil	+7mm 287gm	Rock - 287 gm	Organic
			-7 +2mm 251gm	Nil	Organic
		Sub Sample	-2mm 57gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S18 495gm	SP7	Brown Soil	+7mm 176gm	Rock - 176 gm	Organic
			-7 +2mm 98gm	Nil	Organic
		Sub Sample	-2mm 56gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

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Report No: B29082-R1 **Report Date:** Friday, 4 August 2023

Client: NSW Land & Housing Corporation **Analysed Date:** Friday, 4 August 2023

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S19 733gm	TP12_0.0-0.5	Brown Soil	+7mm 227gm	Rock - 227 gm	Organic
			-7 +2mm 222gm	Nil	Organic
		Sub Sample	-2mm 64gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S20 702gm	SP8	Brown Soil	+7mm 338gm	Rock - 338 gm	Organic
			-7 +2mm 163gm	Nil	Organic
		Sub Sample	-2mm 54gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

Sample No Weight	Sample Location	Sample Description	Fraction	Bulk Weight	Result.
29082-S21 773gm	TP13_0.0-0.5	Brown Soil	+7mm 299gm	Rock - 229 gm	Organic
			-7 +2mm 184gm	Nil	Organic
		Sub Sample	-2mm 52gm	Nil	Organic

Comment: No Respirable Asbestos Fibres above the reporting limit of 0.1gm/kg detected by trace analysis.

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CERTIFICATE OF ANALYSIS 329589

Client Details

Client	EnviroScience Solutions
Attention	Sam Ramsey
Address	PO Box 1645, Dubbo, NSW, 2830

Sample Details

Your Reference	**29082, 25-27 Boyd St, Tweed Heads**
Number of Samples	21 Soil
Date samples received	03/08/2023
Date completed instructions received	03/08/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	10/08/2023
Date of Issue	09/08/2023

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Dragana Tomas, Senior Chemist
Loren Bardwell, Development Chemist

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		329589-1	329589-2	329589-3	329589-4	329589-5
Your Reference	UNITS	TP1_0.0-0.5	SP1	TP2_0.0-0.05	SP2	TP3_0.0-0.5
Sample Location		House 1	House 1	House 2	House 2	House 3
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	87	89	92	90	90

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		329589-6	329589-7	329589-8	329589-9	329589-10
Your Reference	UNITS	SP3	TP4_0.0-0.5	SP4	TP5_0.0-0.9	TP6_0.0-0.5
Sample Location		House 3	House 4	House 4	Rear Yard 1	West End Driveway
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	87	86	83	88	88

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		329589-11	329589-12	329589-13	329589-14	329589-15
Your Reference	UNITS	TP7_0.0-0.5	TP8_0.0-0.5	TP9_0.0-0.5	TP10_0.0-0.5	SP5
Sample Location		Centre Driveway	East End Driveway	Rear Yard 2	House 5	House 5
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	88	87	88	89	90

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		329589-16	329589-17	329589-18	329589-19	329589-20
Your Reference	UNITS	TP11_0.0-0.5	SP6	TP12_0.0-0.5	SP7	TP13_0.0-0.5
Sample Location		House 6	House 6	House 7	House 7	House 8
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	87	91	99	96	97

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		329589-21
Your Reference	UNITS	SP8
Sample Location		House 8
Date Sampled		01/08/2023
Type of sample		Soil
Date extracted	-	04/08/2023
Date analysed	-	05/08/2023
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	91

svTRH (C10-C40) in Soil						
Our Reference		329589-1	329589-2	329589-3	329589-4	329589-5
Your Reference	UNITS	TP1_0.0-0.5	SP1	TP2_0.0-0.05	SP2	TP3_0.0-0.5
Sample Location		House 1	House 1	House 2	House 2	House 3
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	90	90	89	91	90

svTRH (C10-C40) in Soil						
Our Reference		329589-6	329589-7	329589-8	329589-9	329589-10
Your Reference	UNITS	SP3	TP4_0.0-0.5	SP4	TP5_0.0-0.9	TP6_0.0-0.5
Sample Location		House 3	House 4	House 4	Rear Yard 1	West End Driveway
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	89	91	91	89	89

svTRH (C10-C40) in Soil						
Our Reference		329589-11	329589-12	329589-13	329589-14	329589-15
Your Reference	UNITS	TP7_0.0-0.5	TP8_0.0-0.5	TP9_0.0-0.5	TP10_0.0-0.5	SP5
Sample Location		Centre Driveway	East End Driveway	Rear Yard 2	House 5	House 5
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	91	94	100	125	87

svTRH (C10-C40) in Soil						
Our Reference		329589-16	329589-17	329589-18	329589-19	329589-20
Your Reference	UNITS	TP11_0.0-0.5	SP6	TP12_0.0-0.5	SP7	TP13_0.0-0.5
Sample Location		House 6	House 6	House 7	House 7	House 8
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	94	107	80	87	90

svTRH (C10-C40) in Soil		
Our Reference		329589-21
Your Reference	UNITS	SP8
Sample Location		House 8
Date Sampled		01/08/2023
Type of sample		Soil
Date extracted	-	04/08/2023
Date analysed	-	05/08/2023
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
Total +ve TRH (C10-C36)	mg/kg	<50
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	90

Acid Extractable metals in soil						
Our Reference		329589-1	329589-2	329589-3	329589-4	329589-5
Your Reference	UNITS	TP1_0.0-0.5	SP1	TP2_0.0-0.05	SP2	TP3_0.0-0.5
Sample Location		House 1	House 1	House 2	House 2	House 3
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	07/08/2023	07/08/2023	07/08/2023	07/08/2023	07/08/2023
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	2	2	2	2	<1
Copper	mg/kg	13	8	30	<1	4
Lead	mg/kg	55	19	33	2	23
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	1	6	<1	<1
Zinc	mg/kg	92	34	58	8	48

Acid Extractable metals in soil						
Our Reference		329589-6	329589-7	329589-8	329589-9	329589-10
Your Reference	UNITS	SP3	TP4_0.0-0.5	SP4	TP5_0.0-0.9	TP6_0.0-0.5
Sample Location		House 3	House 4	House 4	Rear Yard 1	West End Driveway
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	07/08/2023	07/08/2023	07/08/2023	07/08/2023	07/08/2023
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	1	4	2	2	<1
Copper	mg/kg	2	8	2	13	4
Lead	mg/kg	6	27	13	36	2
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	2	<1	2	<1
Zinc	mg/kg	16	100	29	63	17

Acid Extractable metals in soil						
Our Reference		329589-11	329589-12	329589-13	329589-14	329589-15
Your Reference	UNITS	TP7_0.0-0.5	TP8_0.0-0.5	TP9_0.0-0.5	TP10_0.0-0.5	SP5
Sample Location		Centre Driveway	East End Driveway	Rear Yard 2	House 5	House 5
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	07/08/2023	07/08/2023	07/08/2023	07/08/2023	07/08/2023
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	1	<1	41	2	2
Copper	mg/kg	8	1	28	15	8
Lead	mg/kg	26	5	240	49	83
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	4	2	1
Zinc	mg/kg	96	13	130	130	85

Acid Extractable metals in soil						
Our Reference		329589-16	329589-17	329589-18	329589-19	329589-20
Your Reference	UNITS	TP11_0.0-0.5	SP6	TP12_0.0-0.5	SP7	TP13_0.0-0.5
Sample Location		House 6	House 6	House 7	House 7	House 8
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	07/08/2023	07/08/2023	07/08/2023	07/08/2023	07/08/2023
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	1	2	3	2	1
Copper	mg/kg	25	3	14	11	8
Lead	mg/kg	16	14	62	18	20
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	<1	3	<1	1
Zinc	mg/kg	54	12	100	28	30

Acid Extractable metals in soil			
Our Reference		329589-21	329589-22
Your Reference	UNITS	SP8	SP8 - [TRIPLICATE]
Sample Location		House 8	House 8
Date Sampled		01/08/2023	01/08/2023
Type of sample		Soil	Soil
Date prepared	-	04/08/2023	04/08/2023
Date analysed	-	07/08/2023	07/08/2023
Arsenic	mg/kg	4	8
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	2	2
Copper	mg/kg	42	74
Lead	mg/kg	28	24
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	10	15
Zinc	mg/kg	50	61

Moisture						
Our Reference		329589-1	329589-2	329589-3	329589-4	329589-5
Your Reference	UNITS	TP1_0.0-0.5	SP1	TP2_0.0-0.05	SP2	TP3_0.0-0.5
Sample Location		House 1	House 1	House 2	House 2	House 3
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	07/08/2023	07/08/2023	07/08/2023	07/08/2023	07/08/2023
Moisture	%	8.2	5.2	6.7	1.8	3.2

Moisture						
Our Reference		329589-6	329589-7	329589-8	329589-9	329589-10
Your Reference	UNITS	SP3	TP4_0.0-0.5	SP4	TP5_0.0-0.9	TP6_0.0-0.5
Sample Location		House 3	House 4	House 4	Rear Yard 1	West End Driveway
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	07/08/2023	07/08/2023	07/08/2023	07/08/2023	07/08/2023
Moisture	%	1.7	4.5	2.1	7.8	6.6

Moisture						
Our Reference		329589-11	329589-12	329589-13	329589-14	329589-15
Your Reference	UNITS	TP7_0.0-0.5	TP8_0.0-0.5	TP9_0.0-0.5	TP10_0.0-0.5	SP5
Sample Location		Centre Driveway	East End Driveway	Rear Yard 2	House 5	House 5
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	07/08/2023	07/08/2023	07/08/2023	07/08/2023	07/08/2023
Moisture	%	4.5	5.5	6.5	7.6	4.4

Moisture						
Our Reference		329589-16	329589-17	329589-18	329589-19	329589-20
Your Reference	UNITS	TP11_0.0-0.5	SP6	TP12_0.0-0.5	SP7	TP13_0.0-0.5
Sample Location		House 6	House 6	House 7	House 7	House 8
Date Sampled		01/08/2023	01/08/2023	01/08/2023	01/08/2023	01/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Date analysed	-	07/08/2023	07/08/2023	07/08/2023	07/08/2023	07/08/2023
Moisture	%	8.0	4.0	7.2	7.5	3.4

Moisture		
Our Reference		329589-21
Your Reference	UNITS	SP8
Sample Location		House 8
Date Sampled		01/08/2023
Type of sample		Soil
Date prepared	-	04/08/2023
Date analysed	-	07/08/2023
Moisture	%	8.8

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	329589-2
Date extracted	-			04/08/2023	1	04/08/2023	04/08/2023		04/08/2023	04/08/2023
Date analysed	-			05/08/2023	1	05/08/2023	05/08/2023		05/08/2023	05/08/2023
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	124	127
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	124	127
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	117	119
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	117	119
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	119	121
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	133	137
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	133	136
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	92	1	87	89	2	91	85

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date extracted	-			[NT]	11	04/08/2023	04/08/2023		04/08/2023	[NT]
Date analysed	-			[NT]	11	05/08/2023	05/08/2023		05/08/2023	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	11	<25	<25	0	90	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	11	<25	<25	0	90	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	11	<0.2	<0.2	0	83	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	11	<0.5	<0.5	0	86	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	86	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	11	<2	<2	0	98	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	97	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	11	88	92	4	80	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	04/08/2023	04/08/2023		[NT]	[NT]
Date analysed	-			[NT]	21	05/08/2023	05/08/2023		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	21	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	21	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	21	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	21	91	93	2	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	329589-2
Date extracted	-			04/08/2023	1	04/08/2023	04/08/2023		04/08/2023	04/08/2023
Date analysed	-			05/08/2023	1	05/08/2023	05/08/2023		05/08/2023	05/08/2023
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	111	103
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	114	108
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	100
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	111	103
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	<100	<100	0	114	108
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	100
Surrogate o-Terphenyl	%		Org-020	90	1	90	89	1	86	96

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date extracted	-			[NT]	11	04/08/2023	04/08/2023		04/08/2023	[NT]
Date analysed	-			[NT]	11	05/08/2023	05/08/2023		05/08/2023	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	11	<50	<50	0	113	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	119	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	100	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	11	<50	<50	0	113	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	119	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	100	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	11	91	92	1	90	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	04/08/2023	04/08/2023		[NT]	[NT]
Date analysed	-			[NT]	21	05/08/2023	05/08/2023		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	21	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	21	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	21	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	21	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	21	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	21	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	21	90	88	2	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	329589-2
Date prepared	-			04/08/2023	1	04/08/2023	04/08/2023		04/08/2023	04/08/2023
Date analysed	-			07/08/2023	1	07/08/2023	07/08/2023		07/08/2023	07/08/2023
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	112	109
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	116	107
Chromium	mg/kg	1	Metals-020	<1	1	2	2	0	125	114
Copper	mg/kg	1	Metals-020	<1	1	13	11	17	117	117
Lead	mg/kg	1	Metals-020	<1	1	55	65	17	123	111
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	113	105
Nickel	mg/kg	1	Metals-020	<1	1	2	1	67	112	105
Zinc	mg/kg	1	Metals-020	<1	1	92	110	18	117	101

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date prepared	-			[NT]	11	04/08/2023	04/08/2023		04/08/2023	[NT]
Date analysed	-			[NT]	11	07/08/2023	07/08/2023		07/08/2023	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	11	<4	<4	0	112	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	11	<0.4	<0.4	0	113	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	11	1	1	0	121	[NT]
Copper	mg/kg	1	Metals-020	[NT]	11	8	5	46	116	[NT]
Lead	mg/kg	1	Metals-020	[NT]	11	26	24	8	122	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	11	<0.1	<0.1	0	114	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	11	<1	<1	0	112	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	11	96	67	36	116	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	21	04/08/2023	04/08/2023		[NT]	[NT]
Date analysed	-			[NT]	21	07/08/2023	07/08/2023		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	21	4	4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	21	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	21	2	2	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	21	42	34	21	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	21	28	14	67	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	21	10	5	67	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	21	50	40	22	[NT]	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Acid Extractable Metals in Soil:
- The laboratory RPD acceptance criteria has been exceeded for 329589-21 for Pb and Ni. Therefore a triplicate result has been issued as laboratory sample number 329589-22.