CCL Development Pty Ltd

Site Remediation and Validation Report Highland Views: Stage 4, Glenmore Park NSW

Purpose:

To undertake a validation assessment following the remediation of asbestos impacted fill soils at the site.

Prepared for:

Jason Stephenson

Document Date:

April 2020

Reference:

S-00573.SRVR.001 / C0009

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DEVELOPMENT & PROJECT MANAGEMENT SERVICES

DOCUMENT CONTROL

Project Details:	
Report Name:	Site Remediation and Validation Report
Client Name:	CCL Development Pty Ltd
Reference:	S-00573.SVA.001 / C0009

Revision No.:	Revision date:	Author:	Reviewer:	Approver:	Reason for Issue:
V1	26/04/2020	Lochlan Browne	Ryan Jacka	Ryan Jacka	First issue to client

Sign Off:		
Author:	Reviewer:	Approver:
[redacted]		
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STATEMENT OF LIMITATIONS

This document has been prepared in response to specific instructions from the Client to whom the report has been addressed (Client). The work has been undertaken with the usual care and thoroughness of the consulting profession. The work is based on generally accepted standards and practices of the time the work was undertaken. No other warranty, expressed or implied, is made as to the professional advice included in this report.

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EDP is not a professional quantity surveyor (QS) organisation. Any areas, volumes, tonnages or any other quantities noted in this report are estimates only. The services of a professional QS organisation should be engaged if quantities are to be relied upon.

Sampling Risks

The Client acknowledges that any scientifically designed sampling program cannot guarantee all subsurface contamination will be detected. Sampling programs are designed based on known or suspected site conditions and the extent and nature of the sampling and analytical programs will be designed to achieve a level of confidence in the detection of known or suspected subsurface contamination. The sampling and analytical programs adopted by EDP will be those that reasonably maximise the probability of identifying contaminants. The client must therefore accept a level of risk associated with the possible failure to detect certain subsurface contamination where the sampling and analytical program misses such contamination. EDP will detail the nature and extent of the sampling and analytical program used in the investigation in the investigation report provided.

Environmental site assessments identify actual subsurface conditions only at those points where samples are taken and when they are taken. Soil contamination can be expected to be non-homogeneous across the stratified soils where present on site, and the concentrations of contaminants may vary significantly within areas where contamination has occurred. In addition, the migration of contaminants through groundwater and soils may follow preferential pathways, such as areas of higher permeability, which may not be intersected by sampling events. Subsurface conditions including contaminant concentrations can also change over time. For this reason, the results should be regarded as representative only.

The client recognises that sampling of subsurface conditions may result in some cross contamination. All care will be taken and industry standards used to minimise the risk of such cross contamination occurring, however, the client recognises this risk and waives any claims against EDP and agrees to defend, indemnify and hold EDP harmless from any claims or liability for injury or loss which may arise as a result of alleged cross contamination caused by sampling.

Reliance on Information Provided by Others

EDP notes that where information has been provided by other parties in order for the works to be undertaken, EDP cannot guarantee the accuracy or completeness of this information. The Client waives any claim against the company and agrees to indemnify EDP for any loss, claim or liability arising from inaccuracies or omissions in information provided to EDP by third parties. No indications were found during our investigations that information contained in this report, as provided to EDP, is false.

Recommendations for Further Study

The industry recognised methods used in undertaking the works may dictate a staged approach to specific investigations. The findings therefore of this report may represent preliminary findings in accordance with these industry recognised methodologies. In accordance with these methodologies, recommendations contained in this report may include a need for further investigation or analytical analysis. The decision to accept these recommendations and incur additional costs in doing so will be at the sole discretion of the Client and EDP recognises that that the Client will consider their specific needs and the business risks involved. EDP does not accept any liability for losses incurred as a result of the Client not accepting the recommendations made within this report.

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EXECUTIVE SUMMARY

CCL Development Pty Ltd (CCL) engaged EDP Consultants Pty Ltd (EDP) to undertake a site remediation and validation assessment (validation assessment) of the remedial works conducted for Stage 4 of the Highland Views Development in Glenmore Park NSW (the site). The validation assessment was conducted throughout the remediation of asbestos-impacted fill soils at the site. Remedial works included excavation, mechanical treatment and in-situ containment of impacted materials.

The legal description of the site is Lot 333 in Deposited Plan (DP) 1243735 and the total land area is approximately 6.5 ha.

Objective

The objectives of this validation assessment were to:

- Ensure that remediation procedure has been appropriately implemented in accordance with the RAP prepared by SESL;
- Detail the inspection and sampling undertaken as part of the validation works conducted at the site;
- Indicate the level of residual contaminants within the asbestos-impacted fill soils so that future environmental management plans can be developed;
- Facilitate the offsite disposal of material where required;
- Detail the findings of the validation assessment conducted at the site;
- Comment on the suitability of the site for the proposed land use following the completion of the remediation works; and
- Recommend further investigations or management strategies for the site, if required.
- This SRVR was undertaken in accordance with SEPP 55 – Remediation of Land and the NSW EPA Guidelines for Consultants Reporting on Contaminated Sites 2011. The site was validated in accordance with National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 2013.

Remediation Methodology

The objective of the remediation was to treat the known contamination, ensuring that the site is suitable for the proposed use in accordance with the remediation acceptance criteria and relevant regulatory guidelines. Remediation included the excavation and separation of known contamination, treatment and screening of visible contamination and encapsulation of residual contaminated materials.

Validation Assessment

Remediation works were undertaken at the site in accordance with the RAP prepared for the site (SESL, 2018). Throughout the redial works, validation assessment was undertaken to ensure appropriate implementation of the remediation design, as detailed throughout this report. Visual inspection, photographic log and analytical results show that the risks posed by the identified contaminants of potential concern have been mitigated through the remediation.

Conclusion

EDP considers that through the remediation process, the identified contaminants of potential concern have been appropriately treated, encapsulated or removed from the site, and the risks associated with the contamination to be mitigated.

EDP considers the site suitable for the proposed land use (low density residential land use) and continuation of the proposed residential subdivision. Prior to the completion of the subdivision, a long-term environmental management plan (LTEMP) will need to be developed and recorded against the title associated with the road corridor.

1. INTRODUCTION

CCL Development Pty Ltd (CCL) engaged EDP Consultants Pty Ltd (EDP) to undertake a site remediation and validation assessment (validation assessment) of the remedial works conducted for Stage 4 of the Highland Views Development in Glenmore Park NSW (the site). The validation assessment was conducted throughout the remediation of asbestos-impacted fill soils at the site. Remedial works included excavation, mechanical treatment and in-situ containment of impacted materials.

The legal description of the site is Lot 333 in Deposited Plan (DP) 1243735 and the total land area is approximately 6.5 ha. The location of the site is shown in **Figure 1** provided in **Appendix A**.

2. BACKGROUND

2.1 Project Appreciation

CCL was engaged on behalf of Vianello Holdings Pty Ltd (Vianello) as the project manager for 'Highland Views development which involves the conversion of approximately 23 hectares into residential estate in nine stages. The remediation, as detailed below, is summarised as the bulk excavation of VENM material for the creation of a containment cell, and placement of asbestos-impacted fill material within this created cell, following processing for geotechnical purposes.

2.2 Previous Investigations

2.2.1 Preliminary Site Investigation with limited sampling (Geotechnique, December 2015)

A preliminary site investigation (PSI) with limited sampling was conducted by Geotechnique December 2015 for the site encompassing the Highland Views development (Preliminary Contamination Assessment with Limited Sampling December 2015, Report No. 13602/1-AA). The primary areas of environmental concern (AEC) identified by Geotechnique were limited to the potential historical use of pesticides at the site. As part of this PSI, five (5) test pits were constructed within the Stage 4 area. Samples collected from the five test pits were composited and analysed for a limited contamination suite, which included 8 heavy metals and organochlorine pesticides (OCP). The analytical results were compared to the assessment criteria adopted for the proposed development, including the Health Investigation Level – Residential A criteria adopted from National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999 (NEPC, 2013), Ecological Investigation Levels for Urban Residential areas adopted from NEPM (NEPC, 2013) and phytotoxicity criteria. All samples collected as part of this PSI from within the Stage 4 were observed to be below the adopted assessment criteria. No organochlorine pesticides were detected across the investigation area. As such, it was concluded that the potential for contamination at the site as a result of the historical use of agricultural chemicals was low.

2.2.1 Preliminary Conceptual Site Model (SESL Australia, 2018)

A preliminary conceptual site model (CSM) was developed by SESL Australia Pty Ltd (SESL) for Stages 4-9 of the Highland Views development site, based on the information obtained prior to the detailed site investigation (DSI), including desktop review, site walkover and review of the PSI (2015) prepared for the site. The CSM was limited to assessing the Stage 4 area with regards to the potential sources of impact, chemicals of concern, transport mechanism and receptors present.

This review of information prior to the DSI identified the following potential Areas of Environmental Concern (AEC) within the Stage 4 area:

- AEC 1: Surface soils impacted by former agricultural chemical use;
- AEC 2: Discarded vehicles and other scrap materials (waste drums) impacting surface soils; and
- AEC 3: Fill of unknown origin around dams and infilled gully.

2.2.2 Detailed Site Investigation (SESL, July 2018)

A Detailed Site Investigation (DSI) for Stages 4 to 9 of the Highland Views development was prepared by SESL (J679 Highland Views Stage 4-9 DSI March 2018 0.3) in March 2018 and updated in July 2018 (J001039 Highland Views Stage 4-9 DSI July 2018 2.0). A total of 29 test pits were constructed within the Stage 4 area and 23 representative samples collected.

The DSI was limited to visual inspection and intrusive soil sampling to assess the AECs as identified in section 2.2.1. In samples collected to assess AEC 1, OCP or OPP compounds were determined to be below the laboratory detection limit. Additionally, low levels of metals were identified in all samples, indicating the potential for contamination from former use of agricultural chemicals was low. All results from samples collected and analysed to assess AEC 1 were below the Health Investigation Level – Residential A criteria adopted from NEPM (NEPC, 2013).

Of the samples collected to investigate AEC 2, a single (1) sample contained elevated total chromium concentrations. Further analysis to determine the chromium species (trivalent or hexavalent) did not identify issues with total or hexavalent chromium (contaminants of concern). A single (1) sample collected to assess AEC 2 had elevated lead concentrations. All analytes within AEC 2 samples were below the adopted HIL A criteria.

Samples to assess AEC 3 were collected from fill materials in the gully area as identified in the CSM. Asbestos containing materials were visually identified throughout fill materials and detected with six (6) samples analysed. The presence of asbestos is above the Health Screening Level – Residential A criteria adopted from NEPM (NEPC,2013). The samples collected from fill material around the dams contained low levels of metals with all other analytes below the detection limit.

The findings of the DSI applicable to the Stage 4 area identified the only area of environmental concern was the presence of asbestos impacted fill material in the gully area on the eastern boundary of Stage 4 and the physical waste materials on the surface (discarded vehicles, building and farm waste, scrap metal). Physical waste was limited to the eastern boundary of stage 4, predominately overlying asbestos impacted fill materials.

2.2.3 Remediation Action Plan (SESL, July 2018)

A Remedial Action Plan (RAP) was prepared by SESL in July 2018 (J001046 Highland Views Stage 4 RAP July 2018 2.0) which identified the remediation requirements to ensure the site was suitable for the proposed residential use. The RAP presented five remediation options, with the preferred option involving the combination of onsite treatment, onsite management of treated materials and excavation and disposal of foreign materials and the bulk of asbestos containing materials.

Onsite treatment includes the mechanical screening of impacted fill materials to remove the bulk of asbestos containing materials and foreign materials. The removal of majority of asbestos containing materials would reduce the risk the materials pose to human health. The removal of foreign material will allow the soil material to be compacted and reused on site as part of the onsite management.

Following the onsite treatment of impacted fill material, treated material is to be managed onsite by encapsulation in constructed containment area to be located under a proposed site road. The cell will not be accessible to site users and will be managed under a long term EMP, should validation results indicate contaminant levels above the site acceptance criteria. Asbestos containing materials and foreign materials separated out from soil during onsite treatment will be disposed of offsite to a facility licensed to accept the material.

Physical waste materials present outside of the impacted fill material footprint can be removed via excavation or handpicking and will be disposed of offsite to a licensed facility.

This remedial option was selected based on the following:

- The requirement to manage unacceptable health risks posed to current and future site users;
- The immobile nature of the identified soil contamination at the site;
- The requirements of key stakeholders for the future use of the site; and
- The extensive costs associated with the disposal of contaminated soils.

3. OBJECTIVES

This report is specific to the remediation and validation procedures undertaken within Stage 4 of the Highland Views Development in Glenmore Park NSW.

The objectives of this validation assessment were to:

- Ensure that remediation procedure has been appropriately implemented in accordance with the RAP prepared by SESL;
- Detail the inspection and sampling undertaken as part of the validation works conducted at the site;
- Indicate the level of residual contaminants within the asbestos-impacted fill soils so that future environmental management plans can be developed;
- Facilitate the offsite disposal of material where required;
- Detail the findings of the validation assessment conducted at the site;
- Comment on the suitability of the site for the proposed land use following the completion of the remediation works; and
- Recommend further investigations or management strategies for the site, if required.

This SRVR was undertaken in accordance with SEPP 55 – Remediation of Land and the NSW EPA Guidelines for Consultants Reporting on Contaminated Sites 2011. The site was validated in accordance with National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 2013.

4. SCOPE OF WORKS

To complete the objectives, EDP undertook the following:

- Fieldwork preliminaries comprising updating the existing Safe Work Method Statement (SWMS);
- Review of supplied previous environmental investigations pertaining to the site;
- Liaison with the remediation contractor, EnviroManage Systems Pty Ltd (EMS);
- Undertake airborne asbestos fibre monitoring during all works involving the handling of asbestos-contaminated materials;
- Routine visual assessment and supervision throughout remediation works, including:
    - Inspection of primary remediation areas:
    - Inspection of secondary remediation areas;
    - Collection of soil samples from regions of residual soil impacted by the former foreign materials on the site;
    - Collection of soil samples from the stockpiled asbestos-impacted fill material prior to being deposited into containment cell;
    - Inspection of the containment cell at various critical points throughout the remediation; and
    - Sampling and analysis for waste classification purposes for wastes identified for offsite disposal.
- Laboratory analysis of soil validation samples for contaminants of potential concern (CoPC) at a NATA accredited laboratory;
- Preparation of waste classification certificates for soils to facilitate offsite disposal; and
- Provision of this validation report.

5. TECHNICAL FRAMEWORK

Works were undertaken in general accordance with the following:

- *NSW Work Health and Safety Act 2011*;
- *NSW Work Health and Safety Regulation 2017*;
- *Contaminated Land Management (CLM) Act 1997*;

- *CLM Amendment Act 2008*;
- NSW Environment Protection Agency (EPA) *Protection of the Environment Operations (POEO) Act 1997*;
- NSW EPA *Protection of the Environment Operations (Waste) Regulation 2014*;
- NSW EPA *State Environmental Planning Policy 55 – Remediation of Land (SEPP55) 1998*;
- National Environment Protection Council, *National Environment Protection (Assessment of Site Contamination) Measure*, 1999 (April 2013) (NEPM 2013);
- NSW EPA *Waste Classification Guidelines: Part 1 – Classifying Waste*, 2014 (NSW Waste Classification Guidelines);
- NSW Office of Environment and Heritage, *Contaminated Sites Guidelines for Consultants Reporting on Contaminated Sites*, 2011;
- Western Australian Department of Health (DOH), Guidelines for the Assessment and Management of Asbestos-Contaminated Sites in Western Australia, May 2009 (DOH 2009); and
- Australian Standard (AS) 4964-2004, Method for the qualitative identification of asbestos in bulk samples, 2004.

6. SITE SETTING

6.1 Site Identification

Site identification details are summarised in **Table 1** and the location of the site is shown on **Figure 1**, provided in **Appendix A**.

Table 1: Site Identification Details

Site Identification:	
Site Address:	Stage 4 Development Site, Highland Views, Glenmore Park NSW
Legal Identification:	Lot 333 in Deposited Plan 1243735
Local Government Authority:	Penrith City Council
Current Zoning:	R1 General Residential
Owner:	[redacted]
Current and Historical Land Use:	The site was historically a rural area used for grazing and is currently undergoing development for the construction of low-density residential properties
Total Land Area:	Approximately 6.5 ha

6.2 Surrounding Land Use

The surrounding land consists of recently constructed low-density residential properties to the north with grazing paddocks to the south, east and west. A rural residential property is located to the south-east of the site.

6.3 Site Description

The site was former agricultural land with contaminated materials contained within a drainage gully proposed for remediation. The site underwent extensive remediation activities during the remediation program, involving the excavation and sorting of excavated materials from the gully, processing for geotechnical suitability on a treatment pad, excavation of VENM materials for the construction of a containment cell, placement of waste materials into the cell, covering with geofabric and capping soils.

Photographs taken throughout remediation are provided in **Appendix B**.

6.4 Topography

The site topography was observed to be relatively undulating with a general slope in a south-easterly direction, towards the remnant creek on the eastern boundary. and has an elevation of between 70 – 90 metres (m) Australian Height Datum (AHD). Surface water flows across the site are expected to be influenced by localised depressions across the undulating surface and flows across the surrounding areas are expected to drain into the remnant creek bed on the eastern boundary of the site.

6.5 Surface and Groundwater

Two dams were observed during the site assessment; both of which were dry at the time of assessment. These dams were removed during the remediation works. Surface flows across the site are expected to flow into the dams and via swales through the undulating site. Surveyor's Creek is the nearest drainage channel, located within 100 m from the eastern boundary of the site

6.6 Regional Geology

The *Soil Landscapes map of Penrith 1:100,000 Sheet* (Bannerman and Hazelton 1989) indicates the site is within the Luddenham Soil Landscape group, characterised by erosional soils with undulating to rolling low hills on Wianamatta Group Ashfield and Bringelly Shales and/or Minchinbury Sandstone. Typical soil profiles on some areas of the slop include hardsetting brown clay loams overlying whole coloured strongly pedal clays.

The above description is consistent with site observations of natural soil profiles including areas underlying fill materials.

6.7 Acid Sulfate Soils

A review of Acid Sulfate Soil information contained within the online Australian Soil Resource Information System (ASRIS) database (http://www.asris.csiro.au/index_ie.html), accessed on 17 March 2020, indicated there was an extremely low probability of acid sulfate soils occurring beneath the site.

7. REMEDIATION

7.1 Remediation Objective

The objective of the remediation was to treat the know contamination, ensuring that the site is suitable for the proposed use in accordance with the remediation acceptance criteria and relevant regulatory guidelines. Remediation included the excavation and separation of known contamination, treatment and screening of visible contamination and encapsulation of residual contaminated materials. Remediation methodologies are detailed in Section 7.4.

7.2 Remediation Environmental Controls

The remediation of the site was carried out in a manner that does not harm or degrade the environment (both on-site and off-site). To ensure this, site specific environmental controls were adhered to throughout the remediation process, as detailed in the RAP (SESL 2018). The following aspects of the project adhered to strict environmental controls throughout the remedial works:

- Work procedures;
- Control of fugitive emissions;
- Dust control measures;
- Erosion, sediment and surface water management;
- Equipment cleaning and operation; and
- Stockpile management.

7.3 Air Monitoring and Asbestos Controls

Based on the known asbestos contamination, air quality monitoring and other asbestos controls were adhered to throughout the remediation process.

7.3.1 Air Monitoring

EDP conducted daily airborne asbestos fibre monitoring (air monitoring) around the work areas throughout the remediation and removal works. Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

All results for air monitoring conducted were below the reporting limit (<0.01 fibres/mL). The air monitoring was conducted in accordance with EDP's NATA Australia accredited test method EDPLMS-03, with reference to the National Occupational Health and Safety Commission, Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC:3003(2005)] and ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories.

Air monitoring certificates were issued daily as part of the remediation works and have been provided in **Appendix F.**

7.3.2 Personal Protective Equipment (PPE)

Appropriate personal protective equipment was used by all personnel present within the remediation area. PPE was required to mitigate the potential risks associated with the identified contaminants of concern (asbestos). PPE included:

- Disposable coveralls (type 5, category 3);
- Steel cap boots;
- Disposable nitrile gloves;
- Disposable facemask (P2); and
- Safety glasses.

7.3.3 Stockpile Management

Throughout the remedial works, all stockpiled materials were considered to be asbestos containing, and were managed as such. All precautions were taken to prevent/reduce dust generation, including:

- Minimisation of stockpile movement as far as practice;
- Spraying of water to supress dust during material movement/loading;
- Covering of stockpiles with plastic when they were left undisturbed; and
- Asbestos air quality monitoring throughout remedial works.

7.4 Remediation Methodology

The adopted remediation methodology included a combination of on-site treatment, on-site encapsulation and off-site disposal.

7.4.1 Surface Foreign Material Removal

Emu picking was undertaken to remove surface visible asbestos-containing materials and other foreign materials. The following methodology was used:

- Large surface foreign materials including car bodies, metal sheeting and miscellaneous wastes were removed by the remediation contractor.
- Removal of the shallow topsoil was undertaken to remove all small foreign materials and asbestos and excavated materials were placed into controlled stockpiles in the stockpiling area for further processing.

- A site walkover was conducted by an EDP Environmental Consultant, during which a grid-pattern is used to identify, collect and dispose of any residual visible asbestos-containing materials and other foreign materials.
- Emu-picking was conducted within the grid until three complete, sequential passes were made without finding any materials prior to continuing.
- Foreign materials were separated for future encapsulation or disposed of to a licensed facility.

7.4.2 *Excavation and Stockpiling (Contamination)*

Excavation and stockpiling of known contamination occurred prior to treatment and offsite disposal/encapsulation. The following methodology was used:

- The remediation area was established, including the excavation area stockpiling area. Five (5) separate stockpiling areas were established for the variable materials that were expected to be encountered throughout the remedial works. Stockpiling areas included:
  - SP01: Oversized asbestos-containing material requiring offsite disposal (E.g. corrugated cement sheeting).
  - SP02: Soil material impacted with significant anthropogenic material or ACM contamination.
  - SP03: Soil material impacted with minor anthropogenic material or ACM contamination.
  - SP04: Oversized non asbestos-containing materials (car bodies, concrete slabs and metal sheeting).
  - SP05: Non asbestos-containing general rubbish.
- Excavation of known contaminated materials occurred until underlying natural materials were encountered (to an approximate depth of 2 mbgl) in accordance with the RAP (SESL, 2018).
- Excavated contaminated and foreign materials were stockpiled within with stockpiling area. Materials were separated into the appropriate stockpiles, as detailed above.

7.4.3 *Stockpile Treatment*

Stockpiles were treated in accordance with the RAP (SESL, 2018). Stockpile treatment was undertaken to minimise the quantity of material requiring offsite disposal and ensure the geotechnical suitability of the materials to be placed in the containment cell. Treatment included:

- Mechanical screening of SP02 & SP03 to removed oversized (>300 mm) foreign materials and ACM;
- Emu picking of visible asbestos-containing materials, plastic, timber and metal from screened soil material;
- Mechanical pulverisation of oversized non asbestos-containing materials (i.e. brick and concrete) to allow for incorporation into screened materials and subsequent onsite containment.

7.4.4 *Excavation and Stockpiling (VENM) and Containment Cell Construction*

The excavation of site-won Virgin Excavated Natural Materials (VENM) was undertaken as part of the earthworks required for the project and the construction of the contaminant containment cell. The following methodology was used:

- Excavation of approximately 3,000 m^3 of in-situ VENM. VENM materials were identified and classified in accordance with the Virgin Excavated Natural Material Assessment – Highland Views: Stage 4, Glenmore Park NSW, prepared by EDP, (S-00573.VENM.001_202002, March 2020).
- VENM materials were identified as Orange/brown CLAY, very stiff, dry, low plasticity with inclusions of rootlets and underlain by light brown to light grey/white sandstone and laminated shale with some mudstone boulders.
- The containment cell was constructed within the designated containment area, and benched in increments of 1.5 m to a final depth of 7mbgl (as shown in **Appendix I**, and in **Appendix B: Photo 11**). Excavated VENM was stockpiled separately from contaminated materials for later reuse as capping materials.

7.4.5 *Contaminant Encapsulation*

Excavated and treated materials that were considered geotechnically suitable for on-site encapsulation were deposited within the contaminant containment cell, in accordance with the RAP (SESL, 2018). The following methodology was used:

- Deposition of suitable foreign materials and contaminated/potentially contaminated soils into the containment cell.
- A surface scrape and emu pick of minor contamination and anthropogenic material was conducted from soils within the stockpiling area and placed within the cell.
- Mechanical compaction of deposited material within the containment area was undertaken in order to achieve a minimum of 95% compaction, as per engineer guidance.
- A permeable geo-textile marker layer was installed atop the contaminated materials within the containment cell following the completion of the deposition of the subject materials. During installation, pegs were used to hold the fabric in the correct position. Where sheets of the fabric overlap, a 30 cm overlap was used to ensure no gabs in the coverage of the layer.
- Following the installation of the marker layer, the containment cell was capped with site-won VENM materials excavated from the site. VENM materials were installed at a thickness of no less than 500 mm.

7.4.6 *Waste Classification and Offsite Disposal*

Oversize foreign materials and heavily contaminated soils that were considered unsuitable for on-site encapsulation were disposed of offsite to an appropriately licenced facility in accordance with appropriate regulatory guidelines.

Soil materials proposed for offsite disposal were assessed by EDP 19th March 2020. Assessment details are provided in Waste Classification of Stockpiled Material – Highland Views: Stage 4, Glenmore Park NSW (S-00573.WCC.003 / C0009) (Appendix J). Materials were described as brown sandy clay, dry and firm with rootlets, bricks and fibre cement sheeting debris. The subject materials had an estimated volume of 4 m^3.

Based on a visual inspection, assessment of analytical results and subject to the limitations of the investigation, the stockpiled soil material proposed for offsite disposal were classified as Special Waste (Asbestos Waste) – General Solid Waste (non-putrescible) in accordance with the NSW EPA Waste Classification Guidelines – Part 1: Classifying Waste (2014). It is noted that the concentrations of chemical contaminants in the soil were less than CT values for General Solid Waste (CT1).

7.5 Remediation Works Timeline

The remediation methodology and timeline has been summarised in **Table 2** below.

Table 2: Remediation Works Timeline

Date	Works Summary
06 January 2020	EMS mobilised to site, establishes work area, treatment pad and identified stockpile locations.
09 January 2020	Excavation of contaminated material within gully and segregation in treatment pad commences.
15 January 2020	Mechanical treatment to remove oversized fraction from stockpiled material commences.
20 January 2020	Bulk excavation of containment area and stockpiling of VENM commences.

Date	Works Summary
24 January 2020	Surface scrape of material surrounding gully is undertaken in conjunction with initial post remediation inspection of creek area.
28 February 2020	Bulk excavation and benching of containment area is completed. Filling of containment cell commences.
23 March 2020	Placement of fill into containment cell is completed. Cell is covered with geofabric. Placement of 500 mm capping commences.
25 March 2020	Capping of cell completed.

8. SITE VALIDATION REGIME

Site validation works were conducted by EDP throughout the remediation works at the site. Personnel involved with the validation of the site are detailed below in **Table 3** below

Table 3: Validation Personnel

Personnel	Position	Validation Task
Ryan Jacka	Principal Environmental Scientist B Env Sc, M Env Sc, ASSSI, MEIANZ, CEnvP #874	Routine inspections, site meetings, review of proposed methodologies and geofabric, validation sampling and validation reporting.
Lochlan Browne	HSE Consultant B Sc, M Env Sc, LAA001393	Routine inspections, routine air monitoring, validation sampling, waste classification, VENM classification and validation reporting.

8.1 Validation Inspections

Validation inspection was undertaken by EDP's suitably qualified environmental consultants throughout the remediation works. EDP conducted the air monitoring as discussed previously and was available on a daily basis to provide inspection, advice and validation services to the project.

8.2 Soil Validation Sampling

Characterisation of contaminated materials being placed in the containment cell was performed routinely throughout the treatment process to ensure that data was collected prior to the material being placed in the containment cell. The purpose of the characterisation was to inform the long-term environmental management of the site.

Validation sampling was also performed in areas of foreign materials adjacent to the main fill remediation area, where surface asbestos impacts were noted. Where the grass and topsoil had been excavated, validation was performed on the basis of visual assessment. Only a minor region of intact topsoil and grass required validation sampling.

8.2.1 Sampling Methodologies and Rationale

Representative 10 L volume soil samples were collected from each surface or stockpile sample location. The samples were collected in a known 10 L volume container, then sieved through a 7 mm sieve in the field, in accordance with Schedule B2 (Section 11.3.1 and Table 7) of the NEPM 2013.

If ACM and/or FA was observed within the >7 mm fraction, it was collected and gravimetrically weighed to calculate the asbestos in soil concentration for individual samples as outlined in Schedule B1, Section 4.10 of the NEPM 2013. If identified, representative ACM and/or FA samples were collected and analysed for confirmatory asbestos identification at an external NATA accredited laboratory. A specific bulking factor of 1.8 was adopted

to assess the volume of soil in kilograms that was excavated. An asbestos content of 15% was adopted for the percentage within the ACM fragments, this is the percentage conservatively nominated in NEPM 2013. Asbestos content of 50% was adopted for the percentage within the FA fragments based on knowledge of asbestos content within the material and visual observations made in the field.

The asbestos in soil concentration was calculated using the formula shown below:

$$\% \text{ Soil Asbestos} = \frac{\% \text{ Asbestos Content x ACM (kg)}}{\text{Soil Volume (L) x Soil Density (kg/L)}}$$

Soil samples (500 ml volume) were collected at each location in accordance with NEPM 2013 to provide an indication of the presence of asbestos within the fill soil. Soil samples were analysed for asbestos in accordance with AS4964-2004 and NEPM 2013.

8.2.2 *Waste Management*

Various wastes were handled during the remediation program. Through an innovative approach, the coarse oversize building and demolition waste (concrete and brick) were processed into a suitably sized materials for recombination with processed soils and placement in the cell. This process was endorsed by the geotechnical engineer.

The following wastes were disposed during the remediation works:

- **Waste Tyres:** 62 waste tyres were segregated from the fill materials during the remediation process and disposed offsite on 16 April 2020.
- **Mixed Demolition Waste:** 8.42 tonnes and 8.60 tonnes of mixed segregated demolition waste was disposed offsite on 10 March 2020 and 19 March 2020 respectively.
- **Asbestos Impacted Soils:** 9.72 tonnes of waste soils not suitable for processing was disposed offsite on 07 April 2020.
- **General Contaminated Materials:** 440 kg of general surface foreign materials cross the site, including some was disposed offsite on 08 April 2020.

Receipts for all waste disposed offsite during the remediation are provided in **Appendix H**.

8.3 Analytical Results

Characterisation of contaminated materials being placed in the containment cell was performed routinely throughout the treatment process to ensure that data was collected prior to the material being placed in the containment cell. The purpose of the characterisation was to inform the long-term environmental management of the site.

A summary table of characterisation results is presented in **Appendix C** and NATA accredited laboratory reports are provided in **Appendix G**.

Results relating to waste classifications have been provided in the associated waste classification certificates in **Appendix J**.

8.4 Critical Hold Point Compliance and Timeline

Throughout the remediation process, critical hold points must be adhered to prior to progression of the remediation works, in accordance with the RAP (SESL 2018). These hold points were established and followed in order to assure that the required remediation steps had been appropriately completed prior to additional works being conducted.

Details of critical hold points and the timeline of release has been provided in **Table 4** below.

Table 4: Critical Hold Points

#	Critical Hold Point	Release Date and Details:	Validating Consultant
1	Council notification	02/12/19: Email notification from CCL to Council.	Ryan Jacka
2	Review of contractor's methodology and safety controls	06/01/20: Inspection of documents during site meeting.	Ryan Jacka
3	Waste Classification Assessment	31/03/2020: Waste classification prepared for minor materials not suitable for placement.	Ryan Jacka
4	Assessment of the suitability of the material to be placed into the containment cell	Confirmed following geotechnical engineer engagement, development of method specification and Level 1 supervision throughout remediation.	Ryan Jacka
5	Characterisation of treated fill material	06/02/20, 02/03/20, 19/03/20: Progressive sampling events for characterisation of materials prior to placement in cell.	Ryan Jacka
6	Imported material validation	No imported materials during project. VENM assessment of natural materials sourced from the cell was provided on 05/03/20.	Ryan Jacka
7	Validation of foreign material and fill material clearance	24/01/2020: Visual assessment of remediation area confirming full removal of fill and foreign materials. Insitu sampling of areas of foreign material removal not involving topsoil stripping. 23/03/20: inspection and sign-off of stockpiling area.	Ryan Jacka
8a	Installation and validation of the geo-textile marker layer atop containment cell	Geofabric approval: 02/03/2020 Installation approval: 23/03/2020	Ryan Jacka
8b	Installation and validation of capping layer atop containment cell	25/03/20: Visual inspection of capping layer at completion of works. Supported by survey.	Ryan Jacka

9. DISCUSSION

9.1 Remediation Validation

Remediation works were undertaken at the site in accordance with the RAP prepared for the site (SESL, 2018). Throughout the redial works, validation assessment was undertaken to ensure appropriate implementation of the remediation design, as detailed throughout this report. Visual inspection, photographic log and analytical results show that the risks posed by the identified contaminants of potential concern have been mitigated through the remediation.

9.2 Site Specific Environmental Management Plan

In accordance with the RAP (SESL 2018) and regulatory guidelines, a site-specific Environmental Management Plan (EMP) must be developed for the site following the completion of remediation and validation process.

The purpose of the EMP is to ensure the site remains suitable for the land use and detail methodologies for the engagement with encapsulated contaminated materials.

The EMP is required to:

- Detail the as-built site condition (containment cell)
- Detail the type, location and nature of the known contaminants at the site;
- Provide management strategies for the monitoring and maintenance of the site; and
- Detail methodologies, procedures and environmental controls should it be required that contaminants encapsulated soils be disturbed in the future.

This EMP must be developed by a suitably qualified and experienced environmental professional.

10. CONCLUSIONS

This SRVR details the remediation and validation works conducted at the site between January to April 2020. Based on the validation fieldwork undertaken, review of analytical results and within the constraints and limitations of the assessment, EDP considers that the remedial works have been appropriately implemented in accordance with RAP (SESL, 2018) prepared for the site.

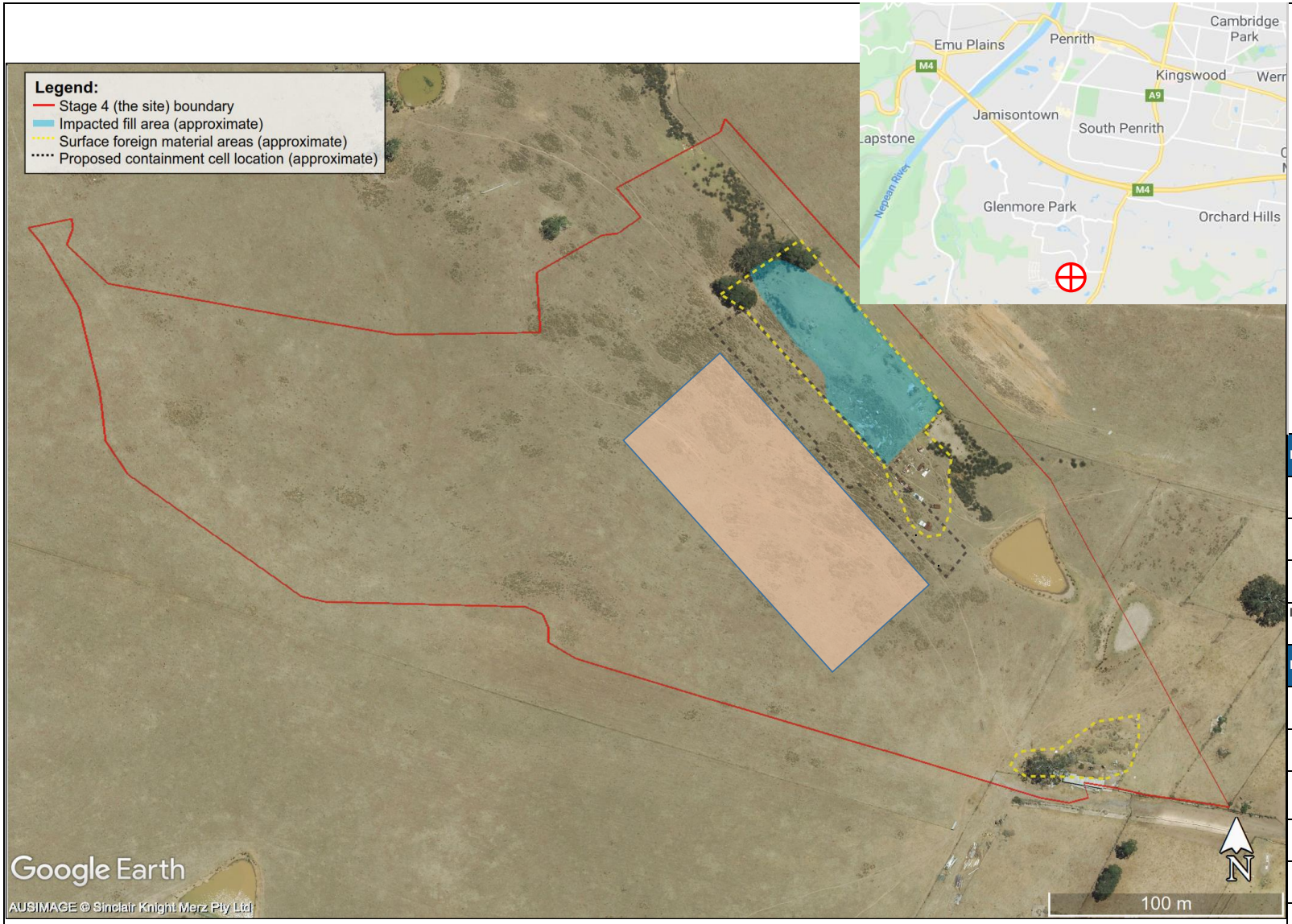
EDP considers that through the remediation process, the identified contaminants of potential concern have been appropriately treated, encapsulated or removed from the site, and the risks associated with the contamination to be mitigated.

EDP considers the site suitable for the proposed land use (low density residential land use) and continuation of the proposed residential subdivision. Prior to the completion of the subdivision, a long-term environmental management plan (LTEMP) will need to be developed and recorded against the title associated with the road corridor.

Abbreviations

Acronym	Definition
AHD	Australian Height Datum
AMG	Australian Map Grid
ANZECC	Australian & New Zealand Environment & Conservation Council
AS	Australian Standard
COC	Chain of Custody
CoPC	Contaminant of Potential Concern
CLM	Contaminated Land Management
DBYD	Dial Before You Dig
DEC	Department of Environment and Conservation
DECCW	Department of Environment, Climate Change and Water
EPA	Environment Protection Authority
ESA	Environmental Site Assessment
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
POEO	Protection of the Environment Operations
PQL	Practical Quantitation Limit
QA/QC	Quality Control/Quality Assurance
RPD	Relative Percentage Difference
SEPP	State Environmental Planning Policy
VENM	Virgin Excavated Natural Material

Appendix A: Figures



edp

Highland Views, Glenmore Park NSW

LEGEND:	
⊕	Site location
	Approximate site boundary
	Stockpiling and Treatment Area

Image from: https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Site Remediation and Validation Report
Client Name:	CCL Development Pty Ltd
EDP Reference:	S-00573.SRVR.001 / C0009
Figure Number:	1
Figure Name:	Site Location and Remediation
Date Produced:	Friday, 24 April 2020

Appendix B: Photographs

PHOTOGRAPHIC LOG

Site Details:	Highland Views, Glenmore Park NSW
EDP Reference:	S-00573.SRVR.001 / C0009

Photo 1: 08 January 2020: Commencement of excavation in remediation zone.

Photo 2: 08 January 2020: Commencement of excavation in remediation zone. Foreign materials including ACM observed.

Photo 3: 24 January 2020: Completion of excavation in remediaiton zone.

Photo 4: 24 January 2020: Completion of excavation in remediaiton zone.

Photo 5: 24 January 2020: Completion of excavation in remediaiton zone.

Photo 6: 24 January 2020: Completion of excavation in remediaiton zone.

PHOTOGRAPHIC LOG

Site Details:	Highland Views, Glenmore Park NSW
EDP Reference:	S-00573.SRVR.001 / C0009

Photo 7:	05 February 2020: Commencement of containment cell construction.

Photo 8:	05 February 2020: Commencement of containment cell construction.

Photo 9:	05 February 2020: Inspection of secondary remediation area prior to remediation works.

Photo 10:	05 February 2020: Inspection of secondary remediation area prior to remediation works.

Photo 11:	28 February 2020: Overview of containment cell and exposed excavation faces. Waste placed in bottom of cell.

Photo 12:	28 February 2020: Overview of containment cell and exposed excavation faces. Waste placed in bottom of cell.

PHOTOGRAPHIC LOG

Site Details:	Highland Views, Glenmore Park NSW
EDP Reference:	S-00573.SRVR.001 / C0009

Photo 13: 28 February 2020: Stockpiled VENM adjacent to treatment area.

Photo 14: 28 February 2020: Stockpiled screened oversize segregated in preparation for pulverising.

Photo 15: 28 February 2020: Containment cell. Stockpile of waste awaiting spreading and compaction.

Photo 16: 28 February 2020: Stockpiled VENM adjacent to treatment area.

Photo 17: 19 March 2020: Stockpile of residual asbestos waste at time of classification. Stockpiled VENM in background.

Photo 18: 19 March 2020: General soil material encountered within stockpile of residual asbestos impacted soils.

PHOTOGRAPHIC LOG

Site Details:	Highland Views, Glenmore Park NSW
EDP Reference:	S-00573.SRVR.001 / C0009

Photo 19:	23 March 2020: Treatment/stockpiling area post completion of cell.

Photo 20:	23 March 2020: Treatment/stockpiling area post completion of cell.

Photo 21:	23 March 2020: Completion of cell, geofabric placed on lower edge.

Photo 22:	23 March 2020: Remediation area has been graded to control surface water flows.

Photo 23:	23 March 2020: Geofabric being placed over cell.

Photo 24:	23 March 2020: Geofabric being placed over cell.

PHOTOGRAPHIC LOG

Site Details:	Highland Views, Glenmore Park NSW
EDP Reference:	S-00573.SRVR.001 / C0009

Photo 25:	25 March 2020: Capping completed over cell.

Photo 26:	25 March 2020: Capping completed over cell.

End of Photographic Log

Appendix C: Summary Table of Results

TABLE A: SUMMARY OF ANALYTICAL RESULTS

Analyte			Asbestos		
			> 7 mm ACM	FA/AF	Asbestos (AS4964-2004)
Practical Quantitatiion Limit (PQL)					0.1
NEPM 2013 Asbestos HSL B Residential, Minimal Soil Access			0.04	0.001	
Sample ID	**Date Sampled**	**Depth (m)**			
VS01_Surface	05/02/2020	0.10	ND	ND	ND
VS02_Surface	05/02/2020	0.10	ND	ND	ND
VS03_Surface	05/02/2020	0.10	ND	ND	ND
VS04_Surface	05/02/2020	0.10	ND	ND	ND
SP_01_0.6	06/02/2020	0.60	ND	ND	ND
SP_02_1.2	06/02/2020	1.20	ND	ND	ND
SP_03_0.8	06/02/2020	0.80	ND	ND	ND
SP_04_1.8	06/02/2020	1.80	ND	0.005	ND
SP_05_1.5	06/02/2020	1.50	ND	0.0143	AD
SP_06_0.8	06/02/2020	0.80	ND	0.0057	ND
SP_06_Frag	06/02/2020	0.80	-	-	ND
SP_07_0.1	06/02/2020	0.10	ND	0.0011	ND
SP_08_0.1	06/02/2020	0.10	ND	ND	ND
SP01-09	02/03/2020	0.30	0.0194	ND	AD
SP01-10	02/03/2020	0.40	ND	ND	ND

Analyte			Asbestos		
			> 7 mm ACM	FA/AF	Asbestos (AS4964-2004)
Practical Quantitatiion Limit (PQL)					0.1
NEPM 2013 Asbestos HSL B Residential, Minimal Soil Access			0.04	0.001	
SP01-11	02/03/2020	0.80	0.0628	ND	AD
SP01-12	02/03/2020	0.50	ND	ND	ND
SP01-13	02/03/2020	0.30	ND	0.0029	ND
SP01-14	02/03/2020	0.40	ND	0.0023	ND
SP01-15	02/03/2020	1.50	ND	0.0127	AD
SP01-16	02/03/2020	1.00	ND	0.0017	ND
SP01-17	02/03/2020	0.80	ND	0.0051	ND
SP01-18	02/03/2020	0.30	ND	ND	ND
SP01-19	02/03/2020	0.40	ND	ND	ND
SP01-20	02/03/2020	1.00	0.0573	ND	AD
SP01-21	02/03/2020	0.50	ND	0.0017	ND
SP01-22	02/03/2020	0.60	0.0207	0.0012	AD
SP01-23	02/03/2020	1.00	0.0126	0.0025	AD
SP01-12_Frag	02/03/2020	0.50	-	-	AD
SP01_17_Frag	02/03/2020	0.80	-	-	AD
SP01_24_1.0	19/03/2020	1.00	ND	ND	ND
SP01_25_0.8	19/03/2020	0.80	ND	ND	ND
SP01_26_1.1	19/03/2020	1.10	ND	ND	ND
SP01_27_0.3	19/03/2020	0.30	ND	ND	ND
SP01_28_0.8	19/03/2020	0.80	ND	ND	ND
SP01_29_0.5	19/03/2020	0.50	ND	ND	ND
SP01_30_0.6	19/03/2020	0.60	ND	ND	ND
SP01_31_0.4	19/03/2020	0.40	ND	ND	ND

Analyte			Asbestos		
			> 7 mm ACM	FA/AF	Asbestos (AS4964-2004)
Practical Quantitatiion Limit (PQL)					0.1
NEPM 2013 Asbestos HSL B Residential, Minimal Soil Access			0.04	0.001	
SP01_32_0.6	19/03/2020	0.60	ND	ND	ND
SP01_33_0.3	19/03/2020	0.30	ND	ND	ND
SP01_34_1.2	19/03/2020	1.20	ND	ND	ND
SP01_35_1.2	19/03/2020	1.20	ND	ND	ND
SP01_36_1.8	19/03/2020	1.80	ND	ND	ND
SP01_37_0.9	19/03/2020	0.90	ND	ND	ND
SP01_38_1.0	19/03/2020	1.00	ND	ND	ND
SP01_39_1.5	19/03/2020	1.50	ND	ND	ND
SP01_40_1.8	19/03/2020	1.80	ND	ND	ND
SP01_41_0.5	19/03/2020	0.50	ND	ND	ND
SP01_42_1.1	19/03/2020	1.10	ND	ND	ND
SP01_43_0.5	19/03/2020	0.50	ND	ND	ND

Legend	
ND	Non Detect
AD	Asbestos Detected
Coloured Concentration	Criteria Exceeded

Appendix D: Validation Criteria

SOIL VALIDATION CRITERIA

The soil data from the site was tabulated and compared against the relevant Tier 1 screening criteria as detailed below. This data is provided in **Table A** in **Appendix C.**

Historical investigations determined the suitability of materials to be retained on site from a chemical perspective. Asbestos was identified in the fill materials proposed for onsite containment though was not characterised in accordance with the ASC NEPM 2013. The soil validation criteria was therefore developed to characterise the asbestos concentrations being contained on site, to guide the development of a long-term environmental management plan. Health screening levels (HSLs) were adopted from Schedule B1 of NEPM 2013.

Health Screening Levels (HSLs) – Asbestos in Soil

Asbestos contamination can occur in a range of forms, sizes and degrees of deterioration. NEPM 2013 divides asbestos contamination into the following:

- Bonded asbestos-containing materials (ACM): asbestos bound in a matrix, and in sound condition e.g. vinyl floor tiles, cement sheeting;
- Fibrous asbestos (FA): friable asbestos material such as weathered ACM and loose fibrous material (insulation products); and
- Asbestos fines (AF): free fibres of asbestos, small fibre bundles, and ACM fragments that can pass through a 7 mm sieve.

NEPM 2013 (Schedule B1, Section 4.8 and Table 7) provides HSLs for the five exposure settings for asbestos, outlined below:

- 0.001% w/w asbestos for FA and AF – all site uses;
- 0.01% w/w asbestos for bonded ACM – residential, includes day care centres, preschools;
- 0.02% w/w asbestos for bonded ACM – recreational, includes parks, public open spaces, playing fields;
- 0.04% w/w asbestos for bonded ACM – residential with minimal soil access, such as high-density residential use; and
- 0.05% w/w asbestos for bonded ACM – commercial/industrial use, includes premises such as shops and offices as well as factories and industrial sites.

Additionally, the surface soils (0.1 m) must be free of visible asbestos for all site uses.

For the purposes of this investigation, HSL of 0.04% w/w asbestos for bonded ACM was adopted to evaluate the significance of the ACM results to conduct the risk assessment.

NEPM 2013 states a criterion of 0.001% for FA and AF for all site uses to screen the analytical results. This lower HSL was adopted where FA and/or AF could be identified in the field with gravimetric measurement conducted. It should be noted for asbestos in soil analysis, in accordance with AS4964-2004 and NATA accreditation, the limit of reporting (LOR) for AF/FA in soils is 0.1 g/kg (0.01%). This LOR is not sufficient for the risk assessment of FA and AF in soil, in accordance with NEPM 2013. Therefore, as part of the risk assessment additional comments of visual observations made during laboratory analysis relating to the presence of visible FA and AF (if present) will be utilised with a qualitative criterion adopted to evaluate the significance of the laboratory analytical results. These observations are considered noteworthy, based on the weight of evidence approach, in accordance with NEPM 2013.

Waste Classification

Reference was made to the NSW EPA Waste Classification Guidelines criteria to assess the offsite disposal classification of any materials not proposed for placement in the containment cell. Waste can be classified as:

- General solid waste;
- Restricted solid waste; and
- Hazardous waste; and

- Special Waste.

Chemical contaminants were compared with the contaminant threshold (CT) values outlined in the NSW EPA Waste Classification Guidelines. If a waste SCC test value exceeded a CT, further assessment using TCLP test was used. If any SCC or TCLP threshold values specified were exceeded for general solid waste, the waste was classified as restricted solid waste. If any SCC or TCLP threshold values were exceeded for restricted solid waste, the waste must be classified as hazardous waste.

The adopted waste classification criteria for this assessment are provided in the waste classification certificates provided in **Appendix J.**

Appendix E: Quality Assurance / Quality Control

DATA QUALITY OBJECTIVES

Systematic planning and verification is critical to successful implementation of a validation assessment to ensure that the data is reliable and representative. A process for establishing DQOs for an investigation has been defined by the United States Environmental Protection Agency (US EPA). That process has been adopted by Australian Standard AS4482.1-2005 and referenced in NEPM 2013.

DQOs ensure that:

- The study objectives are set;
- Appropriate types of data are collected (based on potential sources of contamination and CoPC); and
- The tolerance levels are set for potential decision-making errors.

The DQO process is a seven-step iterative planning approach used to plan for environmental data collection activities. It provides a systematic approach for defining the criteria that a data collection design should satisfy, including when, where and how to collect samples or measurements, determination of tolerable decision error rates and the number of samples or measurements that should be collected. The seven-step process for this investigation is discussed and summarised in **Table 7.**

Table 3: Data Quality Objectives

Process	DQO
Step 1: State the Problem	Contaminated materials have been identified as requiring remediation and placement within a containment cell. The remediation area needs adequate validation to ensure all contaminated materials are remediated. Wastes proposed for disposal require appropriate classification. Soil materials proposed for reuse on the site must be consistent with the definition of VENM.
Step 2: Identify the Decisions	The decisions to be made based on the results of the validation assessment were as follows: • Is there sufficient in formation to allow the development of a long-term environmental management plan that is suitably protective of human health and the environment? • What is the waste classification of soils requiring offsite disposal?
Step 3: Identify Inputs in the Decision	The inputs required to make the above decisions were as follows: • Site setting and available background information and previous analytical data; • Selection of appropriate Tier 1 soil assessment criteria; • Visual observations; and • Field and laboratory analytical results.
Step 4: Define Boundaries of the Study	The geographical limits appropriate for the data collection and decision making in this investigation comprised the remediation areas, the containment cell and the stockpiling treatment areas as shown on **Figures 1** in the **Appendix A**.
Step 5: Develop a Decision Rule	The adopted site assessment criteria for the CoPC are outlined in **Appendix D** and presented in **Table A** provided in **Appendix C.** **Decision Rules** • Based on the containment method and suitability of the containment design, no decision rules were developed for the analytical results relating to asbestos characterisation. • Where the data sets for waste classification were not sufficiently populated to allow calculation of the 95% upper confidence limit (UCLmean) then the individual results must be less than the adopted criteria. If all the individual results are below the adopted criteria, then no additional assessment and/or management is required. Where individual results exceed that adopted criteria, then further assessment and/or management is required.

Process	DQO
	• In accordance with the NEPM 2013, where 95% UCLmean of the average concentration for each soil analyte can be calculated, then the 95% UCLmean must be below the adopted criteria; no single analyte concentration exceeds 250% of the adopted criteria; the standard deviation of the results must be less than 50% of the adopted criteria; and the normal distribution will only be used where the coefficient of variance is not greater than 1.2. • Allowances to these decision rules apply where alternative 95% UCL methods that are not based on normal or log-normal distributions are adopted. Where 95% UCLmean results exceed the aforementioned criteria, then further assessment and/or management is required.
Step 6: **Specify Limits on Decision Errors**	The acceptable limits on decision errors applied during the assessment on the site and the manner of addressing possible decision errors were developed based on the DQIs of: • Accuracy: a quantitative measure of the closeness of reported data to the true value; • Comparability: a qualitative parameter expressing the confidence with which one data set can be compared with another; • Completeness: a measure of the amount of useable data (expressed as %) from a data collection activity; • Representativeness: the confidence (expressed qualitatively) that data are representative of each media present on the site; and • Precision: a quantitative measure of the variability (or reproducibility) of data. **Acceptance Limits for Decision Errors** The acceptable limits were as follows: • Individual or 95% UCLmean concentrations are below the adopted criteria; and • 95% of the data will satisfy the DQIs which were determined for completeness, representativeness, precision and accuracy of both field and laboratory data. Therefore, the limit on the decision error will be 5% that a conclusive statement may be incorrect.
Step 7: **Optimise the Design**	A systematic based sampling pattern was designed based on the assessment findings of the desktop investigation. A limited suite of CoPC was selectively adopted for assessment to provide characterisation of the asbestos status of soils being placed in the containment cell.

DATA QUALITY INDICATORS

The DQIs for the assessment are presented in **Table 8.**

Table 8: DQO, Requirements and DQI

DQO:	Requirement:	DQI:
Precision		
Standard operating procedures appropriate and complied with	The sampling methods comply with industry standard and guidelines	Meet requirement
Laboratory duplicates	1 per batch per analyte	RPDs < 50%
Accuracy		
Laboratory matrix spikes	1 per batch per volatile/semi-volatile analyte	Recoveries 70 to 130%
Laboratory surrogate spikes	1 per volatile/semi-volatile analyte sample (as appropriate)	Recoveries 70 to 130%
Laboratory control samples	At least 1 per batch per analyte tested	Result < PQL
Representativeness		
Sampling methodology – preservation	Appropriate for the sample type and analysis	Meet requirement
Samples extracted and analysed within holding times	Specific to each analyte	Meet requirement
Laboratory method banks	At least 1 per batch per analyte tested for	Result < PQL
Comparability		
Sampling approach	Consistent with each sample	Meet requirement
Analysis methodology	Consistent methodology for each sample	Meet requirement
Handling conditions and sampler	Consistent for each sample	Meet requirement
Field observations and analytical	Field observations support analytical results	Meet requirement
Consistent laboratory reporting limit	Consistent for each sample	Meet requirement
Completeness		
Sampling staff	Consistent sampling staff used	Meet requirement
Laboratory accreditation	NATA accredited laboratories and methods used	Meet requirement
Accredited methods	NATA accredited methods used appropriate for each analyte	Meet requirement
NEPM 2013 laboratory methods	Laboratory methods consistent with the NEPM 2013	Meet requirement
Chain of custody documentation	Appropriately completed	Meet requirement
Field sampling decontamination	Appropriately completed	Meet requirement

QUALITY ASSURANCE/ QUALITY CONTROL

Field Quality Assurance Sampling Procedures

Fieldwork was undertaken by qualified and experienced EDP environmental consultants in accordance with EDP Work Instructions which are based on industry accepted standard practice and NEPM 2013.

Sampling, decontamination and storage works were conducted in accordance with the EDP Environmental Work Instructions.

Soil samples were placed in laboratory supplied jars, bags and bottles with Teflon lined lids and preservative, where required. The samples were stored on ice chests before being transported to the laboratory along with Chain of Custody documentation, which is included in **Appendix G.**

Laboratory Quality Assurance/Quality Control

The laboratories conducted their own internal quality program for assessment of the repeatability of the analytical procedures and instrument accuracy under their NATA accreditation. This included analysis of laboratory blank samples, duplicate samples, spike samples, control samples and surrogate spikes. The laboratory QA/QC procedures and results are described within the laboratory reports presented in **Appendix G.**

The laboratory internal QA/QC sample results were reviewed and were consistent with the laboratory's NATA guidelines. Furthermore, the adoption of the general advisory ranges for specific recoveries has been used to screen laboratory data. Where recoveries were outside these ranges the data was assessed in relation to specific laboratory comments, published industry 'norms' for specific parameters and/or the likely impact on the interpretation of the meaning of the results.

Based on the reported laboratory QA/QC samples and methods used, the results were considered to be acceptable.

Quality Statement

The sampling methods (including sample preservation, transport and decontamination procedures) and laboratory methods followed during the assessment were consistent with EDP Work Instructions and were found to meet the DQIs for this project. It was considered that the data was sufficiently precise and accurate and that the results can be relied upon for the purpose of this assessment.

Appendix F: Air Monitoring Certificates

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.001 / C0009
Version: V1
[redacted]

Wednesday, 8 January 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Background Monitoring **Monitoring Date:** 8/01/2020 **Analysis Date:** 8/01/2019

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of result identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned at various locations surrounding the assessment area. Background air monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations within the ambient air.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Lochlan Browns	**Kim Femia**
Approved Counter	**Approved Signatory**

NATA

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Entrance to work area, adjacent portaloo - on temporary fence	07:24	15:56	1009	1 / 100	<0.01
02	Northern perimeter of work area, adjacent satellite - on temporary fence	07:26	15:58	1009	0 / 100	<0.01
03	South-eastern perimeter of work area, adjacent neighbouring shed - on perimeter fence	07:30	16:03	1011	0 / 100	<0.01
04	Western perimeter of work area, adjacent sewer manhole - on temporary fence	07:34	16:07	1011	1 / 100	<0.01
05	Within excavator cabin	07:36	15:54	981	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate site boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.002 V2 / C0009
Monitoring Date:	Thursday, 9 January 2020

Jason Stephenson

[redacted]

EDP Reference: S-00573.AAM.002 / C0009
Version: V2

[redacted]

Thursday, 19 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Background Monitoring **Monitoring Date:** 9/01/2020 **Analysis Date:** 9/01/2020

Sampler(s): Lochlan Browne (LAA001939)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned at various locations surrounding the assessment area. Background air monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations within the ambient air.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by: [redacted]

Lochlan Browne
Approved Counter

Reviewed and authorised by:

Kim Femia
Approved Signatory

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Entrance to site - on portaloo	07:00	14:55	936	0 / 100	<0.01
02	Northern perimeter of site, adjacent satellite - on perimeter fence	07:03	14:58	936	0 / 100	<0.01
03	South-eastern perimeter of site, adjacent neighbouring shed - on perimeter fence	07:06	15:00	934	0 / 100	<0.01
04	Western perimeter of site - on site shed	07:10	14:54	914	0 / 100	<0.01
05	Within excavator cabin	07:12	14:59	920	1 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).
This document shall not be reproduced except in full.
Note: This version (V2) supersedes the previous version (V1) dated 09/01/2020 due to amendment of the analysis date error.

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.001 / C0009
Monitoring Date:	Wednesday, 8 January 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.003 / C0009
Version: V1
[redacted]

Friday, 10 January 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 10/01/2020 **Analysis Date:** 10/01/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Lochlan Browne **Approved Counter**	**Kim Femia** **Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Entrance to site - on portaloo	07:01	14:48	920	0 / 100	<0.01
02	Northern perimeter of site, adjacent satellite - on perimeter fence	07:06	14:52	918	0 / 100	<0.01
03	Eastern perimeter of site, adjacent water tank - on perimeter fence	07:10	14:55	916	0 / 100	<0.01
04	Western perimeter of site - on site shed	07:03	14:49	918	0 / 100	<0.01
05	Within excavator cabin	07:13	14:59	918	1 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate site area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.003 / C0009
Monitoring Date:	Friday, 10 January 2020

[redacted]

EDP Reference: S-00573.AAM.004 / C0009
Version: V1

[redacted]

Monday, 13 January 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 13/01/2020 **Analysis Date:** 13/01/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by: [redacted]

Lochlan Browne
Approved Counter

Reviewed and authorised by:

Kim Fernia
Approved Signatory

NATA

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Entrance to site - on portaloo	07:00	14:46	918	0 / 100	<0.01
02	Northern perimeter of site, adjacent satellite - on perimeter fence	07:04	14:49	916	0 / 100	<0.01
03	Eastern perimeter of site, adjacent water tank - on perimeter fence	07:07	14:53	918	0 / 100	<0.01
04	Western perimeter of site - on site shed	07:10	14:56	918	0 / 100	<0.01
05	Within excavator cabin	07:02	14:51	924	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site, Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate site area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.004 / C0009
Monitoring Date:	Monday, 13 January 2020

Jason Stephenson

[redacted]

EDP Reference: S-00573.AAM.005 / C0009
Version: V1

[redacted]

Tuesday, 14 January 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 14/01/2020 **Analysis Date:** 14/01/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Lochlan Browne	**Kim Fernia**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Entrance to site - on portaloo	07:00	14:50	926	0 / 100	<0.01
02	Northern perimeter of site, adjacent satellite - on perimeter fence	07:04	14:54	926	0 / 100	<0.01
03	Eastern perimeter of site, adjacent water tank - on perimeter fence	07:08	14:57	924	0 / 100	<0.01
04	Western perimeter of site - on site shed	07:02	14:53	928	0 / 100	<0.01
05	Within excavator cabin	07:10	14:59	924	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate site area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.005 / C0009
Monitoring Date:	Tuesday, 14 January 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.006 / C0009
Version: V1
[redacted]

Wednesday, 15 January 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 15/01/2020 **Analysis Date:** 15/01/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Lochlan Browne	**Kim Femia**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Entrance to site - on portaloo	07:00	14:47	920	1 / 100	<0.01
02	Northern perimeter of site, adjacent satellite - on perimeter fence	07:04	14:55	928	0 / 100	<0.01
03	Eastern perimeter of site, adjacent water tank - on perimeter fence	07:08	14:57	924	0 / 100	<0.01
04	Western perimeter of site - on site shed	07:02	14:48	918	0 / 100	<0.01
05	Within excavator cabin	07:10	15:03	932	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate site area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.006 / C0009
Monitoring Date:	Wednesday, 15 January 2020

Jason Stephenson

[redacted]

EDP Reference: S-00573.AAM.007 / C0009
Version: V1

[redacted]

Wednesday, 15 January 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Exposure Monitoring **Monitoring Date:** 15/01/2020 **Analysis Date:** 15/01/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned on selected workers with samples collected within the workers breathing zone to ascertain potential exposure levels to airborne asbestos-fibre concentrations during a work shift.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by: [redacted]

Lochlan Browne
Approved Counter

Reviewed and authorised by:

Kim Femia
Approved Signatory

NATA

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	On Sam - during excavator sieving works and emu pick	07:11	14:10	825	2 / 100	<0.01
02	On Siek - during sieving works and emu pick	07:12	14:11	825	2 / 100	<0.01
03	On Peng - during sieving works and emu pick	07:13	14:12	825	1 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.008 / C0009
Version: V1
[redacted]

Monday, 20 January 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 20/01/2020 **Analysis Date:** 20/01/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by: [redacted]
Lochlan Browne
Approved Counter

Reviewed and authorised by:
Kim Fernia
Approved Signatory

NATA

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Northern perimeter of work area, adjacent stormwater outlet - on star picket	08:11	14:58	793	0 / 100	<0.01
02	Eastern perimeter of work area, adjacent site boundary - on perimeter fence	08:13	15:00	793	0 / 100	<0.01
03	Southern perimeter of work area, adjacent water tank - on perimeter fence	08:15	15:03	795	0 / 100	<0.01
04	Western perimeter of work area, adjacent kerb line stake - on star picket	08:17	15:05	795	0 / 100	<0.01
05	Within excavator cabin	08:18	15:07	797	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.008 / C0009
Monitoring Date:	Monday, 20 January 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.009 / C0009
Version: V1
[redacted]

Tuesday, 21 January 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 21/01/2020 **Analysis Date:** 21/01/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Lochlan Browne	**Kim Femia**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Northern perimeter of work area, adjacent stormwater outlet - on star picket	07:00	15:44	1032	0 / 100	<0.01
02	Eastern perimeter of work area, adjacent site boundary - on perimeter fence	07:02	15:49	1038	1 / 100	<0.01
03	Southern perimeter of work area, adjacent water tank - on perimeter fence	07:04	15:52	1040	0 / 100	<0.01
04	Western perimeter of work area, adjacent kerb line stake - on star picket	07:06	15:38	1009	0 / 100	<0.01
05	Within excavator cabin	07:08	15:56	1040	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.009 / C0009
Monitoring Date:	Tuesday, 21 January 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.010 / C0009
Version: V1
[redacted]

Wednesday, 22 January 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 22/01/2020 **Analysis Date:** 22/01/2020

Sampler(s): Sean Tarnow-Mordi

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Lochlan Browne	**Kim Fernia**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Northern perimeter of work area, adjacent stormwater outlet - on star picket	07:06	15:01	936	0 / 100	<0.01
02	Eastern perimeter of work area, adjacent site boundary - on perimeter fence	07:10	15:03	932	0 / 100	<0.01
03	Southern perimeter of work area, adjacent water tank - on perimeter fence	07:13	15:06	932	0 / 100	<0.01
04	Western perimeter of work area, adjacent kerb line stake - on star picket	07:00	15:07	959	0 / 100	<0.01
05	Within excavator cabin	07:16	15:09	932	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.010 / C0009
Monitoring Date:	Wednesday, 22 January 2020

[redacted]

Jason Stephenson

EDP Reference: S-00573.AAM.011 / C0009
Version: V1

[redacted]

Thursday, 23 January 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 23/01/2020 **Analysis Date:** 23/01/2020

Sampler(s): Sean Tarnow-Mordi (LAA001285)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Lochlan Browne	**Kim Femia**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Northern perimeter of work area, adjacent stormwater outlet - on star picket	07:01	15:04	941	0 / 100	<0.01
02	Eastern perimeter of work area, adjacent site boundary - on perimeter fence	07:03	15:07	943	0 / 100	<0.01
03	Southern perimeter of work area, adjacent water tank - on perimeter fence	07:06	15:10	943	1 / 100	<0.01
04	Western perimeter of work area, adjacent kerb line stake - on star picket	07:07	15:12	945	1 / 100	<0.01
05	Within excavator cabin	07:09	15:15	947	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.011 / C0009
Monitoring Date:	Thursday, 23 January 2020

Jason Stephenson

[redacted]

EDP Reference: S-00573.AAM.012 / C0009

Version: V1

[redacted]

Friday, 24 January 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 24/01/2020 **Analysis Date:** 24/01/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03,* with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	**Reviewed and authorised by:**
[redacted]	
Lochlan Browne	**Oliver Thomas**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Northern perimeter of work area, adjacent "type 3" sign - on star picket	07:13	14:51	902	0 / 100	<0.01
02	Eastern perimeter of work area, adjacent neighbouring property - on star picket	07:15	14:53	902	0 / 100	<0.01
03	Southern of work area, adjacent barb wire fence - on star picket	07:17	14:55	902	0 / 100	<0.01
04	Western perimeter of work area, adjacent haulage pathway - on star picket	07:19	14:58	904	0 / 100	<0.01

The results displayed in this report relate only to the items tested.

The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.012 / C0009
Monitoring Date:	Friday, 24 January 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.013 / C0009
Version: V1
[redacted]

Tuesday, 28 January 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 28/01/2020 **Analysis Date:** 28/01/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Lochlan Browne	**Kim Femia**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Northern perimeter of work area, adjacent "type 3" sign - on star picket	07:13	14:56	912	0 / 100	<0.01
02	Eastern perimeter of work area, adjacent neighbouring property - on star picket	07:18	15:02	914	1 / 100	<0.01
03	Southern of work area, adjacent barb wire fence - on star picket	07:15	14:58	912	0 / 100	<0.01
04	Western perimeter of work area, adjacent haulage pathway - on star picket	07:11	14:53	910	0 / 100	<0.01
05	Within excavator cabin	07:09	14:50	908	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.013 / C0009
Monitoring Date:	Tuesday, 28 January 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.014 / C0009
Version: V1
[redacted]

Wednesday, 29 January 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 29/01/2020 **Analysis Date:** 29/01/2020

Sampler(s): Lachlan Browne

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Kim Femia **Approved Counter**	**Kim Femia** **Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Northern perimeter of work area, adjacent "type 3" sign - on star picket	07:00	15:24	993	1 / 100	<0.01
02	Eastern perimeter of work area, adjacent neighbouring property - on star picket	07:03	15:19	977	0.5 / 100	<0.01
03	Southern of work area, adjacent barb wire fence - on star picket	07:07	15:15	961	0 / 100	<0.01
04	Western perimeter of work area, adjacent haulage pathway - on star picket	07:10	15:12	950	1 / 100	<0.01
05	Within excavator cabin	07:12	15:21	963	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.014 / C0009
Monitoring Date:	Wednesday, 29 January 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.015 / C0009
Version: V1
[redacted]

Thursday, 30 January 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 30/01/2020 **Analysis Date:** 30/01/2020

Sampler(s): Muthu Narayanan under direction of Lochlan Browne

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Kim Femia	**Kim Femia**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Northern perimeter of work area, adjacent "type 3" sign - on star picket	07:24	15:47	980	0 / 100	<0.01
02	Eastern perimeter of work area, adjacent neighbouring property - on star picket	07:19	15:41	978	0 / 100	<0.01
03	Southern perimeter of work area, adjacent barb wire fence - on star picket	07:15	15:43	990	0 / 100	<0.01
04	Western perimeter of work area, adjacent haulage pathway - on star picket	07:12	15:47	1003	0 / 100	<0.01
05	Within excavator cabin	07:21	15:50	992	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.015 / C0009
Monitoring Date:	Thursday, 30 January 2020

Jason Stephenson

[redacted]

EDP Reference: S-00573.AAM.016 / C0009
Version: V1

[redacted]

Friday, 31 January 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 31/01/2020 **Analysis Date:** 31/01/2020

Sampler(s): Lochlan Browne

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Fraser Elder	**Fraser Elder**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Within excavator cabin	07:00	15:35	1031	0 / 100	<0.01
02	Western perimeter of work area, adjacent haulage pathway - on star picket	07:04	15:37	1027	0 / 100	<0.01
03	Southern perimeter of work area, adjacent barb wire fence - on star picket	07:09	15:39	1021	0.5 / 100	<0.01
04	Eastern perimeter of work area, adjacent neighbouring property - on star picket	07:12	15:43	1023	0 / 100	<0.01
05	Northern perimeter of work area, adjacent "type 3" sign - on star picket	07:15	15:46	1023	2 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.016 / C0009
Monitoring Date:	Friday, 31 January 2020

Jason Stephenson

[redacted]

EDP Reference: S-00573.AAM.017 / C0009
Version: V1

[redacted]

Monday, 3 February 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 3/02/2020 **Analysis Date:** 3/02/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Kim Femia **Approved Counter**	**Kim Femia** **Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Within excavator cabin	08:15	14:44	758	1 / 100	<0.01
02	Western perimeter of work area, adjacent haulage pathway - on star picket	08:18	14:48	760	0 / 100	<0.01
03	Southern perimeter of work area, adjacent barb wire fence - on star picket	08:20	14:51	762	0 / 100	<0.01
04	Eastern perimeter of work area, adjacent neighbouring property - on star picket	08:23	14:55	764	0.5 / 100	<0.01
05	Northern perimeter of work area, adjacent "type 3" sign - on star picket	08:25	14:59	768	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.017 / C0009
Monitoring Date:	Monday, 3 February 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.018 / C0009
Version: V1
[redacted]

Wednesday, 5 February 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 4/02/2020 **Analysis Date:** 5/02/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Kim Femia **Approved Counter**	**Kim Femia** **Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Within excavator cabin	07:04	14:48	904	5.5 / 100	<0.01
02	Western perimeter of work area, adjacent haulage pathway - on star picket	07:08	14:36	873	2 / 100	<0.01
03	Southern perimeter of work area, adjacent barb wire fence - on star picket	07:11	14:39	873	0 / 100	<0.01
04	Eastern perimeter of work area, adjacent neighbouring property - on star picket	07:15	14:42	871	0 / 100	<0.01
05	Northern perimeter of work area, adjacent "type 3" sign - on star picket	07:19	14:45	869	1 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.018 / C0009
Monitoring Date:	Tuesday, 4 February 2020

Jason Stephenson

[redacted]

EDP Reference: S-00573.AAM.019 / C0009
Version: V1

[redacted]

Thursday, 6 February 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 5/02/2020 **Analysis Date:** 6/02/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by: [redacted]

Lochlan Browne
Approved Counter

Reviewed and authorised by:

Kim Femia
Approved Signatory

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent haulage pathway - on star picket	06:56	14:55	933	0 / 100	<0.01
02	Southern perimeter of work area, adjacent barb wire fence - on star picket	06:59	14:57	931	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent neighbouring property - on star picket	07:02	14:59	929	0 / 100	<0.01
04	Northern perimeter of work area, adjacent "type 3" sign - on star picket	07:05	15:03	931	1 / 100	<0.01
05	Within excavator cabin	07:08	15:10	939	2 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.019 / C0009
Monitoring Date:	Wednesday, 5 February 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.020 / C0009
Version: V1
[redacted]

Thursday, 6 February 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 6/02/2020 **Analysis Date:** 6/02/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Lochlan Browne	**Kim Femia**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Within excavator cabin	06:55	12:20	633	1 / 100	<0.01
02	Western perimeter of work area, adjacent haulage pathway - on star picket	06:57	12:22	633	0 / 100	<0.01
03	Northern perimeter of work area, adjacent "type 3" sign - on star picket	06:59	12:25	635	0 / 100	<0.01
04	Eastern perimeter of work area, adjacent neighbouring property - on star picket	07:03	12:29	635	0 / 100	<0.01
05	Southern perimeter of work area, adjacent barb wire fence - on star picket	07:10	12:32	627	3 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 02	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.020 / C0009
Monitoring Date:	Thursday, 6 February 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.021 / C0009
Version: V1
[redacted]

Wednesday, 19 February 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 18/02/2020 **Analysis Date:** 18/02/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03,* with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Lochlan Browne	**Kim Femia**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent haulage pathway - on star picket	08:19	15:44	877	0 / 100	<0.01
02	Northern perimeter of work area, adjacent "type 3" sign - on star picket	08:21	15:46	877	1 / 100	<0.01
03	Eastern perimeter of work area, adjacent neighbouring property - on star picket	08:23	15:48	877	0 / 100	<0.01
04	Southern perimeter of work area, adjacent barb wire fence - on star picket	08:25	15:50	877	0 / 100	<0.01
05	Within excavator cabin	08:26	15:52	879	2 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.021 / C0009
Monitoring Date:	Tuesday, 18 February 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.022 / C0009
Version: V1
[redacted]

Wednesday, 19 February 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 19/02/2020 **Analysis Date:** 19/02/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03,* with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Lochlan Browne	**Kim Femia**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent haulage pathway - on star picket	07:00	14:49	924	0 / 100	<0.01
02	Northern perimeter of work area, adjacent "type 3" sign - on star picket	07:02	14:51	924	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent neighbouring property - on star picket	07:05	14:53	922	0 / 100	<0.01
04	Southern of work area, adjacent barb wire fence - on star picket	07:07	14:55	922	1 / 100	<0.01
05	Within excavator cabin	07:10	14:57	920	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.022 / C0009
Monitoring Date:	Wednesday, 19 February 2020

Jason Stephenson

[redacted]

EDP Reference: S-00573.AAM.023 / C0009
Version: V1

[redacted]

Thursday, 20 February 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 20/02/2020 **Analysis Date:** 20/02/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Lochlan Browne	**Kim Femia**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent haulage pathway - on star picket	07:00	15:23	991	1 / 100	<0.01
02	Northern perimeter of work area, adjacent "type 3" sign - on star picket	07:02	15:25	991	2 / 100	<0.01
03	Eastern perimeter of work area, adjacent neighbouring property - on star picket	07:05	15:27	989	0 / 100	<0.01
04	Southern of work area, adjacent barb wire fence - on star picket	07:08	15:29	987	0 / 100	<0.01
05	Within excavator cabin	07:10	15:32	989	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.023 / C0009
Monitoring Date:	Thursday, 20 February 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.024 / C0009
Version: V1
[redacted]

Friday, 21 February 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 21/02/2020 **Analysis Date:** 21/02/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Lochlan Browne	**Oliver Thomas**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent haulage pathway - on star picket	07:00	15:25	995	0 / 100	<0.01
02	Northern perimeter of work area, adjacent "type 3" sign - on star picket	07:02	15:27	995	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent neighbouring property - on star picket	07:05	15:28	991	0 / 100	<0.01
04	Southern of work area, adjacent barb wire fence - on star picket	07:07	15:30	991	0 / 100	<0.01
05	Within excavator cabin	07:10	-	-	-	*VOID

***VOID:** Sample 05 was void due to equipment malfunction/failure.
The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.024 / C0009
Monitoring Date:	Friday, 21 February 2020

Jason Stephenson

[redacted]

EDP Reference: S-00573.AAM.025 / C0009
Version: V1

[redacted]

Wednesday, 26 February 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 25/02/2020 **Analysis Date:** 26/02/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03,* with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Kim Femia	**Kim Femia**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent haulage pathway - on star picket	07:21	15:15	934	0.5 / 100	<0.01
02	Northern perimeter of work area - on star picket	07:10	15:18	961	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent neighbouring property - on star picket	07:13	15:21	961	2 / 100	<0.01
04	Southern perimeter of work area, adjacent barb wire fence - on star picket	07:18	15:25	959	0 / 100	<0.01
05	Within excavator cabin	07:15	15:30	975	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).
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edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.025 / C0009
Monitoring Date:	Tuesday, 25 February 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.026 / C0009
Version: V1
[redacted]

Friday, 28 February 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 26/02/2020 **Analysis Date:** 27/02/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Oliver Thomas	**Oliver Thomas**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent haulage pathway - on star picket	07:15	15:51	1027	0 / 100	<0.01
02	Northern perimeter of work area - on star picket	07:18	15:54	1027	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent neighbouring property - on star picket	07:21	15:56	1025	0 / 100	<0.01
04	Southern perimeter of work area, adjacent barb wire fence - on star picket	07:25	15:58	1021	1 / 100	<0.01
05	Within excavator cabin	07:30	16:00	1015	1 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.026 / C0009
Monitoring Date:	Wednesday, 26 February 2020

Jason Stephenson

[redacted]

EDP Reference: S-00573.AAM.027 / C0009
Version: V1

[redacted]

Friday, 28 February 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 27/02/2020 **Analysis Date:** 28/02/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Oliver Thomas **Approved Counter**	**Oliver Thomas** **Approved Signatory**

NATA

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent haulage pathway - on star picket	07:31	15:15	923	0 / 100	<0.01
02	Northern perimeter of work area - on star picket	07:24	15:17	941	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent neighbouring property - on star picket	07:26	15:19	941	1 / 100	<0.01
04	Southern perimeter of work area, adjacent barb wire fence - on star picket	07:28	15:21	941	1 / 100	<0.01
05	Within excavator cabin	07:30	15:24	943	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
x 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.027 / C0009
Monitoring Date:	Thursday, 27 February 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.028 / C0009
Version: V1
[redacted]

Tuesday, 3 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 28/02/2020 **Analysis Date:** 2/03/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Oliver Thomas	**Oliver Thomas**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent haulage pathway - on star picket	07:15	15:10	945	0 / 100	<0.01
02	Northern perimeter of work area - on star picket	07:17	15:12	945	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent neighbouring property - on star picket	07:19	15:15	947	0 / 100	<0.01
04	Southern perimeter of work area, adjacent barb wire fence - on star picket	07:21	15:17	947	0 / 100	<0.01
05	Within excavator cabin	07:24	15:20	947	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.028 / C0009
Monitoring Date:	Friday, 28 February 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.029 / C0009
Version: V1
[redacted]

Tuesday, 3 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 2/03/2020 **Analysis Date:** 3/02/2020

Sampler(s): Lochlan Browne (LAA001393)

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03,* with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Lochlan Browne	**Oliver Thomas**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent decontamination zone - on star picket	07:21	15:27	957	0 / 100	<0.01
02	Northern perimeter of work area, adjacent containment cell - on temporary fencing	07:23	15:31	961	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent water tank - on star picket	07:25	15:35	965	0 / 100	<0.01
04	Southern of work area, adjacent green skip bin - on star picket	07:27	15:39	969	1 / 100	<0.01
05	Within excavator cabin	07:31	15:33	950	1 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number not within moving plant/machinery

Image courtesy of https://www.google.com.au/maps, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.029 / C0009
Monitoring Date:	Monday, 2 March 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.030 / C0009
Version: V1
[redacted]

Thursday, 5 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 3/03/2020 **Analysis Date:** 4/03/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03,* with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	**Reviewed and authorised by:**
[redacted]	
Oliver Thomas	**Oliver Thomas**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent decontamination zone - on star picket	06:57	15:01	963	0 / 100	<0.01
02	Northern perimeter of work area, adjacent containment cell - on temporary fencing	07:01	15:03	959	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent water tank - on star picket	07:05	15:05	955	0 / 100	<0.01
04	Southern of work area, adjacent green skip bin - on star picket	07:09	15:07	951	2 / 100	<0.01
05	Within excavator cabin	07:13	15:09	947	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).
This document shall not be reproduced except in full.

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Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.030 / C0009
Monitoring Date:	Tuesday, 3 March 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.031 / C0009
Version: V1
[redacted]

Monday, 9 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 6/03/2020 **Analysis Date:** 9/03/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Lochlan Browne	**Kim Femia**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent decontamination zone - on star picket	08:01	VOID*	VOID*	0 / 100	VOID*
02	Northern perimeter of work area, adjacent containment cell - on temporary fencing	07:41	VOID*	VOID*	0 / 100	VOID*
03	Eastern perimeter of work area, adjacent water tank - on star picket	07:46	VOID*	VOID*	2 / 100	VOID*
04	Southern perimeter of work area, adjacent green skip bin - on star picket	07:52	VOID*	VOID*	1 / 100	VOID*
05	Within excavator cabin	07:56	VOID*	VOID*	2.5 / 100	VOID*

*Note: *All samples were void due to inability to calibrate and collect sampling pumps at the end of the sampling shift due to site access constraints.*

The results displayed in this report relate only to the items tested.

The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.031 / C0009
Monitoring Date:	Friday, 6 March 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.032 / C0009
Version: V1
[redacted]

Wednesday, 11 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 9/03/2020 **Analysis Date:** 10/03/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	**Reviewed and authorised by:**
[redacted]	
Oliver Thomas **Approved Counter**	**Oliver Thomas** **Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent decontamination zone - on star picket	07:35	15:31	947	0 / 100	<0.01
02	Northern perimeter of work area, adjacent containment cell - on temporary fencing	07:39	15:33	943	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent water tank - on star picket	07:42	15:35	941	0 / 100	<0.01
04	Southern of work area, adjacent green skip bin - on star picket	07:45	15:37	939	1 / 100	<0.01
05	Within excavator cabin	07:48	15:40	939	0.5 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
[ ]	Approximate work area boundary
X 01	Air monitor location and sample number

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.032 / C0009
Monitoring Date:	Monday, 9 March 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.033 / C0009
Version: V1
[redacted]

Wednesday, 11 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 10/03/2020 **Analysis Date:** 11/03/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	**Reviewed and authorised by:**
[redacted]	
Kim Femia **Approved Counter**	**Kim Femia** **Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent decontamination zone - on star picket	07:01	15:26	1005	1 / 100	<0.01
02	Northern perimeter of work area, adjacent containment cell - on temporary fencing	07:03	15:15	979	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent water tank - on star picket	07:05	15:18	981	1 / 100	<0.01
04	Southern perimeter of work area, adjacent green skip bin - on star picket	07:07	15:22	985	0.5 / 100	<0.01
05	Within excavator cabin	07:10	15:24	983	2 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.033 / C0009
Monitoring Date:	Tuesday, 10 March 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.034 / C0009
Version: V1
[redacted]

Thursday, 12 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 11/03/2020 **Analysis Date:** 12/03/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03,* with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	**Reviewed and authorised by:**
[redacted]	
Kim Femia **Approved Counter**	**Kim Femia** **Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent decontamination zone - on star picket	07:26	15:22	947	0 / 100	<0.01
02	Northern perimeter of work area, adjacent containment cell - on temporary fencing	07:15	15:10	945	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent water tank - on star picket	07:18	15:12	943	0 / 100	<0.01
04	Southern perimeter of work area, adjacent green skip bin - on star picket	07:22	15:16	943	0 / 100	<0.01
05	Within excavator cabin	07:24	15:19	945	2 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.034 / C0009
Monitoring Date:	Wednesday, 11 March 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.035 / C0009
Version: V1
[redacted]

Friday, 13 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 12/03/2020 **Analysis Date:** 13/03/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Kim Femia **Approved Counter**	**Kim Femia** **Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent decontamination zone - on star picket	07:26	15:37	977	1 / 100	<0.01
02	Northern perimeter of work area, adjacent containment cell - on temporary fencing	07:12	15:26	983	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent water tank - on star picket	07:16	15:29	981	0 / 100	<0.01
04	Southern perimeter of work area, adjacent green skip bin - on star picket	07:19	15:32	981	0 / 100	<0.01
05	Within excavator cabin	07:23	15:34	977	2 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.035 / C0009
Monitoring Date:	Thursday, 12 March 2020

Jason Stephenson

[redacted]

EDP Reference: S-00573.AAM.036 / C0009
Version: V1

[redacted]

Monday, 16 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 13/03/2020 **Analysis Date:** 16/03/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Kim Femia **Approved Counter**	**Kim Femia** **Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent decontamination zone - on star picket	07:37	15:51	983	1 / 100	<0.01
02	Northern perimeter of work area, adjacent containment cell - on temporary fencing	07:26	15:36	975	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent water tank - on star picket	07:29	15:40	977	1 / 100	<0.01
04	Southern perimeter of work area, adjacent green skip bin - on star picket	07:32	15:43	977	0 / 100	<0.01
05	Within excavator cabin	07:34	15:47	981	2 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.036 / C0009
Monitoring Date:	Friday, 13 March 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.037 / C0009
Version: V1
[redacted]

Thursday, 19 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 18/03/2020 **Analysis Date:** 19/03/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Kim Femia **Approved Counter**	**Kim Femia** **Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent decontamination zone - on star picket	07:41	15:20	913	5.5 / 100	<0.01
02	Northern perimeter of work area, adjacent containment cell - on temporary fencing	07:25	15:10	925	1 / 100	<0.01
03	Eastern perimeter of work area, adjacent water tank - on star picket	07:30	15:13	921	0 / 100	<0.01
04	Southern perimeter of work area, adjacent green skip bin - on star picket	07:35	15:16	917	2 / 100	<0.01
05	Within excavator cabin	07:38	15:18	915	3 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.037 / C0009
Monitoring Date:	Wednesday, 18 March 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.038 / C0009
Version: V1
[redacted]

Friday, 20 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 19/03/2020 **Analysis Date:** 20/03/2020

Sampler(s): Calum Connaughton under direction of Lochlan Browne (LAA001393).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Kim Femia	**Kim Femia**
Approved Counter	**Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent decontamination zone - on star picket	07:20	16:35	1104	0 / 100	<0.01
02	Northern perimeter of work area, adjacent containment cell - on temporary fencing	07:10	16:22	1098	0.5 / 100	<0.01
03	Eastern perimeter of work area, adjacent water tank - on star picket	07:13	16:26	1100	1 / 100	<0.01
04	Southern perimeter of work area, adjacent green skip bin - on star picket	07:16	16:31	1104	4 / 100	<0.01
05	Within excavator cabin	07:18	16:33	1104	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.038 / C0009
Monitoring Date:	Thursday, 19 March 2020

Jason Stephenson

[redacted]

EDP Reference: S-00573.AAM.039 / C0009
Version: V1

[redacted]

Monday, 23 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 20/03/2020 **Analysis Date:** 23/03/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by: [redacted]

Kim Femia
Approved Counter

Reviewed and authorised by:

Kim Femia
Approved Signatory

NATA

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent decontamination zone - on star picket	07:52	15:16	883	0 / 100	<0.01
02	Northern perimeter of work area, adjacent containment cell - on temporary fencing	07:40	15:06	887	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent water tank - on star picket	07:43	15:09	887	1 / 100	<0.01
04	Southern perimeter of work area, adjacent green skip bin - on star picket	07:46	15:11	885	1 / 100	<0.01
05	Within excavator cabin	07:58	15:13	865	1 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.039 / C0009
Monitoring Date:	Friday, 20 March 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.040 / C0009
Version: V1
[redacted]

Tuesday, 24 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 23/03/2020 **Analysis Date:** 24/03/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Kim Femia **Approved Counter**	**Kim Femia** **Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent decontamination zone - on star picket	07:14	15:20	967	0 / 100	<0.01
02	Northern perimeter of work area, adjacent containment cell - on temporary fencing	07:10	15:17	969	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent water tank - on star picket	07:22	15:28	967	0 / 100	<0.01
04	Southern perimeter of work area, adjacent green skip bin - on star picket	07:17	15:23	967	0 / 100	<0.01
05	Within excavator cabin	07:20	15:25	965	1 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).
This document shall not be reproduced except in full.

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Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.040 / C0009
Monitoring Date:	Monday, 23 March 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.041 / C0009
Version: V1
[redacted]

Wednesday, 25 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 24/03/2020 **Analysis Date:** 25/03/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Kim Femia **Approved Counter**	**Kim Femia** **Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent decontamination zone - on star picket	07:20	15:14	943	1 / 100	<0.01
02	Northern perimeter of work area, adjacent containment cell - on temporary fencing	07:17	15:09	939	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent water tank - on star picket	07:28	15:17	933	0 / 100	<0.01
04	Southern perimeter of work area, adjacent green skip bin - on star picket	07:23	15:19	947	0 / 100	<0.01
05	Within excavator cabin	07:25	15:21	947	1 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.041 / C0009
Monitoring Date:	Tuesday, 24 March 2020

Jason Stephenson

[redacted]

EDP Reference: S-00573.AAM.042 / C0009
Version: V1

[redacted]

Thursday, 26 March 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 25/03/2020 **Analysis Date:** 26/03/2020

Sampler(s): Calum Connaughton under direction of Kim Femia (LAA001143).

Summary of Works: Separation and segregation of asbestos impacted fill materials from the site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Kim Femia **Approved Counter**	**Kim Femia** **Approved Signatory**

Work Area: Stage 4 asbestos in soil remedial works area.

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Western perimeter of work area, adjacent decontamination zone - on star picket	07:09	15:12	961	0 / 100	<0.01
02	Northern perimeter of work area, adjacent containment cell - on temporary fencing	07:14	15:08	943	0 / 100	<0.01
03	Eastern perimeter of work area, adjacent water tank - on star picket	07:17	15:14	949	0 / 100	<0.01
04	Southern perimeter of work area, adjacent green skip bin - on star picket	07:19	15:16	949	0 / 100	<0.01
05	Within excavator cabin	07:21	15:19	951	0 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.042 / C0009
Monitoring Date:	Wednesday, 25 March 2020

Jason Stephenson
[redacted]

EDP Reference: S-00573.AAM.043 / C0009
Version: V1
[redacted]

Tuesday, 7 April 2020

Asbestos-Fibre Air Monitoring Report - Highland Views Development Site, Glenmore Park NSW

Monitoring Type: Control Monitoring **Monitoring Date:** 7/04/2020 **Analysis Date:** 7/04/2020

Sampler(s): Calum Connaughton

Summary of Works: Removal of asbestos-impacted soil from site.

Environmental Conditions: No environmental conditions that would affect the interpretation of results identified during sampling.

Test Method: Air monitoring and fibre counting was undertaken in accordance with in-house test method *EDPLMS-03*, with reference to the National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)] and ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Monitoring Methodology: Monitors were positioned in static locations surrounding the work area. Control monitoring was conducted to measure the potential levels of airborne asbestos-fibre concentrations during the works to confirm the control measures implemented were satisfactory.

Laboratory: EDP Laboratory: Suite 101, 52 Atchison Street, St Leonards NSW
Accredited for compliance with ISO/IEC 17025:2017 - Testing
NATA Accreditation Number: 20600

Approval:

Analysed by:	Reviewed and authorised by:
[redacted]	
Kim Femia **Approved Counter**	**Kim Femia** **Approved Signatory**

Work Area: Southern end of site

No.	Sample Location	Start Time	Finish Time	Volume (L)	Fibres / Fields	Result (f/ml)
01	Northern corner of removal works area - on star picket	09:00	11:00	466	2 / 100	<0.01
02	Southern corner of removal works area - on star picket	09:01	11:03	474	2 / 100	<0.01
03	Within removal works area - inside excavator cab	09:02	11:05	478	1 / 100	<0.01

The results displayed in this report relate only to the items tested.
The measured results fall within a 95% confidence interval (calculated using a coverage factor of 2) in accordance with the NOHSC:3003(2005).

edp

Highland Views Development Site,
Glenmore Park NSW

AIR MONITORING LOCATIONS

Not to scale

LEGEND:	
	Approximate work area boundary
X 01	Air monitor location and sample number

Image courtesy of https://maps.six.nsw.gov.au/, 2020

DETAILS:	
Report Name:	Asbestos-Fibre Air Monitoring Report
Client Name:	CCL Development
EDP Reference:	S-00573.AAM.043 / C0009
Monitoring Date:	Tuesday, 7 April 2020

Appendix G: Laboratory Reports

CHAIN OF CUSTODY - Client

ENVIROLAB GROUP - National phone number 1300 42 43 44

Sydney Lab - Envirolab Services
12 Ashley St, Chatswood, NSW 2067
Ph 02 9910 6200 / sydney@envirolab.com.au

Perth Lab - MPL Laboratories
16-18 Hayden Crt Myaree, WA 6154
Ph 08 9317 2505 / lab@mpl.com.au

Melbourne Lab - Envirolab Services
1A Dalmore Drive Scoresby VIC 3179
Ph 03 9763 2500 / melbourne@envirolab.com.au

Brisbane Office - Envirolab Services
20a, 10-20 Depot St, Banyo, QLD 4014
Ph 07 3266 9532 / brisbane@envirolab.com.au

Adelaide Office - Envirolab Services
7a The Parade, Norwood, SA 5067
Ph 0406 350 706 / adelaide@envirolab.com.au

Client:	EDP Consultants
Contact:	Lochlan Browne
PM:	Ryan Jacka
Sampler:	Lochlan Browne
Address:	Suite 101, 52 Atchison Street, St Leonards NSW 2065
Phone:	**Mob:** [redacted]
Email:	[redacted]

Client Project Name / Number / Site etc (ie report title): S-00573.001 / C0009

PO No.:

Envirolab Quote No. :

Date results required: **Standard**

Or choose: **standard / 74hr / 48hr / 24hr / same**

Note: Inform lab in advance if urgent turnaround is required - surcharges apply

Report format: esdat / equis /

Lab Comments:

Sample information					Tests Required														Comments
Envirolab Sample ID	**Client Sample ID or information**	**Depth**	**Date sampled**	**Type of sample**	**Asbestos NEPM**	**Asbestos ID**													**Provide as much information about the sample as you can**
1	VS01_Surface	-	5/02/2020	Soil	X														Labelled as SS01
2	VS02_Surface	-	5/02/2020	Soil	X														Trip blank
3	VS03_Surface	-	5/02/2020	Soil	X														Trip spike
4	VS04_Surface	-	5/02/2020	Soil	X														
5	SP01_01_0.6	0.6	6/02/2002	Soil	X														
6	SP01_02_1.2	1.2	6/02/2002	Soil	X														
7	SP01_03_0.8	0.8	6/02/2002	Soil	X														
8	SP01_04_1.8	1.8	6/02/2002	Soil	X														
9	SP01_05_1.5	1.5	6/02/2002	Soil	X														
10	SP01_06_0.8	0.8	6/02/2002	Soil	X														
11	SP01_06_ Frag	0.8	6/02/2002	Fragment		X													
12	SP01_07_0.1	0.1	6/02/2002	Soil	X														
13	SP01_08_0.1	0.1	6/02/2002	Soil	X														

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 236166
Date Received: 6/2/20
Time Received: 1657
Received By: JG
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished by (Company): EDP Consultants
Print Name: Lochlan Browne
Date & Time: 6/02/2020 17:00 PM
Signature: [redacted]

Received by (Company): EO SYD
Print Name: Jason Day
Date & Time: 6/2/20 1657
Signature: [redacted]

Lab use only:
Samples Received: Cool or Ambient (circle one)
Temperature Received at: 23.4 **(if applicable)**
Transported by: Hand delivered / courier

White - Lab copy / Blue - Client copy / Pink - Retain in Book

Envirolab Services Pty Ltd
ABN 37 112 535 645
[redacted]

SAMPLE RECEIPT ADVICE

Client Details

Client	EDP Consultants Pty Ltd
Attention	Lochlan Browne, Ryan Jacka

Sample Login Details

Your reference	S-00573.001 / C0009
Envirolab Reference	236166
Date Sample Received	16/02/2020
Date Instructions Received	06/02/2020
Date Results Expected to be Reported	13/02/2020

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	12 Soil, 1 Material
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	23.4
Cooling Method	None
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone:** [redacted]
Fax: 02 9910 6201	**Fax:**
Email: ahie@envirolab.com.au	**Email:**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645

[redacted]

Sample ID	Asbestos ID - soils NEPM - ASB-001	Asbestos ID - materials
VS01_Surface	✓	
VS02_Surface	✓	
VS03_Surface	✓	
VS04_Surface	✓	
SP_01_0.6-0.6	✓	
SP_02_1.2-1.2	✓	
SP_03_0.8-0.8	✓	
SP_04_1.8-1.8	✓	
SP_05_1.5-1.5	✓	
SP_06_0.8-0.8	✓	
SP_06_Frag-0.8		✓
SP_07_0.1-0.1	✓	
SP_08_0.1-0.1	✓	

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info
Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Envirolab Services Pty Ltd
ABN 37 112 535 645
[redacted]

CERTIFICATE OF ANALYSIS 236166

Client Details

Client	EDP Consultants Pty Ltd
Attention	Lochlan Browne, Ryan Jacka
Address	Suite 6/52 Atchison St, ST LEONARDS, NSW

Sample Details

Your Reference	**S-00573.001 / C0009**
Number of Samples	12 Soil, 1 Material
Date samples received	16/02/2020
Date completed instructions received	06/02/2020

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	13/02/2020
Date of Issue	11/02/2020

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

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

Asbestos Approved By
Analysed by Asbestos Approved Identifier: Wonnie Condos, Aida Marner
Authorised by Asbestos Approved Signatory: Lucy Zhu
Results Approved By
Lucy Zhu, Asbestos Supervisor

Authorised By
[redacted]
Nancy Zhang, Laboratory Manager

Asbestos ID - soils NEPM - ASB-001						
Our Reference		236166-1	236166-2	236166-3	236166-4	236166-5
Your Reference	UNITS	VS01_Surface	VS02_Surface	VS03_Surface	VS04_Surface	SP_01_0.6
Depth		-	-	-	-	0.6
Date Sampled		05/02/2020	05/02/2020	05/02/2020	05/02/2020	06/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	10/02/2020	10/02/2020	10/02/2020	10/02/2020	10/02/2020
Sample mass tested	g	657.89	516.1	577.22	520.71	689.77
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		236166-6	236166-7	236166-8	236166-9	236166-10
Your Reference	UNITS	SP_02_1.2	SP_03_0.8	SP_04_1.8	SP_05_1.5	SP_06_0.8
Depth		1.2	0.8	1.8	1.5	0.8
Date Sampled		06/02/2020	06/02/2020	06/02/2020	06/02/2020	06/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	10/02/2020	10/02/2020	10/02/2020	10/02/2020	10/02/2020
Sample mass tested	g	684.58	656.49	645.71	520.74	611.84
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	Chrysotile asbestos detected Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	0.1426	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	Chrysotile Amosite Crocidolite	See Above	Chrysotile
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	0.0321	0.0742	0.0346
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	0.0050	0.0143	0.0057

Asbestos ID - soils NEPM - ASB-001			
Our Reference		236166-12	236166-13
Your Reference	UNITS	SP_07_0.1	SP_08_0.1
Depth		0.1	0.1
Date Sampled		06/02/2020	06/02/2020
Type of sample		Soil	Soil
Date analysed	-	10/02/2020	10/02/2020
Sample mass tested	g	569.95	611.52
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	Chrysotile	No visible asbestos detected
ACM >7mm Estimation*	g	–	–
FA and AF Estimation*	g	0.0065	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	0.0011	<0.001

Asbestos ID - materials		
Our Reference		236166-11
Your Reference	UNITS	SP_06_Frag
Depth		0.8
Date Sampled		06/02/2020
Type of sample		Material
Date analysed	-	11/02/2020
Mass / Dimension of Sample	-	30x30x4mm
Sample Description	-	Beige fibre cement material
Asbestos ID in materials	-	No asbestos detected Organic fibres detected
Trace Analysis	-	No asbestos detected

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.

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

Report Comments

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Sample 236166-8; Chrysotile, Amosite and Crocidolite asbestos identified in matted material, total weight 0.0401g.

Sample 236166-9; Chrysotile asbestos identified in matted material, total weight 0.0928g.

Sample 236166-10; Chrysotile asbestos identified in matted material, total weight 0.0433g.

Sample 236166-11; Chrysotile asbestos identified in matted material, total weight 0.0081g.

CHAIN OF CUSTODY - Client

ENVIROLAB GROUP - National phone number 1300 42 43 44

Sydney Lab - Envirolab Services
12 Ashley St, Chatswood, NSW 2067
Ph 02 9910 6200 / sydney@envirolab.com.au

Perth Lab - MPL Laboratories
16-18 Hayden Crt Myaree, WA 6154
Ph 08 9317 2505 / lab@mpl.com.au

Melbourne Lab - Envirolab Services
1A Dalmore Drive Scoresby VIC 3179
Ph 03 9763 2500 / melbourne@envirolab.com.au

Brisbane Office - Envirolab Services
20a, 10-20 Depot St, Banyo, QLD 4014
Ph 07 3266 9532 / brisbane@envirolab.com.au

Adelaide Office - Envirolab Services
7a The Parade, Norwood, SA 5067
Ph 0406 350 706 / adelaide@envirolab.com.au

Client:	EDP Consultants
Contact:	Lochlan Browne
PM:	Ryan Jacka
Sampler:	Lochlan Browne
Address:	Suite 101, 52 Atchison Street, St Leonards NSW 2065
Phone:	8484 5810 **Mob:** 0432 226 858
Email:	lochlan.browne@edp-au.com; ryan.jacka@edp-au.com

Client Project Name / Number / Site etc (ie report title):	D0001 / S-00573-002
PO No.:	
Envirolab Quote No. :	
Date results required:	Standard TAT 09/03/2020
Or choose:	*Note: Inform lab in advance if urgent turnaround is required - surcharges apply*
Report format: esdat / equis /	
Lab Comments:	

Envirolab Sample ID	Client Sample ID or Information	Depth	Date sampled	Type of sample	asbestos NEPM	Asbestos ID	Comments
1	[redacted] SP01-0.3 SP01-0.3	0.3	2/03/2020	Soil	X		
2	[redacted] SP01-10-0.4 SP01-10-0.4	0.4	2/03/2020	Soil	X		
3	SP01_11_0.8	0.8	2/03/2020	Soil	X		
4	SP01_12_0.5	0.5	2/03/2020	Soil	X		
5	SP01_13_0.3	0.3	2/03/2020	Soil	X		
6	SP01_14_0.4	0.4	2/03/2020	Soil	X		
7	SP01_15_1.5	1.5	2/03/2020	Soil	X		
8	SP01_16_1	1	2/03/2020	Soil	X		
9	SP01_17_0.8	0.8	2/03/2020	Soil	X		
10	SP01_18_0.3	0.3	2/03/2020	Soil	X		
11	SP01_19_0.4	0.4	2/03/2020	Soil	X		
12	SP01_20_1	1	2/03/2020	Soil	X		
13	SP01_21_0.5	0.5	2/03/2020	Soil	X		
14	SP01_22_0.6	0.6	2/03/2020	Soil	X		
15	SP01_23_1.2	1.2	2/03/2020	Soil	X		
16	SP01_12_Frag	0.5	2/03/2020	Fragment		X	
17	SP01_17_Frag	0.8	2/03/2020	Fragment		X	

Relinquished by (Company):	EDP Consultants
Print Name:	Lochlan Browne
Date & Time:	2/03/2020
Signature:	[redacted]

Received by (Company):	ENS Syd.
Print Name:	S. Bolton
Date & Time:	02/03/20 1709
Signature:	[redacted]

Lab use only:
Samples Received: Cool or Ambient (circle one)
Temperature Received at: 25.3 **(if applicable)**
Transported by: Hand delivered / courier

White - Lab copy / Blue - Client copy / Pink - Retain in Book Page No:

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 237977

Date Received: 02/03/20
Time Received: 1709
Received by: SB
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Envirolab Services Pty Ltd
ABN 37 112 535 645
[redacted]

SAMPLE RECEIPT ADVICE

Client Details

Client	EDP Consultants Pty Ltd
Attention	Lochlan Browne, Ryan Jacka

Sample Login Details

Your reference	D0001/ S-00573-002
Envirolab Reference	237977
Date Sample Received	02/03/2020
Date Instructions Received	02/03/2020
Date Results Expected to be Reported	09/03/2020

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	15 Soil, 2 Material
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	NA
Cooling Method	None
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
[redacted]	

Analysis Underway, details on the following page:

Document Set ID: 9387088
Version: 1, Version Date: 23/11/2020

Envirolab Services Pty Ltd
ABN 37 112 535 645
[redacted]

Sample ID	Asbestos ID - materials	Asbestos ID - soils NEPM - ASB-001
SP01-09-0.3		✓
SP01-10-0.4		✓
SP01-11-0.8		✓
SP01-12-0.5		✓
SP01-13-0.3		✓
SP01-14-0.4		✓
SP01-15-1.5		✓
SP01-16-1		✓
SP01-17-0.8		✓
SP01-18-0.3		✓
SP01-19-0.4		✓
SP01-20-1		✓
SP01-21-0.5		✓
SP01-22-0.6		✓
SP01-23-1.0		✓
SP01-12_frag-0.5	✓	
SP01_17_Frag-0.8	✓	

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info
Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Envirolab Services Pty Ltd
ABN 37 112 535 645
[redacted]

CERTIFICATE OF ANALYSIS 237977

Client Details

Client	EDP Consultants Pty Ltd
Attention	Lochlan Browne, Ryan Jacka
Address	Suite 6/52 Atchison St, ST LEONARDS, NSW

Sample Details

Your Reference	**C0009/ S-00573-002**
Number of Samples	15 Soil, 2 Material
Date samples received	02/03/2020
Date completed instructions received	02/03/2020

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	09/03/2020
Date of Issue	10/03/2020
Reissue Details	This report replaces R00 created on 09/03/2020 due to: Project ID Amended (Client Request)

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

Asbestos Approved By
Analysed by Asbestos Approved Identifier: Wonnie Condos
Authorised by Asbestos Approved Signatory: Lucy Zhu
Results Approved By
Lucy Zhu, Asbestos Supervisor

Authorised By
[redacted]
Nancy Zhang, Laboratory Manager

Asbestos ID - materials			
Our Reference		237977-16	237977-17
Your Reference	UNITS	SP01-12_frag	SP01_17_Frag
Depth		0.5	0.8
Date Sampled		02/03/2020	02/03/2020
Type of sample		Material	Material
Date analysed	-	04/03/2020	04/03/2020
Mass / Dimension of Sample	-	60x50x3mm	35x30x6mm
Sample Description	-	Beige fibre cement material	Beige fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected
Trace Analysis	-	[NT]	[NT]

Asbestos ID - soils NEPM - ASB-001						
Our Reference		237977-1	237977-2	237977-3	237977-4	237977-5
Your Reference	UNITS	SP01-09	SP01-10	SP01-11	SP01-12	SP01-13
Depth		0.3	0.4	0.8	0.5	0.3
Date Sampled		02/03/2020	02/03/2020	02/03/2020	02/03/2020	02/03/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	06/03/2020	06/03/2020	06/03/2020	06/03/2020	06/03/2020
Sample mass tested	g	797.88	785.4	782.87	854.09	765.83
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	Chrysotile asbestos detected Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	Chrysotile asbestos detected Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	0.1937	<0.1	0.6282	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	See Above	Chrysotile	See Above	Chrysotile	Chrysotile
ACM >7mm Estimation*	g	0.1545	0.0240	0.4918	–	–
FA and AF Estimation*	g	–	–	–	0.0056	0.0220
ACM >7mm Estimation*	%(w/w)	0.0194	<0.01	0.0628	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	0.0029

Asbestos ID - soils NEPM - ASB-001						
Our Reference		237977-6	237977-7	237977-8	237977-9	237977-10
Your Reference	UNITS	SP01-14	SP01-15	SP01-16	SP01-17	SP01-18
Depth		0.4	1.5	1	0.8	0.3
Date Sampled		02/03/2020	02/03/2020	02/03/2020	02/03/2020	02/03/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	06/03/2020	06/03/2020	06/03/2020	06/03/2020	06/03/2020
Sample mass tested	g	856.85	777.27	820.59	777.67	791.35
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected Synthetic mineral fibres detected	Chrysotile asbestos detected Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected Synthetic mineral fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected Synthetic mineral fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	0.1270	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	Chrysotile	See Above	Chrysotile Amosite	Chrysotile	Chrysotile
ACM >7mm Estimation*	g	–	–	–	–	0.0647
FA and AF Estimation*	g	0.0201	0.0987	0.0136	0.0393	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01

Asbestos ID - soils NEPM - ASB-001						
Our Reference		237977-6	237977-7	237977-8	237977-9	237977-10
Your Reference	UNITS	SP01-14	SP01-15	SP01-16	SP01-17	SP01-18
Depth		0.4	1.5	1	0.8	0.3
Date Sampled		02/03/2020	02/03/2020	02/03/2020	02/03/2020	02/03/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
FA and AF Estimation*#2	%(w/w)	0.0023	0.0127	0.0017	0.0051	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		237977-11	237977-12	237977-13	237977-14	237977-15
Your Reference	UNITS	SP01-19	SP01-20	SP01-21	SP01-22	SP01-23
Depth		0.4	1	0.5	0.6	1.0
Date Sampled		02/03/2020	02/03/2020	02/03/2020	02/03/2020	02/03/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	06/03/2020	06/03/2020	06/03/2020	06/03/2020	06/03/2020
Sample mass tested	g	733.12	807.25	730.79	825.44	815.53
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	Chrysotile asbestos detected Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected Synthetic mineral fibres detected	Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected Synthetic mineral fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	0.5726	<0.1	0.2198	0.1511
Asbestos ID in soil <0.1g/kg*	-	Chrysotile	See Above	Chrysotile	See Above	See Above
ACM >7mm Estimation*	g	0.0269	0.4623	–	0.1711	0.1030
FA and AF Estimation*	g	–	–	0.0121	0.0103	0.0202
ACM >7mm Estimation*	%(w/w)	<0.01	0.0573	<0.01	0.0207	0.0126
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	0.0017	0.0012	0.0025

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.

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

Report Comments

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

CHAIN OF CUSTODY - Client

ENVIROLAB GROUP - National phone number 1300 42 43 44

Sydney Lab - Envirolab Services
12 Ashley St, Chatswood, NSW 2067
Ph 02 9910 6200 / sydney@envirolab.com.au

Perth Lab - MPL Laboratories
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1A Dalmore Drive Scoresby VIC 3179
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Ph 07 3266 9532 / brisbane@envirolab.com.au

Adelaide Office - Envirolab Services
7a The Parade, Norwood, SA 5067
Ph 0406 350 706 / adelaide@envirolab.com.au

Client: EDP Consultants	**Client Project Name / Number / Site etc (ie report title):** C0009 / S-00573.003
Contact: Lochlan Browne	
PM: Lochlan Browne	**PO No.:**
Sampler: Lochlan Browne	**Envirolab Quote No. :**
Address: Suite 101, 52 Atchison Street, St Leonards NSW 2065	**Date results required:** Or choose: Standard TAT. *Note: Inform lab in advance if urgent turnaround is required - surcharges apply*
Phone: [redacted]	**Report format: esdat / equis /**
Email: [redacted]	**Lab Comments:**

Sample information					Tests Required													Comments
Envirolab Sample ID	Client Sample ID or information	Depth	Date sampled	Type of sample	nepm 500 ml ASB	Combo 6	Asbestos id											Provide as much information about the sample as you can
1	SP01_24_1.0	1	19/03/2020	Soil	X													
2	SP01_25_0.8	0.8	19/03/2020	Soil	X													
3	SP01_26_1.1	1.1	19/03/2020	Soil	X													
4	SP01_27_0.3	0.3	19/03/2020	Soil	X													
5	SP01_28_0.8	0.8	19/03/2020	Soil	X													
6	SP01_29_0.5	0.5	19/03/2020	Soil	X													
7	SP01_30_0.6	0.6	19/03/2020	Soil	X													
8	SP01_31_0.4	0.4	19/03/2020	Soil	X													
9	SP01_32_0.6	0.6	19/03/2020	Soil	X													
10	SP01_33_0.3	0.3	19/03/2020	Soil	X													
11	SP01_34_1.2	1.2	19/03/2020	Soil	X													
12	SP01_35_1.2	1.2	19/03/2020	Soil	X													
13	SP01_36_1.8	1.8	19/03/2020	Soil	X													
14	SP01_37_0.9	0.9	19/03/2020	Soil	X													
15	SP01_38_1.0	1	19/03/2020	Soil	X													
16	SP01_39_1.5	1.5	19/03/2020	Soil	X													
17	SP01_40_1.8	1.8	19/03/2020	Soil	X													
18	SP01_41_0.5	0.5	19/03/2020	Soil	X													
19	SP01_42_1.1	1.1	19/03/2020	Soil	X													
20	SP01_43_0.5	0.5	19/03/2020	Soil	X													
21	SP02_01_0.5	0.5	19/03/2020	Soil		X												
22	SP02_02_0.3	0.3	19/03/2020	Soil		X												
23	SP02_03_0.3	0.3	19/03/2020	Soil		X												
24	SP02_AS001	-	19/03/2020	Material			X											

ENVIROLAB GROUP
~~Envirolab Services~~
~~12 Ashley St~~
~~Chatswood NSW 2067~~
~~Ph: (02) 9910 6200~~

Job No: 239512

Date Received: 20-03-20
Time Received: 9:50
Received by: Helen
Temp: ~~Cool~~/Ambient
Cooling: Ice/~~Icepack~~
Security: Intact/~~Broken~~/~~None~~

Relinquished by (Company): EDP Consultants	**Received by (Company):** ELS
Print Name: Lochlan Browne	**Print Name:** Helen W
Date & Time: 20/03/2020	**Date & Time:** 20-03-20 9:50
Signature: [redacted]	**Signature:** [redacted]

Lab use only:
Samples Received: Cool or Ambient (circle one)
Temperature Received at: (if applicable)
Transported by: Hand delivered / courier

Envirolab Services Pty Ltd
ABN 37 112 535 645
[redacted]

SAMPLE RECEIPT ADVICE

Client Details

Client	EDP Consultants Pty Ltd
Attention	Lochlan Browne

Sample Login Details

Your reference	C0009/S-00573.003
Envirolab Reference	239312
Date Sample Received	20/03/2020
Date Instructions Received	20/03/2020
Date Results Expected to be Reported	27/03/2020

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	23 Soil, 1 Material
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	5.5
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
[redacted]	

Analysis Underway, details on the following page:

Document Set ID: 9387088
Version: 1, Version Date: 23/11/2020

Envirolab Services Pty Ltd
ABN 37 112 535 645

[redacted]

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	Asbestos ID - materials
SP01_24_1.0-1								✓	
SP01_25_0.8-0.8								✓	
SP01_26_1.1-1.1								✓	
SP01_27_0.3-0.3								✓	
SP01_28_0.8-0.8								✓	
SP01_29_0.5-0.5								✓	
SP01_30_0.6-0.6								✓	
SP01_31_0.4-0.4								✓	
SP01_32_0.6-0.6								✓	
SP01_33_0.3-0.3								✓	
SP01_34_1.2-1.2								✓	
SP01_35_1.2-1.2								✓	
SP01_36_1.8-1.8								✓	
SP01_37_0.9-0.9								✓	
SP01_38_1.0-1								✓	
SP01_39_1.5-1.5								✓	
SP01_40_1.8-1.8								✓	
SP01_41_0.5-0.5								✓	
SP01_42_1.1-1.1								✓	
SP01_43_0.5-0.5								✓	
SP02_01_0.5-0.5	✓	✓	✓	✓	✓	✓	✓		
SP02_02_0.3-0.3	✓	✓	✓	✓	✓	✓	✓		
SP02_03_0.3-0.3	✓	✓	✓	✓	✓	✓	✓		
SP02_AS001									✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Document Set ID: 9387088
Version: 1, Version Date: 23/11/2020

Envirolab Services Pty Ltd
ABN 37 112 535 645
[redacted]

CERTIFICATE OF ANALYSIS 239312

Client Details

Client	EDP Consultants Pty Ltd
Attention	Lochlan Browne
Address	Suite 6/52 Atchison St, ST LEONARDS, NSW

Sample Details

Your Reference	**C0009/S-00573.003**
Number of Samples	23 Soil, 1 Material
Date samples received	20/03/2020
Date completed instructions received	20/03/2020

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	27/03/2020
Date of Issue	27/03/2020

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Asbestos Approved By

Analysed by Asbestos Approved Identifier: Panika Wongchanda, Lucy Zhu

Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By

Jaimie Loa-Kum-Cheung, Metals Supervisor

Josh Williams, Senior Chemist

Lucy Zhu, Asbestos Supervisor

Ridwan Wijaya, Lab Team Leader

Steven Luong, Organics Supervisor

Authorised By

[redacted]

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil				
Our Reference		239312-21	239312-22	239312-23
Your Reference	UNITS	SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date extracted	-	23/03/2020	23/03/2020	23/03/2020
Date analysed	-	26/03/2020	26/03/2020	26/03/2020
TRH C_6 - C_9	mg/kg	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	100	95	94

svTRH (C10-C40) in Soil				
Our Reference		239312-21	239312-22	239312-23
Your Reference	UNITS	SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date extracted	-	23/03/2020	23/03/2020	23/03/2020
Date analysed	-	24/03/2020	24/03/2020	24/03/2020
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50
Surrogate o-Terphenyl	%	83	83	84

PAHs in Soil				
Our Reference		239312-21	239312-22	239312-23
Your Reference	UNITS	SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date extracted	-	23/03/2020	23/03/2020	23/03/2020
Date analysed	-	24/03/2020	24/03/2020	24/03/2020
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	91	83	81

Organochlorine Pesticides in soil				
Our Reference		239312-21	239312-22	239312-23
Your Reference	UNITS	SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date extracted	-	23/03/2020	23/03/2020	23/03/2020
Date analysed	-	24/03/2020	24/03/2020	24/03/2020
alpha-BHC	mg/kg	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	89	80	83

Organophosphorus Pesticides in Soil				
Our Reference	UNITS	239312-21	239312-22	239312-23
Your Reference		SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date extracted	-	23/03/2020	23/03/2020	23/03/2020
Date analysed	-	24/03/2020	24/03/2020	24/03/2020
Dichlorvos	mg/kg	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	89	80	83

PCBs in Soil				
Our Reference		239312-21	239312-22	239312-23
Your Reference	UNITS	SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date extracted	-	23/03/2020	23/03/2020	23/03/2020
Date analysed	-	24/03/2020	24/03/2020	24/03/2020
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	89	80	83

Acid Extractable metals in soil				
Our Reference		239312-21	239312-22	239312-23
Your Reference	UNITS	SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date prepared	-	24/03/2020	24/03/2020	24/03/2020
Date analysed	-	25/03/2020	25/03/2020	25/03/2020
Arsenic	mg/kg	8	8	7
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	13	16	15
Copper	mg/kg	15	28	16
Lead	mg/kg	17	23	21
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	10	12	12
Zinc	mg/kg	85	160	100

Moisture				
Our Reference		239312-21	239312-22	239312-23
Your Reference	UNITS	SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date prepared	-	23/03/2020	23/03/2020	23/03/2020
Date analysed	-	24/03/2020	24/03/2020	24/03/2020
Moisture	%	13	18	13

Asbestos ID - soils NEPM - ASB-001						
Our Reference		239312-1	239312-2	239312-3	239312-4	239312-5
Your Reference	UNITS	SP01_24_1.0	SP01_25_0.8	SP01_26_1.1	SP01_27_0.3	SP01_28_0.8
Depth		1	0.8	1.1	0.3	0.8
Date Sampled		19/03/2020	19/03/2020	19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020
Sample mass tested	g	831.66	783.06	689.31	651.97	649.07
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	Chrysotile	Chrysotile	No visible asbestos detected	Chrysotile Amosite	Chrysotile
ACM >7mm Estimation*	g	0.0136	–	–	0.0060	0.0047
FA and AF Estimation*	g	0.0055	0.0075	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		239312-6	239312-7	239312-8	239312-9	239312-10
Your Reference	UNITS	SP01_29_0.5	SP01_30_0.6	SP01_31_0.4	SP01_32_0.6	SP01_33_0.3
Depth		0.5	0.6	0.4	0.6	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020
Sample mass tested	g	669.52	684.84	695.46	706.19	724.21
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	Chrysotile	No visible asbestos detected	Chrysotile	Chrysotile Amosite
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	0.0030	–	0.0065	0.0009
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		239312-11	239312-12	239312-13	239312-14	239312-15
Your Reference	UNITS	SP01_34_1.2	SP01_35_1.2	SP01_36_1.8	SP01_37_0.9	SP01_38_1.0
Depth		1.2	1.2	1.8	0.9	1
Date Sampled		19/03/2020	19/03/2020	19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020
Sample mass tested	g	710.2	740.32	693.25	730.49	675.07
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	Chrysotile	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	0.0023	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		239312-16	239312-17	239312-18	239312-19	239312-20
Your Reference	UNITS	SP01_39_1.5	SP01_40_1.8	SP01_41_0.5	SP01_42_1.1	SP01_43_0.5
Depth		1.5	1.8	0.5	1.1	0.5
Date Sampled		19/03/2020	19/03/2020	19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020
Sample mass tested	g	720.13	710.68	714.23	713.63	690.03
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - materials		
Our Reference		239312-24
Your Reference	UNITS	SP02_AS001
Depth		-
Date Sampled		19/03/2020
Type of sample		Material
Date analysed	-	25/03/2020
Mass / Dimension of Sample	-	45x15x5mm
Sample Description	-	Grey fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected
Trace Analysis	-	[NT]

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
AT-008	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
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-003	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-003	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).

Method ID	Methodology Summary
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS.
Org-012/017	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS and/or GC-MS/MS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	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-016	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-7	[NT]
Date extracted	-			23/03/2020	21	23/03/2020	23/03/2020		23/03/2020	[NT]
Date analysed	-			26/03/2020	21	26/03/2020	26/03/2020		26/03/2020	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	<25	21	<25	<25	0	78	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	21	<25	<25	0	78	[NT]
Benzene	mg/kg	0.2	Org-016	<0.2	21	<0.2	<0.2	0	89	[NT]
Toluene	mg/kg	0.5	Org-016	<0.5	21	<0.5	<0.5	0	71	[NT]
Ethylbenzene	mg/kg	1	Org-016	<1	21	<1	<1	0	74	[NT]
m+p-xylene	mg/kg	2	Org-016	<2	21	<2	<2	0	79	[NT]
o-Xylene	mg/kg	1	Org-016	<1	21	<1	<1	0	69	[NT]
naphthalene	mg/kg	1	Org-014	<1	21	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	89	21	100	107	7	89	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			23/03/2020	21	23/03/2020	23/03/2020		23/03/2020	[NT]
Date analysed	-			24/03/2020	21	24/03/2020	24/03/2020		24/03/2020	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	21	<50	<50	0	107	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	21	<100	<100	0	99	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	21	<100	<100	0	107	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	21	<50	<50	0	107	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	21	<100	<100	0	99	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	21	<100	<100	0	107	[NT]
Surrogate o-Terphenyl	%		Org-003	80	21	83	82	1	126	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			23/03/2020	21	23/03/2020	23/03/2020		23/03/2020	[NT]
Date analysed	-			24/03/2020	21	24/03/2020	24/03/2020		24/03/2020	[NT]
Naphthalene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	76	[NT]
Acenaphthylene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	76	[NT]
Phenanthrene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	82	[NT]
Anthracene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	72	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	72	[NT]
Pyrene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	72	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	84	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	<0.2	21	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	<0.05	21	<0.05	<0.05	0	78	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	82	21	91	78	15	82	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			23/03/2020	21	23/03/2020	23/03/2020		23/03/2020	[NT]
Date analysed	-			24/03/2020	21	24/03/2020	24/03/2020		24/03/2020	[NT]
alpha-BHC	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	114	[NT]
HCB	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	124	[NT]
gamma-BHC	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	108	[NT]
delta-BHC	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	114	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	116	[NT]
gamma-Chlordane	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	116	[NT]
Dieldrin	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	124	[NT]
Endrin	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	136	[NT]
Endosulfan II	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	104	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	108	[NT]
Methoxychlor	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	96	21	89	84	6	88	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			23/03/2020	21	23/03/2020	23/03/2020		23/03/2020	[NT]
Date analysed	-			24/03/2020	21	24/03/2020	24/03/2020		24/03/2020	[NT]
Dichlorvos	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	72	[NT]
Dimethoate	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	88	[NT]
Fenitrothion	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	78	[NT]
Malathion	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	92	[NT]
Chlorpyriphos	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	78	[NT]
Parathion	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	76	[NT]
Bromophos-ethyl	mg/kg	0.1	AT-008	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	70	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	96	21	89	84	6	88	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			23/03/2020	21	23/03/2020	23/03/2020		23/03/2020	[NT]
Date analysed	-			24/03/2020	21	24/03/2020	24/03/2020		24/03/2020	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	21	<0.1	<0.1	0	100	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	96	21	89	84	6	88	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date prepared	-			24/03/2020	21	24/03/2020	24/03/2020		24/03/2020	[NT]
Date analysed	-			25/03/2020	21	25/03/2020	25/03/2020		25/03/2020	[NT]
Arsenic	mg/kg	4	Metals-020	<4	21	8	6	29	104	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	21	<0.4	<0.4	0	97	[NT]
Chromium	mg/kg	1	Metals-020	<1	21	13	14	7	105	[NT]
Copper	mg/kg	1	Metals-020	<1	21	15	16	6	104	[NT]
Lead	mg/kg	1	Metals-020	<1	21	17	17	0	111	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	21	<0.1	<0.1	0	86	[NT]
Nickel	mg/kg	1	Metals-020	<1	21	10	10	0	99	[NT]
Zinc	mg/kg	1	Metals-020	<1	21	85	89	5	116	[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.

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

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Appendix H: Waste Disposal Dockets

TipSite Systems Sydney, Australia

LA Kennett Enterprises trading as
Glenfield Waste Services

ABN: 68 835 612 007
[redacted]

Docket (Original)

Client Name
EMS - EnviroManage Systems

Site:	Glenfield Waste Services
Transaction:	638854
Docket:	638854
Date:	10/03/2020 8:17:39 AM
Operator:	Janette
Product:	Land C & D
Rego:	ALB187
Job #:	mulgoa

Weights

Entry:	24.04 t
Exit:	15.62 t
Volume:	0.00 t
Nett:	8.42 t

Thank You
gatehouse@glenfieldwaste.com

Printed on 10/03/2020 8:33:40 AM

638854

EMS
EnviroManage Systems

EnviroManage Systems Pty Ltd
Tottenham Property, 443 Luddenham Road, Luddenham NSW 2745
p 02 9834 2998 m 0408 316 691 abn 84 037 956 078
www.enviromanage.com.au

Transport / Tipping Docket No. 37811

Job No. 19179 Date 10.3.20
Customer [redacted]
Address Gunyah Ave
Site Mulgoa Time 7.00

MATERIAL	
☐	Asbestos Contaminated Soils
☐	General Solid Waste
☐	VENM
☐	ENM
☐	Concrete
☑	Mixed Demo
☐	Sandstone
☐	O/S Sandstone
☐	Other

QUANTITY (confirm w. weighbridge)
Approximately m³ 15

WEIGHT

Gross	
Tare	
Nett	

Attach weighbridge docket No.

☐ Bogie	☐ Truck Dog
☐ Semi Trailer	☑ Skip Bin

Destination Glenfield Waiting Time Approved By
Transport Co. EMS From To Total
Vehicle Reg. ALB:187 Driver Name Bob

[redacted]
Site Foreman Signature

D.Forbes
Print Name

TRANSPORTERS / SUPPLIERS NOTE

White Copy	Load destination
Yellow Copy	Return to EMS with weighbridge docket for payment
Blue Copy	Load original — to remain in the book — all books must be returned to EMS

TipSite Systems — Sydney, Australia

LA Kennett Enterprises trading as
Glenfield Waste Services

ABN: 66 835 612 007
[redacted]

Docket (Original)

Client Name
EMS - EnviroManage Systems

Site:	Glenfield Waste Services
Transaction:	639658
Docket:	639658
Date:	19/03/2020 8:01:02 AM
Operator:	Janette
Product:	Land C & D
Rego:	ALB185
Job #:	mulgoa

Weights

Entry:	24.26 t
Exit:	15.66 t
Volume:	0.00 t
Nett:	8.60 t

Thank You
gatehouse@glenfieldwaste.com

Printed on 19/03/2020 8:23:52 AM

EMS
EnviroManage Systems

EnviroManage Systems Pty Ltd
Tottenham Property, 443 Luddenham Road, Luddenham NSW 2745
p 02 9834 2998 m 0408 316 691 abn 84 037 956 078
www.enviromanage.com.au

Transport / Tipping Docket No. 37812

Job No. 19179 Date 19.03.20
Customer [redacted]
Address Gunyah Drive.
Site Mulgoa. Time 7:00.

MATERIAL	QUANTITY (confirm w. weighbridge)
☐ Asbestos Contaminated Soils	Approximately m³ ☐
☒ General Solid Waste	**WEIGHT**
☐ VENM	Gross
☐ ENM	Tare
☐ Concrete	Nett
☑ Mixed Demo	
☐ Sandstone	Attach weighbridge docket No.
☐ O/S Sandstone	☐ Bogie ☐ Truck Dog
☐ Other	☐ Semi Trailer ☑ Skip Bin 30

Destination Glenfield. Waiting Time ____ Approved By ____
Transport Co. EMS. From ____ To ____ Total ____
Vehicle Reg. ALB185 Driver Name Tony.

[redacted] Ammo.
Site Foreman Signature Print Name

TRANSPORTERS / SUPPLIERS NOTE

White Copy	Load destination
Yellow Copy	Return to EMS with weighbridge docket for payment
Blue Copy	Load original — to remain in the book — all books must be returned to EMS

SUEZ

SUEZ Recycling & Recovery Pty Ltd
Elizabeth Drive Waste Management Centre
1725 Elizabeth Drive
Kemps Creek NSW 2178

Phone: [redacted]
ABN: 70 002 902 650

Delivery Docket
REPRINT

Ticket No: ED170007760.0
Time In: 7/04/2020 9:51:43 AM
Time Out: 7/04/2020 9:51:43 AM
Vehicle Rego: BZ67BH
Vehicle Config: 4 Axle Truck & 4 Axle Dog Trailer

Client: 701311 - ENVIROMANAGE SYSTEMS

Carrier:
Trans Ref:
Order No: 19179 37813

Contaminated Asbestos Soil
9.72t @

Source: External
Dest: Elizabeth Drive General Waste

GROSS: 20.92t
TARE: 11.20t
NET Weight: 9.72t

Chargeable Weight: 9.72t
Each Item Weight: 0.00t

Total (ex GST):
GST :

Total Price:

-------- Payment Details ----------

Total Price:

EMS
EnviroManage Systems

F392

EnviroManage Systems Pty Ltd
Tottenham Property, 443 Luddenham Road, Luddenham NSW 2745
p 02 9834 2998 m 0408 316 691 abn 84 037 956 078
www.enviromanage.com.au

Waste Locate No. 3JXA

Transport / Tipping Docket No. 37813

Job No. 19179 Date 07.04.20
Customer [redacted]
Address Gungah drive
Site Mulgoa Time 9.30

MATERIAL	
☑	Asbestos Contaminated Soils
☐	General Solid Waste
☐	VENM
☐	ENM
☐	Concrete
☐	Mixed Demo
☐	Sandstone
☐	O/S Sandstone
☐	Other

QUANTITY (confirm w. weighbridge)

Approximately m³ ☐

WEIGHT	
Gross	
Tare	
Nett	

Attach weighbridge docket No.

☑ Bogie	☐ Truck Dog
☐ Semi Trailer	☐ Skip Bin

Destination SUEZ KC Waiting Time Approved By
Transport Co. EMS From To Total
Vehicle Reg. BZ67BH Driver Name Theo

[redacted] 945

N. Groom
Print Name

TRANSPORTERS / SUPPLIERS NOTE

White Copy Load destination
Yellow Copy Return to EMS with weighbridge docket for payment
Blue Copy Load original — to remain in the book — all books must be returned to EMS

Tipsite Systems Sydney, Australia

LA Kennett Enterprises trading as
Glenfield Waste Services

ABN: 68 835 612 007

[redacted]

Docket (Original)

Client Name
EMS - EnviroManage Systems

Site:	Glenfield Waste Services
Transaction:	640986
Docket:	640986
Date:	8/04/2020 1:28:47 PM
Operator:	Claudia
Product:	Cont / Asbestos Soil
Rego:	XN14MA
Job #:	mulgoa

Weights

Entry:	13.42 t
Exit:	12.98 t
Volume:	0.00 t
Nett:	0.44 t

Thank You
gatehouse@glenfieldwaste.com

Printed On: 8/04/2020 1:47:16 PM

EMS
EnviroManage Systems

EnviroManage Systems Pty Ltd
Tottenham Property, 443 Luddenham Road, Luddenham NSW 2745
p 02 9834 2936 m 0408 316 091 abn 84 037 956 784
www.enviromanage.com.au

Transport / Tipping Docket No. 37814

Job No: 19179 Date: 08.04.20

Customer: [redacted]

Address: Gunyah drive

Site: Mulgoa Time: 12.50

MATERIAL	
☐	Asbestos Contaminated Soils
☐	General Solid Waste
☐	VENM
☐	ENM
☐	Concrete
☑	Mixed Demo
☐	Sandstone
☐	DIS Sandstone
☐	Other

QUANTITY (confirm w. weighbridge)

Approximately: m³ ☐

WEIGHT

Gross:

Tare:

Nett:

Attach weighbridge docket No:

☐ Bogie ☐ Truck Dog

☐ Semi Trailer ☑ Skip Bin 10m³

Destination: Glenfield Waste Time: Approved By:

Transport Co: EMS From: To: Total:

Vehicle Reg: XN14MA Driver Name: Matt

[redacted]

NJ - Groom

Print Name:

TRANSPORTERS / SUPPLIERS NOTE

White Copy — Load destination

Yellow Copy — Return to EMS with weighbridge docket for payment

Blue Copy — Load original — to remain in the book — all books must be returned to EMS

OZITYRE SUPPLIES & RECYCLING PTY LTD

[redacted]

Mob: [redacted]

[redacted]

[redacted]

[redacted]

ABN: 97 600 779 253

* USED / SCRAP TYRE COLLECTIONS * COMPETITIVE RATES
* LEGAL DISPOSAL * SERVICE & SATISFACTION GUARANTEED

TAX INVOICE

EPA Lic. No: 20494 WASTE LESS RECYCLE MORE **No.:** 13096

Client: ENVIREMENT MANAGEMENT SERVICES

Address: TOTTENHAM PROPERTY 443 LUDDENHAM RD LUDDENHAM

Contact Person: NICK **Ph/Mob:** 0408 316 691 **Date:** 16 / 4 /2020

We pride ourselves on our reputation for excellence and committment to deliver guaranteed service

ITEM	DESCRIPTION / DETAILS	Qty	Cost	TOTAL
1	SCRAP CAR TYRE'S	23	$3.50	$80.50
2	SCRAP 4WDRIVE TYRES	3	$5.50	$16.50
3	SCRAP LIGHT TRUCK TYRE'S	19	$7.50	$142.50
4	SCRAP TRUCK TYRE'S	3	$12.50	$37.50
5				
6	SCRAP CAR TYRE'S ON "RIMS"	6	$15.00	$90.00
7	SCRAP TRUCK TYRE'S ON "RIMS"	3	$40.00	$120.00
8				
9	SCRAP TRACTOR TYRE'S 18.4.30	4	$100.00	$400.00
10	SCRAP TRACTOR TYRE 30x24	1	$80.00	$80.00
11				
12	PICK UP FROM SITE AT			
13	GUNYA DRIVE MULGOA			

I/We authorised representative of the company being invoiced acknowledge the service(s) provided by Ozityre Supplies & Recycling Pty Ltd for collection and disposal of used Scrap Tyres and agree to the payment terms. We are responsible for Scrap Tyres until service provided has been paid in full.

SUB TOTAL	$967.00
GST AMOUNT	$96.70
TOTAL Incl (GST)	$1,063.70

Name: [redacted] Signature [redacted]

EFT PAYMENT DETAILS:

Acc Name: **OziTyre Supplies & Recycling Pty Ltd** BSB: **112-879** Account #: **412 772 066**

Payment Terms: *All Payments must be made within 14 days from the date of the Invoice*

Driver Name: BOB COOK Driver Lic #: 9387PD Truck Rego: BH69EF Driver Initial: [redacted]

Appendix I: Containment Cell Survey Drawings

www.dialbeforeyoudig.com.au

DIAL 1100 BEFORE YOU DIG

M G A North

450
D.P.1250019

447
D.P.1250019

ROAD 104

ROAD 106

448
D.P.1250019

CELL CUT VOLUME
4670m³

vince morgan SURVEYORS

Vince Morgan (Surveyors) Pty Ltd [redacted] A.B.N. 065 060 808

DATUM: A.H.D.
ORIGIN: SSM 205043 R.L. 72.62
SOURCE: SCIMS
DRAWN: G.Hitchcock

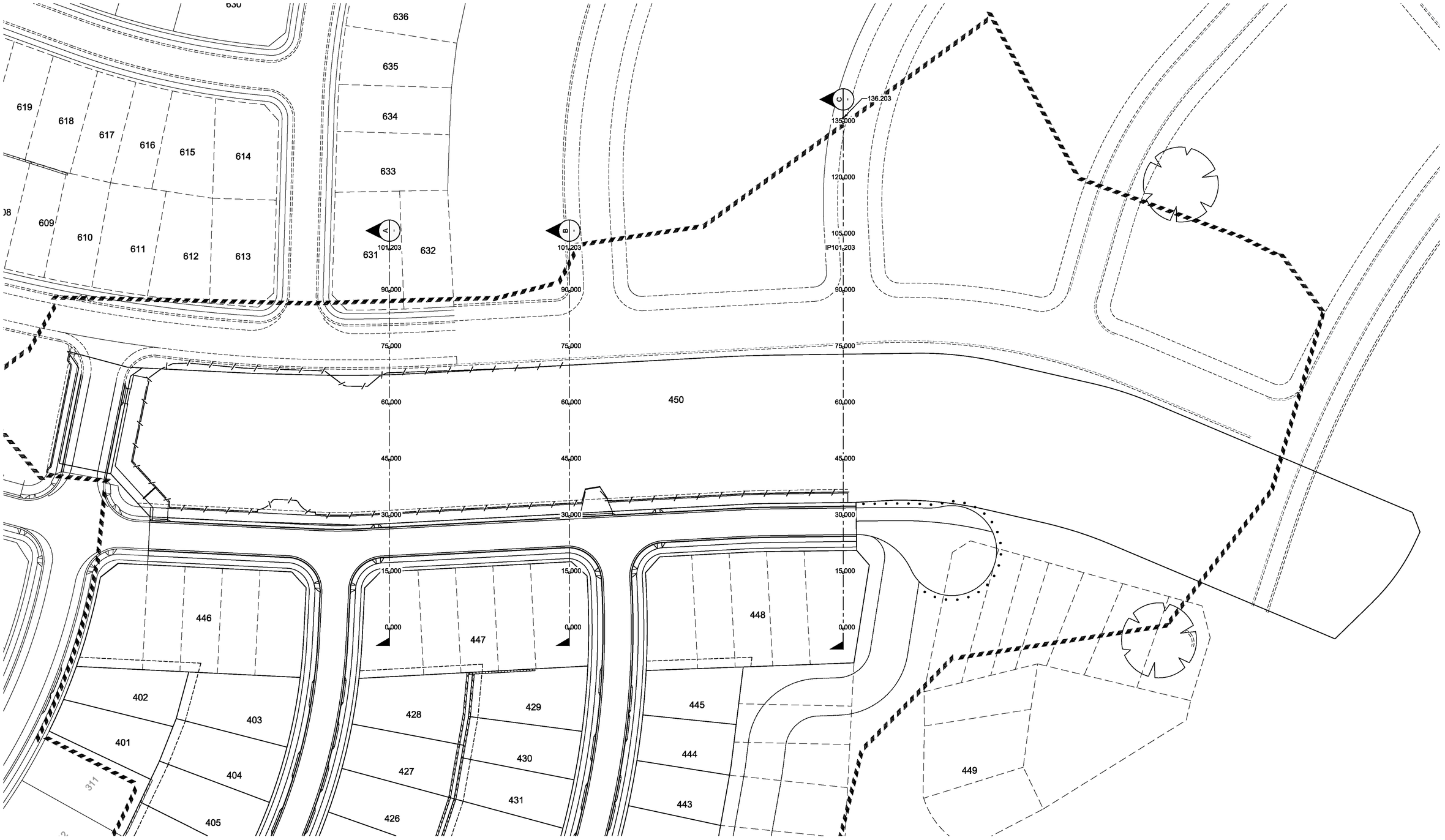
DATE: 05.03.20
SCALE: 1:300@A2
CONTOUR INTERVAL: 0.5m
CHECKED: APS

CLIENT: EMS EnviroManage Systems

LOT(S):
STREET ADDRESS:
LOCATION: HIGHLAND VIEWS
LOCAL GOVT: PENRITH

DRAWING TITLE: CUT VOLUME PLAN

PLAN No. 20243F
ISSUE:
SHEET: 1 OF: 1



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

Plotted: 15 April, 2020 4:31:25 PM File Name: J:\9784 - Glenmore Park Vianello Masterplan\01 - Civil Design\CDS\K9784SK200.dwg

1	ISSUED FOR INFORMATION	CC	CC			
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
[redacted]

AZIMUTH: MGA
DATUM: AHD
ORIGIN:

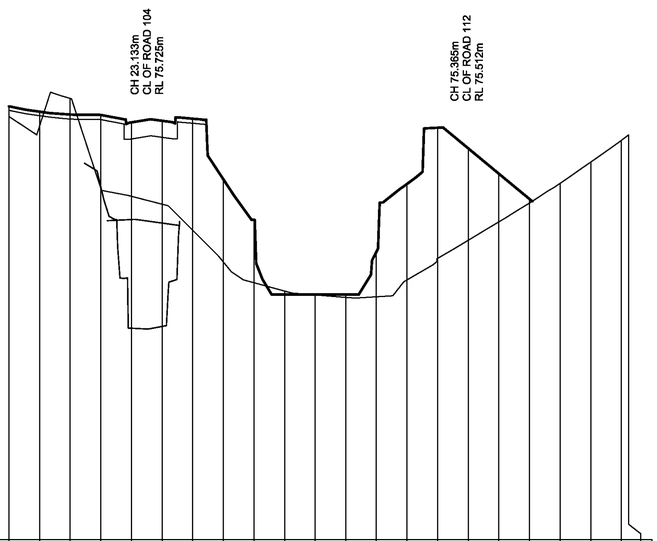
CLIENT: [redacted]

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ADVANCE COPY ONLY
NOT FOR CONSTRUCTION

GLENMORE PARK PRECINCT G STAGE 4
CELL REMEDIATION PLAN

PLAN No: 9784/SK200 1
FILE No: 9784SK200
SHEET SIZE: A1 ORIGINAL

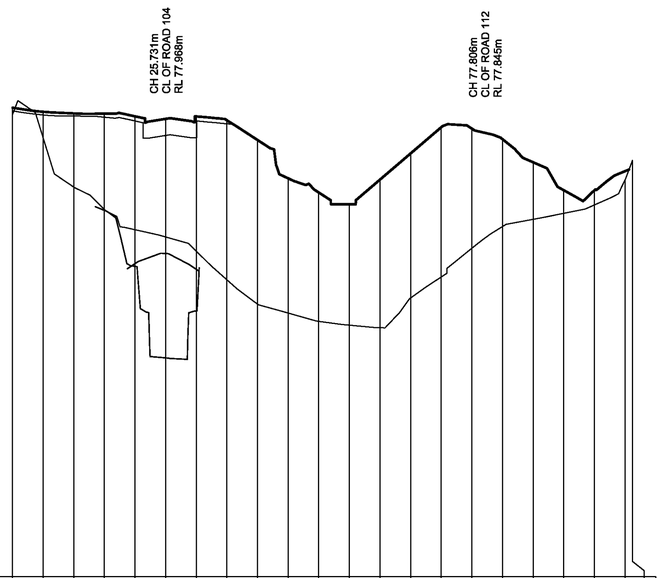


DATUM 62.0

CELL SURVEY PREFILLING SURVEY					73.518	68.905	68.963																			
CELL TOP PICK UP SURFACE						72.451	72.334																			
BULK EARTHWORK SURFACE	76.015	75.840	75.731	75.713	75.082	75.134	75.593	73.765	72.438	70.000	70.000	70.000	70.000	71.395	73.611	75.449	74.775	73.948	73.122							
DESIGN SURFACE	76.147	75.974	75.881	75.863	75.622	75.674	75.743	73.765	72.438	70.000	70.000	70.000	70.000	71.395	73.611	75.449	74.775	73.948	73.122							
EXISTING SURFACE	75.812	75.507	76.407	73.460	73.210	72.951	72.099	71.065	70.390	70.118	69.989	69.906	69.930	70.482	71.185	71.774	72.376	72.992	73.634	74.328	75.036	75.217				
CHAINAGE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000	100.000	101.203				

LONGITUDINAL CELL SECTION A

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



DATUM 63.0

CELL SURVEY PREFILLING SURVEY				74.958	73.131	70.143	71.679																			
CELL TOP PICK UP SURFACE					73.219	73.550	73.036																			
BULK EARTHWORK SURFACE	78.206	78.073	78.038	78.000	77.879	77.404	77.328	77.889	77.256	76.005	75.541	75.155	75.962	76.818	77.673	77.624	77.283	76.529	75.616	75.614						
DESIGN SURFACE	78.310	78.177	78.123	78.113	78.029	77.944	78.027	77.899	77.256	76.005	75.541	75.155	75.962	76.818	77.673	77.624	77.283	76.529	75.616	75.614						
EXISTING SURFACE	78.088	77.318	75.714	74.996	74.329	74.094	73.632	72.693	71.898	71.608	71.394	71.211	71.127	72.097	72.784	73.723	74.429	74.667	74.862	75.134	75.952	76.588				
CHAINAGE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000	100.000	101.203				

LONGITUDINAL CELL SECTION B

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

1	ISSUED FOR INFORMATION	CC	CC				
	AMENDMENT	DES	DRN	CKD	APR	DATE	

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

[redacted]

AZIMUTH: MGA
DATUM: AHD
ORIGIN:

CLIENT: [redacted]

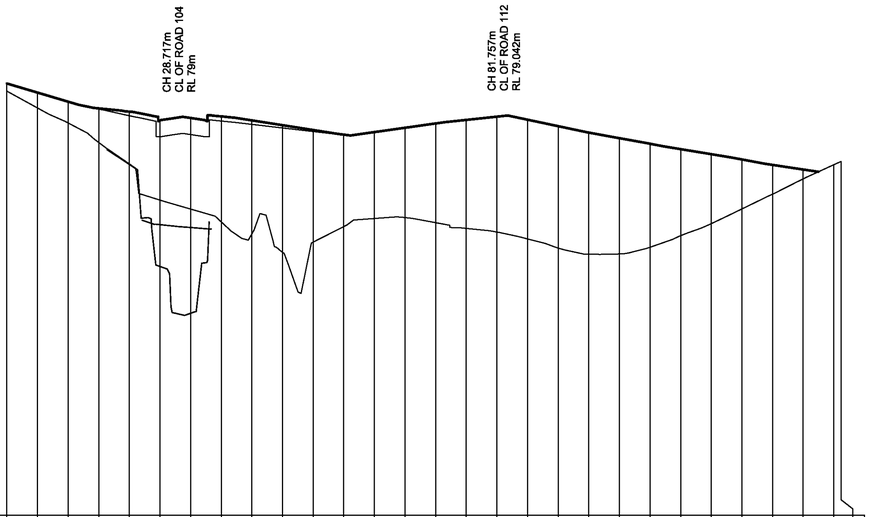
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ADVANCE COPY ONLY
NOT FOR CONSTRUCTION

GLENMORE PARK PRECINCT G
STAGE 4
CELL REMEDIATION SECTIONS
SHEET 1

PLAN No: 9784/SK201 1
FILE No: 9784SK201
SHEET SIZE: A1 ORIGINAL

Plotted: 15 April , 2020 4:56:55 PM File Name: J:\9784 - Glenmore Park Vianello Masterplan\01 - Civil Design\CDS\K\9784SK201.dwg



DATUM 66.0

CELL SURVEY PREFILLING SURVEY					77.447	74.115	72.586							
CELL TOP PICK UP SURFACE						75.479	75.388							
BULK EARTHWORK SURFACE	80.087	79.780	79.474	79.252	79.035	78.353	78.422	78.863	78.754	78.637	78.520	78.409	78.500	78.641
DESIGN SURFACE	80.087	79.791	79.495	79.276	79.170	78.878	78.962	79.013	78.881	78.725	78.568	78.417	78.500	78.641
EXISTING SURFACE	79.838	79.289	78.798	78.164	77.463	76.280	75.987	75.570	75.182	74.576	74.911	75.420	75.679	75.711
CHAINAGE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000

CELL SURVEY PREFILLING SURVEY															
CELL TOP PICK UP SURFACE															
BULK EARTHWORK SURFACE	78.782	78.898	79.004	78.905	78.694	78.484	78.301	78.123	77.945	77.781	77.608	77.429	77.279		
DESIGN SURFACE	78.782	78.898	79.004	78.905	78.694	78.484	78.301	78.123	77.945	77.781	77.608	77.429	77.279		
EXISTING SURFACE	75.545	75.355	75.238	75.012	74.716	74.517	74.522	74.744	75.123	75.514	75.995	76.474	76.973	77.435	77.538
CHAINAGE	70.000	75.000	80.000	85.000	90.000	95.000	100.000	105.000	110.000	115.000	120.000	125.000	130.000	135.000	136.203

LONGITUDINAL CELL SECTION C

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

CLIENT:

[redacted]

ADVANCE COPY ONLY
NOT FOR CONSTRUCTION

1	ISSUED FOR INFORMATION	CC	CC			
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

[redacted]

AZIMUTH: MGA
DATUM: AHD
ORIGIN:

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

GLENMORE PARK PRECINCT G
STAGE 4
CELL REMEDIATION SECTION
SHEET2

PLAN No: 9784/SK202 1
FILE No: 9784SK202
SHEET SIZE: A1 ORIGINAL

Plotted: 15 April , 2020 4:59:23 PM File Name: J:\9784 - Glenmore Park Vianello Masterplan\01 - Civil Design\CD\SK\9784SK202.dwg

Appendix J: Stockpile Waste Classification Certificates

Jason Stephenson

[redacted]

EDP Reference: S-00573.WCC.003 / C0009

[redacted]

31 March 2020

Waste Classification of Stockpiled Material – Highland Views: Stage 4, Glenmore Park NSW

Summary Table	
Classified Material:	Stockpiled soil material from Stage 4 of the Highland Views Development Site, Glenmore Park, NSW
Material Description:	Brown sandy clay, dry and firm with rootlets, bricks and fibre cement sheeting debris. No hydrocarbon odour or staining evident.
Material Volume:	4 m^3
Waste Classification:	**Special Waste (Asbestos Waste) – General Solid Waste (non-putrescible).**

This summary table should be read in conjunction with the following sections of the report.

1. INTRODUCTION

EDP Consultants Pty Ltd (EDP) was engaged by CLL Development (the client) to conduct a waste classification (assessment) of stockpiled soil material within the Highland Views Development Site (investigation area) located at Darug Avenue, Glenmore Park NSW (the site).

2. OBJECTIVE

The objective of the assessment was to classify the stockpiled soil material at the site in accordance with the NSW EPA *Waste Classification Guidelines: Part 1 – Classifying Waste, 2014* (NSW EPA 2014) to facilitate its offsite disposal to an appropriately licensed NSW landfill facility.

3. SCOPE OF WORKS

To complete the assessment, EDP undertook the following:

- A brief site history review with visual inspection and site walkover;
- Collection of samples within the stockpiled material;
- Laboratory analysis of representative samples for contaminants of potential concern (CoPC), as outlined in **Table 3**, at a National Associations of Testing Authorities, Australia (NATA) accredited laboratory;
- Comparison of results against the NSW EPA 2014; and
- Preparation of this Waste Classification Certificate detailing the findings of the assessment.

4. SITE AND MATERIAL INFORMATION

Table 1: Site Details

Site Details:	
Site Address:	Stage 4 Development Site, Highland Views, Glenmore Park NSW
Legal Identification	Lot 333 in Deposited Plan 1243735
Site Description:	The site had previously undergone bulk earthworks including excavation works for the construction of a containment cell that had been completed at the time of the assessment. The stockpile was located within the southern portion of the site.
Current and Historic Land Use:	The site was historically a rural area used for grazing and is currently undergoing development for the construction of low-density residential properties
Total Land Area:	7.268 ha

Table 2: Material Description

Material Details:	
Material Location and ID:	One stockpiled area (SP02) located within the southern corner of site
Material History:	Historically imported fill material mixed with construction waste in a drainage line, excavated as part of the remediation program.
Material Description:	Brown sandy clay, dry and firm with rootlets, bricks and fibre cement sheeting debris. No hydrocarbon odour or staining evident.
Approximate Dimensions:	2 m length x 2 m width x 1 m depth, which equates to a combined stockpile volume of ~4 m^3
Suspected Asbestos:	Suspected asbestos-containing material (ACM) in the form of non-friable (bonded) fibre cement debris was observed on the surface of SP02

Refer to attached **Figure 1** for site location and **Figure 2** for investigation area, stockpiles and sample locations onsite. Photographs taken during the assessment are also provided in the attached **Photographic Log**.

5. TECHNICAL FRAMEWORK

The assessment was undertaken in general accordance with the following:

- NSW *Work Health and Safety Act 2011*;
- NSW *Work Health and Safety Regulation 2017;*
- NSW EPA *Protection of the Environment Operations (POEO) Act 1997*;
- NSW EPA *POEO (Waste) Regulation 2014;*
- NSW EPA *Waste Classification Guidelines: Part 1 – Classifying Waste, 2014*;
- *National Environment Protection (Assessment of Site Contamination) Measure, Amendment, 2013*;
- Australian Standard (AS) 4482.1 *Guide to Investigation and Sampling of Sites with Potentially Contaminated Soil, Part 1: Non-volatile and Semi-volatile Compounds, 2005*;
- AS 4482.2 *Guide to the Sampling and Investigation of Potentially Contaminated Soil, Part 2: Volatile Substances, 1999*;
- AS 4964 *Method for the qualitative identification of asbestos in bulk samples, 2004*; and
- NSW *Government Guide for managing asbestos in or on soil, 2014*.

6. METHODOLOGY

The assessment included material inspection and sampling undertaken on the 19th of March 2020 by Lochlan Browne of EDP. The methodology utilised for the assessment was as follows:

- Collection of 3 soil samples from the stockpiled material. Soil samples were collected at approximate depths between 0.3 and 0.5 m below the surface of the stockpile at each sampling location using hand tools. Samples were collected from soils not in direct contact with the hand tools;
- Soil samples were collected systematically across the stockpiled areas in addition to areas where there was a distinct change in lithology or based on the observations made during the assessment;
- Collection of one fragment of suspected asbestos-containing material (ACM);
- Between each sampling location, hand tools were decontaminated using phosphate free detergent and new nitrile gloves were used to reduce the potential for cross-contamination to occur;
- The samples were placed in laboratory-supplied glass jars/sample bags and transported on ice to an external NATA accredited laboratory, Envirolab Services, under standard chain of custody procedure; and
- 3 representative soil samples were selected for analysis based on spatial coverage and consistency of the material, as outlined in **Table A** attached. The samples were analysed for a suite of common CoPC, as detailed in **Table 3.**

Table 3: Analytical Schedule

Sample Medium	No. Analysed	CoPC	Frequency	Rationale
Soil	3	Metals, PAH, OCP/OPP, PCBs, BTEX and TRH.	1/25 m^3, minimum 3	To ascertain whether CoPC were present within the stockpiled soil to classify the material for the purpose of offsite disposal.
Fragment	1	Asbestos.	-	To ascertain whether ACM was present within the stockpiled soil to classify the material for the purpose of offsite disposal.

Metals - Arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc;
PAH - Polycyclic aromatic hydrocarbons;
OCP/OPP - Organochlorine pesticides/Organophosphorus pesticides;
PCBs - Polychlorinated biphenyls;
BTEX - Benzene, toluene, ethylbenzene and xylene; and
TRH - Total recoverable hydrocarbons.

7. RESULTS

Table 4: Summary of Results

Summary of Results	
ACM Fragment Analysis:	Asbestos was identified within the one fibre cement fragment sample analysed.
Asbestos Friability:	EDP considers the soil material contains non-friable (bonded) asbestos waste.
Soil Chemical Analysis in accordance with NSW EPA 2014:	A review of the analytical results indicated that the contaminant concentrations within the soil samples analysed were less than the contaminant threshold (CT) for General Solid Waste (CT1) without toxicity characteristic leaching procedure (TCLP) as detailed in NSW EPA 2014.

Refer to attached **Table A** for a summary of the analytical results and the NATA accredited analysis report(s) for further details.

8. DISPOSAL CLASSIFICATION

Based on a visual inspection, assessment of analytical results and subject to the limitations of the investigation, the stockpiled soil material within SP01, as shown on **Figure 1**, with an approximate combined volume of 4 m^3, has been classified as **Special Waste (Asbestos Waste) – General Solid Waste (non-putrescible)** and would require disposal at an appropriately licensed landfill facility. It is noted that the concentrations of chemical contaminants in the soil were less than CT values for General Solid Waste (CT1).

It is recommended that this report is sent to the proposed receiving landfill facility to confirm their acceptance of the material prior to offsite disposal.

9. LIMITATIONS

The assessment was undertaken on the material described and documented within this report only. This classification cannot be used for any other soil or soil mixtures present at the site (including in-situ soil).

This assessment was undertaken to facilitate off-site disposal of the stockpiled material and should not be used for the purpose of onsite reuse of the material.

During excavation, should the description of the soil differ from that described in this investigation, then further assessment may be required.

The assessment was based upon the works undertaken on the date specified in this report. Site conditions may change over time, and EDP make no warranty on the material after this date.

Unless otherwise stated, EDP was not present during excavation, stockpiling, load-out or disposal of this material. As such, EDP make no warranties that the material to be disposed is that material which EDP has classified within this report.

If you have further questions, please do not hesitate to contact the undersigned.

Yours sincerely

Calum Connaughton
Health, Safety and Environmental Consultant

Attachments:
Document Control
Statement of Limitations
Photographic Log
Analytical Summary Table
Figure(s)
NATA Accredited Analysis Report(s)

DOCUMENT CONTROL

Project Details:	
Report Name:	Waste Classification of Stockpiled Material – Highland Views: Stage 4, Glenmore Park NSW
Client Name:	CCL Development
Reference:	S-00573.WCC.003 / C0009

Revision No.:	Revision date:	Author:	Reviewer:	Approver:	Reason for Issue:
001	30/03/2020	Calum Connaughton	Matthew Konza	Ryan Jacka	First Issue to client

Sign Off:		
Author:	Reviewer:	Approver:
[redacted]		
Calum Connaughton	Matthew Konza	Ryan Jacka
HSE Consultant	HSE Consultant	Principal Consultant

STATEMENT OF LIMITATIONS

This document has been prepared in response to specific instructions from the client to whom the report has been addressed. The work has been undertaken with the usual care and thoroughness of the consulting profession. The work is based on generally accepted standards, practices of the time the work was undertaken. No other warranty, expressed or implied, is made as to the professional advice included in this report.

The report has been prepared for the use by the client and the use of this report by other parties may lead to misinterpretation of the issues contained in this report. To avoid misuse of this report, EDP advise that the report should only be relied upon by the client and those parties expressly referred to in the introduction of the report. The report should not be separated or reproduced in part and EDP should be retained to assist other professionals who may be affected by the issues addressed in this report to ensure the report is not misused in any way.

EDP is not a professional quantity surveyor (QS) organisation. Any areas, volumes, tonnages or any other quantities noted in this report are indicative estimates only. The services of a professional QS organisation should be engaged if quantities are to be relied upon.

Sampling Risks

EDP acknowledges that any scientifically designed sampling program cannot guarantee all subsurface contamination will be detected. Sampling programs are designed based on known or suspected site conditions and the extent and nature of the sampling and analytical programs will be designed to achieve a level of confidence in the detection of known or suspected subsurface contamination. The sampling and analytical programs adopted will be those that maximises the probability of identifying contaminants. The client must therefore accept a level of risk associated with the possible failure to detect certain subsurface contamination where the sampling and analytical program misses such contamination. EDP will detail the nature and extent of the sampling and analytical program used in the investigation in the investigation report provided.

Environmental site assessments identify actual subsurface conditions only at those points where samples are taken and when they are taken. Soil contamination can be expected to be non-homogeneous across the stratified soils where present on site, and the concentrations of contaminants may vary significantly within areas where contamination has occurred. In addition, the migration of contaminants through groundwater and soils may follow preferential pathways, such as areas of higher permeability, which may not be intersected by sampling events. Subsurface conditions including contaminant concentrations can also change over time. For this reason, the results should be regarded as representative only.

The client recognises that sampling of subsurface conditions may result in some cross contamination. All care will be taken and the industry standards used to minimise the risk of such cross contamination occurring, however, the client recognises this risk and waives any claims against EDP and agrees to defend, indemnify and hold EDP harmless from any claims or liability for injury or loss which may arise as a result of alleged cross contamination caused by sampling.

Reliance on Information Provided by Others

EDP notes that where information has been provided by other parties in order for the works to be undertaken, EDP cannot guarantee the accuracy or completeness of this information the client therefore waives any claim against the company and agrees to indemnify EDP for any loss, claim or liability arising from inaccuracies or omissions in information provided to EDP by third parties. No indications were found during our investigations that information contained in this report, as provided to EDP, is false.

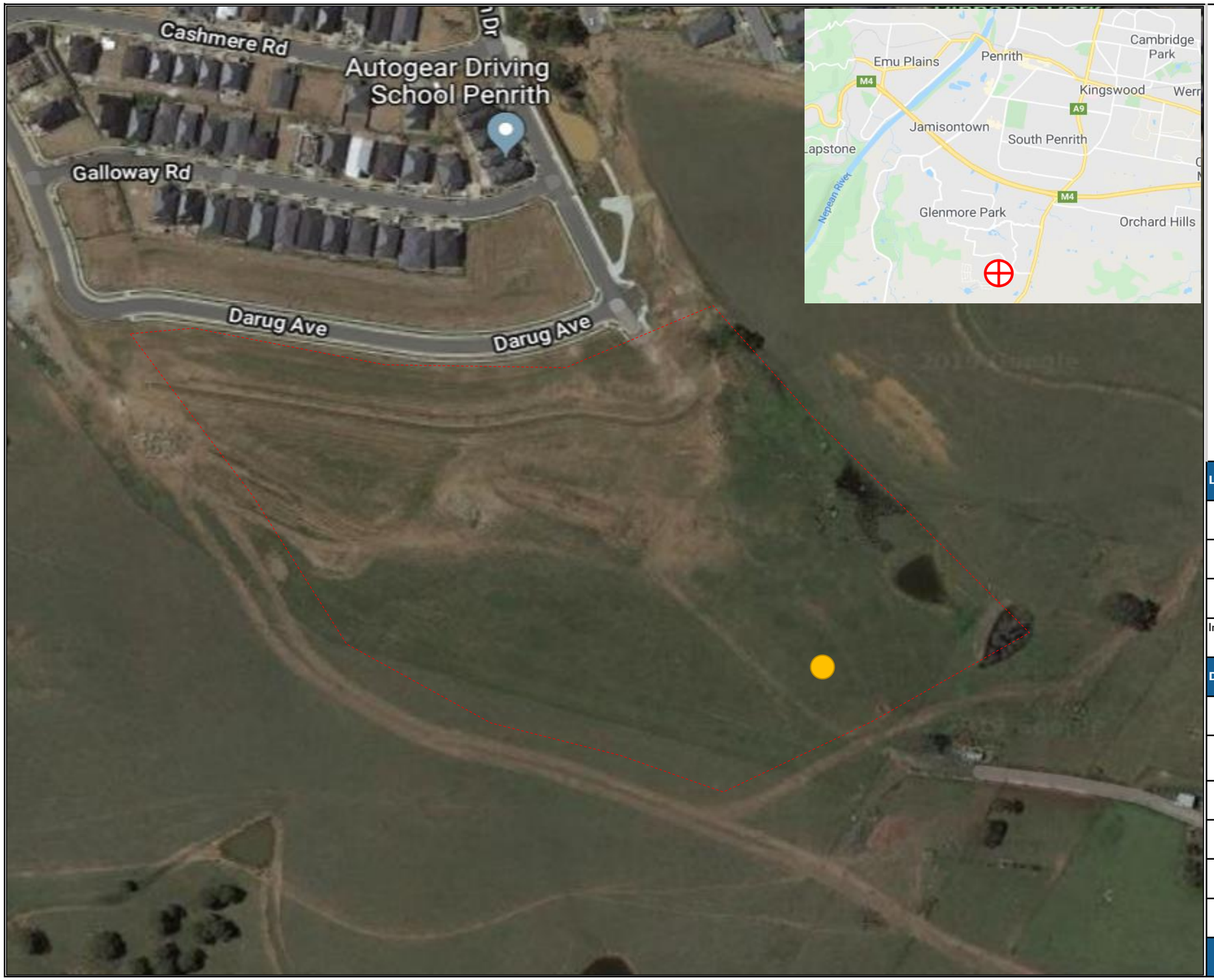
Recommendations for Further Study

The industry recognised methods used in undertaking the works may dictate a staged approach to specific investigations. The findings therefore of this report may represent preliminary findings in accordance with these industry recognised methodologies. In accordance with these methodologies, recommendations contained in this report may include a need for further investigation or analytical analysis. The decision to accept these recommendations and incur additional costs in doing so will be at the sole discretion of the client and EDP recognises that that the client will consider their specific needs and the business risks involved. EDP does not accept any liability for losses incurred as a result of the client not accepting the recommendations made within this report.

TABLE A: SUMMARY OF ANALYTICAL RESULTS

Analyte			Heavy Metals						PAHs		BTEX				TRH		PCB	OCP	Asbestos
			Total (mg/kg)						Total (mg/kg)		Total (mg/kg)				Total (mg/kg)		(mg/kg)	(mg/kg)	
			Arsenic	Cadmium	Chromium (iv)	Lead	Mercury	Nickel	Benzo(a)Pyrene	Total PAH	Benzene	Toluene	Ethylbenzene	Xylene	C6-C9	C10-C36	Total PCB	Total OCP (scheduled chemicals)	Asbestos-Containing Material (Fragment)
Practical Quantitatiion Limit (PQL)			4	0.4	1	1	0.1	1	0.05	2	0.2	0.5	1	3	25	250	0.7	2	
General Solid Waste (CT1)			100	20	100	100	4	40	0.8	200	10	288	600	1000	650	10000	<50	<50	
General Solid Waste (SCC1/TCLP1)			500	100	1900	1500	50	1050	10	200	0.5	518	1080	1800	650	10000	<50	<50	
Restricted Solid Waste (CT2)			400	80	400	400	16	160	3.2	800	40	1152	2400	4000	2600	40000	<50	<50	
Restricted Solid Waste (SSC2/TCLP2)			2000	400	7600	6000	200	4200	23	800	40	2073	4320	7200	2600	40000	<50	<50	
Special Waste (Asbestos Waste)																			AD
Sample ID	**Date Sampled**	**Depth (m)**																	
SP02_01_0.5	19/03/2020	0.50	8	<0.4	13	17	<0.1	10	<0.5	<0.5	<0.2	<0.5	<1	<3	<25	<250	<0.1	<0.1	ND
SP02_02_0.3	19/03/2020	0.30	8	<0.4	16	23	<0.1	12	<0.5	<0.5	<0.2	<0.5	<1	<3	<25	<250	<0.1	<0.1	ND
SP02_03_0.3	19/03/2020	0.30	7	<0.4	15	21	<0.1	12	<0.5	<0.5	<0.2	<0.5	<1	<3	<25	<250	<0.1	<0.1	ND
SP02_AS001	19/03/2020	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AD

Legend	
ND	Non Detect
AD	Asbestos Detected
Coloured Concentration	Criteria Exceeded



edp

Highland Views, Glenmore Park NSW

0 10 20 m

LEGEND:	
⊕	Site location
▭	Approximate site boundary
●	Approximate stockpile location

Image from: https://maps.six.nsw.gov.au/, 2019

DETAILS:	
Report Name:	Waste Classification Assessment
Client Name:	CCL Development Pty Ltd
EDP Reference:	S-00573.WCC.003 / C0009
Figure Number:	1
Figure Name:	Site Location
Assessment Date:	Monday, 30 March 2020

PHOTOGRAPHIC LOG

Site Details:	Highland Views, Glenmore Park NSW
EDP Reference:	S-00573.WCC.003 / C0009

Photo 1: Southern section of site area looking south.

Photo 2: Stockpile location at southern section of site.

Photo 3: General soil material encountered within stockpile.

Photo 4: General soil material encountered within stockpile.

End of Photographic Log

CHAIN OF CUSTODY - Client

ENVIROLAB GROUP - National phone number 1300 42 43 44

Sydney Lab - Envirolab Services
12 Ashley St, Chatswood, NSW 2067
Ph 02 9910 6200 / sydney@envirolab.com.au

Perth Lab - MPL Laboratories
16-18 Hayden Crt Myaree, WA 6154
Ph 08 9317 2505 / lab@mpl.com.au

Melbourne Lab - Envirolab Services
1A Dalmore Drive Scoresby VIC 3179
Ph 03 9763 2500 / melbourne@envirolab.com.au

Brisbane Office - Envirolab Services
20a, 10-20 Depot St, Banyo, QLD 4014
Ph 07 3266 9532 / brisbane@envirolab.com.au

Adelaide Office - Envirolab Services
7a The Parade, Norwood, SA 5067
Ph 0406 350 706 / adelaide@envirolab.com.au

Client: EDP Consultants	**Client Project Name / Number / Site etc (ie report title):** C0009 / S-00573.003
Contact: Lochlan Browne	
PM: Lochlan Browne	**PO No.:**
Sampler: Lochlan Browne	**Envirolab Quote No. :**
Address: Suite 101, 52 Atchison Street, St Leonards NSW 2065	**Date results required:** Or choose: Standard TAT *Note: Inform lab in advance if urgent turnaround is required - surcharges apply*
Phone: [redacted]	**Report format: esdat / equis /**
Email: [redacted]	**Lab Comments:**

Sample information					Tests Required													Comments
Envirolab Sample ID	Client Sample ID or information	Depth	Date sampled	Type of sample	nepm 500 ml ASB	Combo 6	Asbestos id											Provide as much information about the sample as you can
1	SP01_24_1.0	1	19/03/2020	Soil	X													
2	SP01_25_0.8	0.8	19/03/2020	Soil	X													
3	SP01_26_1.1	1.1	19/03/2020	Soil	X													
4	SP01_27_0.3	0.3	19/03/2020	Soil	X													
5	SP01_28_0.8	0.8	19/03/2020	Soil	X													
6	SP01_29_0.5	0.5	19/03/2020	Soil	X													
7	SP01_30_0.6	0.6	19/03/2020	Soil	X													
8	SP01_31_0.4	0.4	19/03/2020	Soil	X													
9	SP01_32_0.6	0.6	19/03/2020	Soil	X													
10	SP01_33_0.3	0.3	19/03/2020	Soil	X													
11	SP01_34_1.2	1.2	19/03/2020	Soil	X													
12	SP01_35_1.2	1.2	19/03/2020	Soil	X													
13	SP01_36_1.8	1.8	19/03/2020	Soil	X													
14	SP01_37_0.9	0.9	19/03/2020	Soil	X													
15	SP01_38_1.0	1	19/03/2020	Soil	X													
16	SP01_39_1.5	1.5	19/03/2020	Soil	X													
17	SP01_40_1.8	1.8	19/03/2020	Soil	X													
18	SP01_41_0.5	0.5	19/03/2020	Soil	X													
19	SP01_42_1.1	1.1	19/03/2020	Soil	X													
20	SP01_43_0.5	0.5	19/03/2020	Soil	X													
21	SP02_01_0.5	0.5	19/03/2020	Soil		X												
22	SP02_02_0.3	0.3	19/03/2020	Soil		X												
23	SP02_03_0.3	0.3	19/03/2020	Soil		X												
24	SP02_AS001	-	19/03/2020	Material			X											

ENVIROLAB GROUP
~~Envirolab Services~~
~~12 Ashley St~~
~~Chatswood NSW 2067~~
~~Ph: (02) 9910 6200~~

Job No: 239512

Date Received: 20-03-20
Time Received: 9:50
Received by: Helen
Temp: ~~Cool~~/Ambient
Cooling: Ice/~~Icepack~~
Security: Intact/~~Broken~~/~~None~~

Relinquished by (Company): EDP Consultants	**Received by (Company):** ELS
Print Name: Lochlan Browne	**Print Name:** Helen W
Date & Time: 20/03/2020	**Date & Time:** 20-03-20 9:50
Signature: [redacted]	**Signature:** [redacted]

Lab use only:
Samples Received: Cool or Ambient (circle one)
Temperature Received at: (if applicable)
Transported by: Hand delivered / courier

Envirolab Services Pty Ltd
ABN 37 112 535 645
[redacted]

SAMPLE RECEIPT ADVICE

Client Details

Client	EDP Consultants Pty Ltd
Attention	Lochlan Browne

Sample Login Details

Your reference	C0009/S-00573.003
Envirolab Reference	239312
Date Sample Received	20/03/2020
Date Instructions Received	20/03/2020
Date Results Expected to be Reported	27/03/2020

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	23 Soil, 1 Material
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	5.5
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
[redacted]	

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645

[redacted]

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	Asbestos ID - materials
SP01_24_1.0-1								✓	
SP01_25_0.8-0.8								✓	
SP01_26_1.1-1.1								✓	
SP01_27_0.3-0.3								✓	
SP01_28_0.8-0.8								✓	
SP01_29_0.5-0.5								✓	
SP01_30_0.6-0.6								✓	
SP01_31_0.4-0.4								✓	
SP01_32_0.6-0.6								✓	
SP01_33_0.3-0.3								✓	
SP01_34_1.2-1.2								✓	
SP01_35_1.2-1.2								✓	
SP01_36_1.8-1.8								✓	
SP01_37_0.9-0.9								✓	
SP01_38_1.0-1								✓	
SP01_39_1.5-1.5								✓	
SP01_40_1.8-1.8								✓	
SP01_41_0.5-0.5								✓	
SP01_42_1.1-1.1								✓	
SP01_43_0.5-0.5								✓	
SP02_01_0.5-0.5	✓	✓	✓	✓	✓	✓	✓		
SP02_02_0.3-0.3	✓	✓	✓	✓	✓	✓	✓		
SP02_03_0.3-0.3	✓	✓	✓	✓	✓	✓	✓		
SP02_AS001									✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Document Set ID: 9387088
Version: 1, Version Date: 23/11/2020

Envirolab Services Pty Ltd
ABN 37 112 535 645
[redacted]

CERTIFICATE OF ANALYSIS 239312

Client Details

Client	EDP Consultants Pty Ltd
Attention	Lochlan Browne
Address	Suite 6/52 Atchison St, ST LEONARDS, NSW

Sample Details

Your Reference	**C0009/S-00573.003**
Number of Samples	23 Soil, 1 Material
Date samples received	20/03/2020
Date completed instructions received	20/03/2020

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	27/03/2020
Date of Issue	27/03/2020

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Results Approved By
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Ridwan Wijaya, Lab Team Leader
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Authorised By
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Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil				
Our Reference		239312-21	239312-22	239312-23
Your Reference	UNITS	SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date extracted	-	23/03/2020	23/03/2020	23/03/2020
Date analysed	-	26/03/2020	26/03/2020	26/03/2020
TRH C_6 - C_9	mg/kg	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	100	95	94

svTRH (C10-C40) in Soil				
Our Reference		239312-21	239312-22	239312-23
Your Reference	UNITS	SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date extracted	-	23/03/2020	23/03/2020	23/03/2020
Date analysed	-	24/03/2020	24/03/2020	24/03/2020
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50
Surrogate o-Terphenyl	%	83	83	84

PAHs in Soil				
Our Reference		239312-21	239312-22	239312-23
Your Reference	UNITS	SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date extracted	-	23/03/2020	23/03/2020	23/03/2020
Date analysed	-	24/03/2020	24/03/2020	24/03/2020
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	91	83	81

Organochlorine Pesticides in soil				
Our Reference		239312-21	239312-22	239312-23
Your Reference	UNITS	SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date extracted	-	23/03/2020	23/03/2020	23/03/2020
Date analysed	-	24/03/2020	24/03/2020	24/03/2020
alpha-BHC	mg/kg	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	89	80	83

Organophosphorus Pesticides in Soil				
Our Reference	UNITS	239312-21	239312-22	239312-23
Your Reference		SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date extracted	-	23/03/2020	23/03/2020	23/03/2020
Date analysed	-	24/03/2020	24/03/2020	24/03/2020
Dichlorvos	mg/kg	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	89	80	83

PCBs in Soil				
Our Reference		239312-21	239312-22	239312-23
Your Reference	UNITS	SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date extracted	-	23/03/2020	23/03/2020	23/03/2020
Date analysed	-	24/03/2020	24/03/2020	24/03/2020
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	89	80	83

Acid Extractable metals in soil				
Our Reference		239312-21	239312-22	239312-23
Your Reference	UNITS	SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date prepared	-	24/03/2020	24/03/2020	24/03/2020
Date analysed	-	25/03/2020	25/03/2020	25/03/2020
Arsenic	mg/kg	8	8	7
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	13	16	15
Copper	mg/kg	15	28	16
Lead	mg/kg	17	23	21
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	10	12	12
Zinc	mg/kg	85	160	100

Moisture				
Our Reference		239312-21	239312-22	239312-23
Your Reference	UNITS	SP02_01_0.5	SP02_02_0.3	SP02_03_0.3
Depth		0.5	0.3	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil
Date prepared	-	23/03/2020	23/03/2020	23/03/2020
Date analysed	-	24/03/2020	24/03/2020	24/03/2020
Moisture	%	13	18	13

Asbestos ID - soils NEPM - ASB-001						
Our Reference		239312-1	239312-2	239312-3	239312-4	239312-5
Your Reference	UNITS	SP01_24_1.0	SP01_25_0.8	SP01_26_1.1	SP01_27_0.3	SP01_28_0.8
Depth		1	0.8	1.1	0.3	0.8
Date Sampled		19/03/2020	19/03/2020	19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020
Sample mass tested	g	831.66	783.06	689.31	651.97	649.07
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	Chrysotile	Chrysotile	No visible asbestos detected	Chrysotile Amosite	Chrysotile
ACM >7mm Estimation*	g	0.0136	–	–	0.0060	0.0047
FA and AF Estimation*	g	0.0055	0.0075	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		239312-6	239312-7	239312-8	239312-9	239312-10
Your Reference	UNITS	SP01_29_0.5	SP01_30_0.6	SP01_31_0.4	SP01_32_0.6	SP01_33_0.3
Depth		0.5	0.6	0.4	0.6	0.3
Date Sampled		19/03/2020	19/03/2020	19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020
Sample mass tested	g	669.52	684.84	695.46	706.19	724.21
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	Chrysotile	No visible asbestos detected	Chrysotile	Chrysotile Amosite
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	0.0030	–	0.0065	0.0009
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		239312-11	239312-12	239312-13	239312-14	239312-15
Your Reference	UNITS	SP01_34_1.2	SP01_35_1.2	SP01_36_1.8	SP01_37_0.9	SP01_38_1.0
Depth		1.2	1.2	1.8	0.9	1
Date Sampled		19/03/2020	19/03/2020	19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020
Sample mass tested	g	710.2	740.32	693.25	730.49	675.07
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	Chrysotile	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	0.0023	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		239312-16	239312-17	239312-18	239312-19	239312-20
Your Reference	UNITS	SP01_39_1.5	SP01_40_1.8	SP01_41_0.5	SP01_42_1.1	SP01_43_0.5
Depth		1.5	1.8	0.5	1.1	0.5
Date Sampled		19/03/2020	19/03/2020	19/03/2020	19/03/2020	19/03/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020	26-27/03/2020
Sample mass tested	g	720.13	710.68	714.23	713.63	690.03
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - materials		
Our Reference		239312-24
Your Reference	UNITS	SP02_AS001
Depth		-
Date Sampled		19/03/2020
Type of sample		Material
Date analysed	-	25/03/2020
Mass / Dimension of Sample	-	45x15x5mm
Sample Description	-	Grey fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected
Trace Analysis	-	[NT]

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
AT-008	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
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-003	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-003	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).

Method ID	Methodology Summary
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS.
Org-012/017	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS and/or GC-MS/MS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	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-016	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-7	[NT]
Date extracted	-			23/03/2020	21	23/03/2020	23/03/2020		23/03/2020	[NT]
Date analysed	-			26/03/2020	21	26/03/2020	26/03/2020		26/03/2020	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	<25	21	<25	<25	0	78	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	21	<25	<25	0	78	[NT]
Benzene	mg/kg	0.2	Org-016	<0.2	21	<0.2	<0.2	0	89	[NT]
Toluene	mg/kg	0.5	Org-016	<0.5	21	<0.5	<0.5	0	71	[NT]
Ethylbenzene	mg/kg	1	Org-016	<1	21	<1	<1	0	74	[NT]
m+p-xylene	mg/kg	2	Org-016	<2	21	<2	<2	0	79	[NT]
o-Xylene	mg/kg	1	Org-016	<1	21	<1	<1	0	69	[NT]
naphthalene	mg/kg	1	Org-014	<1	21	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	89	21	100	107	7	89	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			23/03/2020	21	23/03/2020	23/03/2020		23/03/2020	[NT]
Date analysed	-			24/03/2020	21	24/03/2020	24/03/2020		24/03/2020	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	21	<50	<50	0	107	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	21	<100	<100	0	99	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	21	<100	<100	0	107	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	21	<50	<50	0	107	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	21	<100	<100	0	99	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	21	<100	<100	0	107	[NT]
Surrogate o-Terphenyl	%		Org-003	80	21	83	82	1	126	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			23/03/2020	21	23/03/2020	23/03/2020		23/03/2020	[NT]
Date analysed	-			24/03/2020	21	24/03/2020	24/03/2020		24/03/2020	[NT]
Naphthalene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	76	[NT]
Acenaphthylene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	76	[NT]
Phenanthrene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	82	[NT]
Anthracene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	72	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	72	[NT]
Pyrene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	72	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	84	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	<0.2	21	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	<0.05	21	<0.05	<0.05	0	78	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	82	21	91	78	15	82	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			23/03/2020	21	23/03/2020	23/03/2020		23/03/2020	[NT]
Date analysed	-			24/03/2020	21	24/03/2020	24/03/2020		24/03/2020	[NT]
alpha-BHC	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	114	[NT]
HCB	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	124	[NT]
gamma-BHC	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	108	[NT]
delta-BHC	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	114	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	116	[NT]
gamma-Chlordane	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	116	[NT]
Dieldrin	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	124	[NT]
Endrin	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	136	[NT]
Endosulfan II	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	104	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	108	[NT]
Methoxychlor	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	96	21	89	84	6	88	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			23/03/2020	21	23/03/2020	23/03/2020		23/03/2020	[NT]
Date analysed	-			24/03/2020	21	24/03/2020	24/03/2020		24/03/2020	[NT]
Dichlorvos	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	72	[NT]
Dimethoate	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	88	[NT]
Fenitrothion	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	78	[NT]
Malathion	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	92	[NT]
Chlorpyriphos	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	78	[NT]
Parathion	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	76	[NT]
Bromophos-ethyl	mg/kg	0.1	AT-008	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	70	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-012/017	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	96	21	89	84	6	88	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			23/03/2020	21	23/03/2020	23/03/2020		23/03/2020	[NT]
Date analysed	-			24/03/2020	21	24/03/2020	24/03/2020		24/03/2020	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	21	<0.1	<0.1	0	100	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	96	21	89	84	6	88	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date prepared	-			24/03/2020	21	24/03/2020	24/03/2020		24/03/2020	[NT]
Date analysed	-			25/03/2020	21	25/03/2020	25/03/2020		25/03/2020	[NT]
Arsenic	mg/kg	4	Metals-020	<4	21	8	6	29	104	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	21	<0.4	<0.4	0	97	[NT]
Chromium	mg/kg	1	Metals-020	<1	21	13	14	7	105	[NT]
Copper	mg/kg	1	Metals-020	<1	21	15	16	6	104	[NT]
Lead	mg/kg	1	Metals-020	<1	21	17	17	0	111	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	21	<0.1	<0.1	0	86	[NT]
Nickel	mg/kg	1	Metals-020	<1	21	10	10	0	99	[NT]
Zinc	mg/kg	1	Metals-020	<1	21	85	89	5	116	[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.

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

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Appendix K: Geotechnical Engineers Reports

GROUND TECHNOLOGIES
Geotechnical . Environmental . Laboratories

Ground Technologies Pty Ltd
ABN 25 089 213 294
[redacted]

SITE INSPECTION MEMO

Client:	Vianello Holdings Pty Ltd	**Job No.:**	GT3231
Project:	Highlands View – Stage 4	**By:**	K. Elmir
Location:	Gunya Dr, Glenmore Park	**Our Ref No.:**	SI001
Contact:	Jason Stephenson (CCL Development)	**Date:**	24-02-2020

Materials Inspection – Processed ACM Type 2

As requested, a representative from Ground Technologies Pty Ltd (GT) visited the subject site on the 3rd and 19th of February 2020 for purpose of Materials Inspection of processed Type 2 stockpile for use as fill in Road 104 containment cell Remediation works.

The inspection was conducted in the presence of Paul Knowles of J. Wyndham Prince Pty Ltd and Nick Groom of EMS.

Site Observations:

Location	Description
3/02/2020 Processed ACM Contaminated Stockpile.	• The Stockpiled ACM contaminated materials were being screened and separated by EMS, • The screened Type 2 material was observed by the writer, it contained Sandy Silt and EMS was advised onsite that the material required further blending with screened aggregates -75mm to 20mm to assist in producing materials that would be suitable for use as a general fill. EMS were also advised that and any visible deleterious materials be removed prior to blending.
19/02/2020 Processed ACM Stockpiles. Screened / Blended and processed Type 2.	• The screened Type 2 materials were further processed by blending with screened -75mm to 20mm aggregates. The aggregates stockpile was being processed using an excavator and pickers to remove visible deleterious materials prior to blending with the screened Type 2 material. • A stockpile of the processed and blended Type 2 material was observed by the writer, it contained Gravelly Sandy Silty Clay. • In our opinion, the processed Type 2 material observed is suitable for use as general fill within the ACM contained cell provided any further deleterious materials are removed during placement. • Monitoring of the processed Type 2 materials will be conducted during Level 1 control of fill placement.

Photos of the Screened Type 2 Material Stockpile 3/02/2020

Photos of the Screened & Processed Type 2 Material Stockpile 19/02/2020

We trust the information contained within meets your present requirements. If you have any queries, please do not hesitate to contact the undersigned.

For and on behalf of
Ground Technologies Pty Ltd

[redacted]

K. Elmir
Principal Laboratory Manager

Reviewed by

[redacted]

A. Bennett
Principal Geotechnical Engineer
B.Eng (Civil) Grad Cert Eng Sc (Geotechnical)
NER, RPEQ

GROUND TECHNOLOGIES
Geotechnical . Environmental . Laboratories

Ground Technologies Pty Ltd
ABN 25 089 213 294
[redacted]

SITE INSPECTION MEMO

Client:	Vianello Holdings Pty Ltd	**Job No.:**	GT3231
Project:	Highlands View – Stage 4	**By:**	K. Elmir
Location:	Gunya Dr, Glenmore Park	**Our Ref No.:**	SI002
Contact:	Jason Stephenson (CCL Development)	**Date:**	26-02-2020

Materials Inspection – Processed ACM Type 2 & Cell Excavation

As requested, a representative from Ground Technologies Pty Ltd (GT) visited the subject site on the 25th of February 2020 for purpose of Materials Inspection of processed Type 2 stockpile for use as fill in Road 104 containment cell Remediation works and inspection of Cell Excavation.

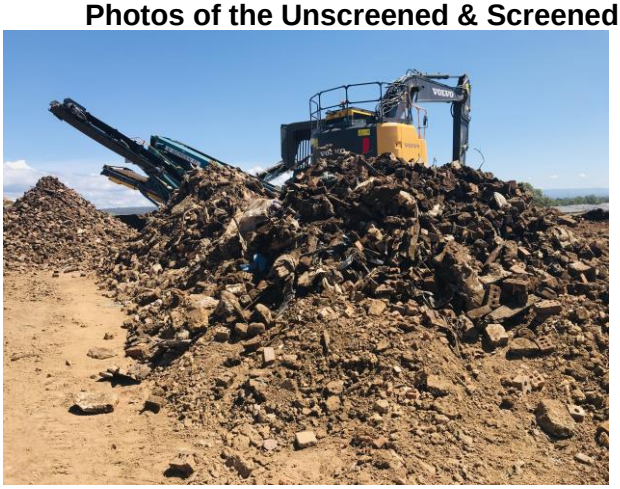
The inspection was conducted in the presence of Paul Knowles of J. Wyndham Prince Pty Ltd and Nick Groom of EMS.

Site Observations:

Location	Description
25/02/2020 Processed ACM Contaminated Stockpile.	• The Stockpiled ACM contaminated materials were being screened and separated by EMS,
Processed ACM Stockpiles. Screened / Blended and processed Type 2.	• The screened Type 2 materials were further processed by blending with screened -75mm to 20mm aggregates. The aggregates stockpile was being processed using an excavator and pickers to remove visible deleterious materials prior to blending with the screened Type 2 material. (No changes since previous visit) • The stockpile of the processed and blended Type 2 material was observed by the writer, it contained Gravelly Sandy Silty Clay. • In our opinion, the processed Type 2 material observed is suitable for use as general fill within the ACM contained cell provided any further deleterious materials are removed during placement. • Monitoring of the processed Type 2 materials will be conducted during Level 1 control of fill placement.
25/02/2020 Proposed Containment Cell Road 104.	• The proposed containment Cell excavations were observed during our visit. The foundation exposed NATURAL - Weathered Shale Bedrock with Silty Clay on the benches. The Cell was approximately 7.5m in width at the base and further excavation is required to complete an approximate 100m long cell. • It is understood that an 815 compacter is the preferred plant to spread and compact ACM fill. The width of this plant is 3.5m, hence it is acceptable for use within the containment cell provided each pass made is staggered to ensure the floor area is covered. (i.e three widths

	of the compactor overlapping to cover the 7.5m width of the cell base). • Upon completion of the cell excavations, the foundation shall be inspected and proofrolled prior to commencement of ACM fill.

Photos of the Unscreened & Screened ACM Material Stockpiles - 25/02/2020



Processing of Oversize Materials - 25/02/2020

Screened & Processed Type 2 Material Stockpile - 25/02/2020

Containment Cell - Road 104 - 25/02/2020

We trust the information contained within meets your present requirements. If you have any queries, please do not hesitate to contact the undersigned.

For and on behalf of
Ground Technologies Pty Ltd

[redacted]

K. Elmir
Principal Laboratory Manager

Reviewed by

[redacted]

A. Bennett
Principal Geotechnical Engineer
B.Eng (Civil) Grad Cert Eng Sc (Geotechnical)
NER, RPEQ

GROUND TECHNOLOGIES
Geotechnical . Environmental . Laboratories

Ground Technologies Pty Ltd
ABN 25 089 213 294
[redacted]

SITE INSPECTION MEMO

Client:	Vianello Holdings Pty Ltd	**Job No.:**	GT3231
Project:	Highlands View – Stage 4	**By:**	K. Elmir
Location:	Gunya Dr, Glenmore Park	**Our Ref No.:**	SI003
Contact:	Jason Stephenson (CCL Development)	**Date:**	28-02-2020

Initial Subgrade Inspection and Proof rolling

As requested, a representative from Ground Technologies Pty Ltd (GT) visited the subject site on the 28th of February 2020 for purpose of Initial Subgrade Inspection and proof rolling of ACM containment Cell in Road 104.

The inspection was conducted at the request of Mr Nick Groom of EMS.

Site Observations:

Location	Description
28/02/2020 Proposed Containment Cell Road 104. (100m in length by 7.5m in width at the base with 1m benches @ 1.5m from the base) Initial Subgrade Level (Refer to survey undertaken by EMS for Reduced Levels)	• The Surface exposed comprised of Natural – Weathered Shale Bedrock with Silty Clay on the benches, light grey, yellow brown to red brown. Free of any vegetation or organic matter. • Proofroll was undertaken with an approximate 20 tonne dead weight dump truck. No visible springing or deformation was observed during the test roll. • Reinspection not required. • The assessed area is suitable for commencement of ACM fill.

Photos of Road 104 ACM containment Cell – Proofroll of Initial Subgrade

GROUND TECHNOLOGIES
Geotechnical Testing Services

Ground Technologies Pty Ltd
ABN 25 089 213 294
[redacted]

Method Specification – ACM Compaction

CLIENT:	J Wyndam Prince	**JOB NO:**	GTE3044
PROJECT:	Highland Views Stage 4	**PREPARED BY:**	A. Bennett
LOCATION:	Road 104	**DATE :**	16/01/2020

1. INTRODUCTION

It is understood that asbestos contaminated material (ACM) will be placed as structural fill beneath Road 104 within Stage 4 of the Highland Views Project. Ground Technologies are to provide earthworks supervision of the process, however traditional methods of compaction control and laboratory testing will not be possible. No ACM material is allowed to leave site during the earthworks procedure for laboratory testing as laboratory testing would endanger the safety of geotechnical laboratory technicians by being in close contact to asbestos contaminated dust. As such, a method specification is required in order to ensure that bulk earthworks are undertaken in accordance with good engineering principals whilst maintaining a safe work environment.

2. LOCATION OF CONTAINMENT CELL

The containment cell is designated within Road 104. The top of the containment cell will be located at a depth of no less than 2.5m below final design level so as to not be disturbed when installing storm water / sewer lines. The fill above the containment cell at Road 104 will be placed in accordance with AS3798-Guidelines for Earthworks on Commercial and Residential Developments and will not contain ACM

Figure 1 – Location of Containment Cell

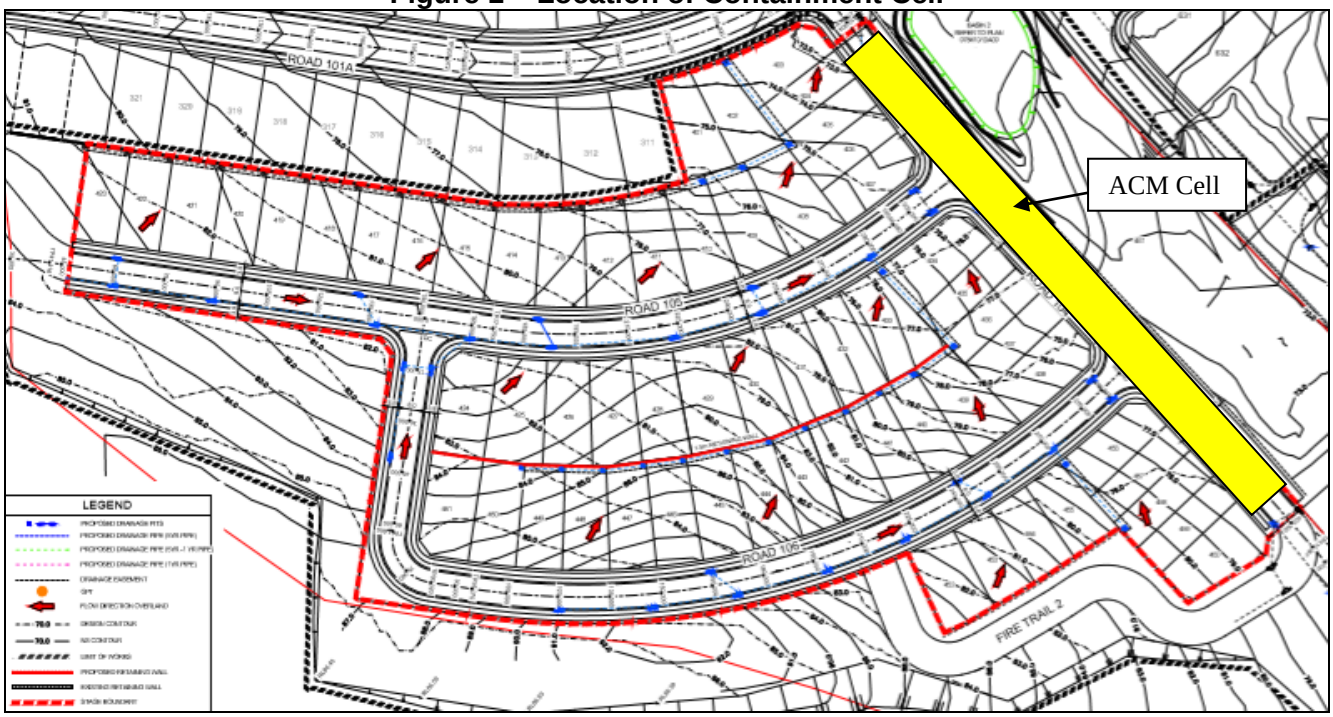
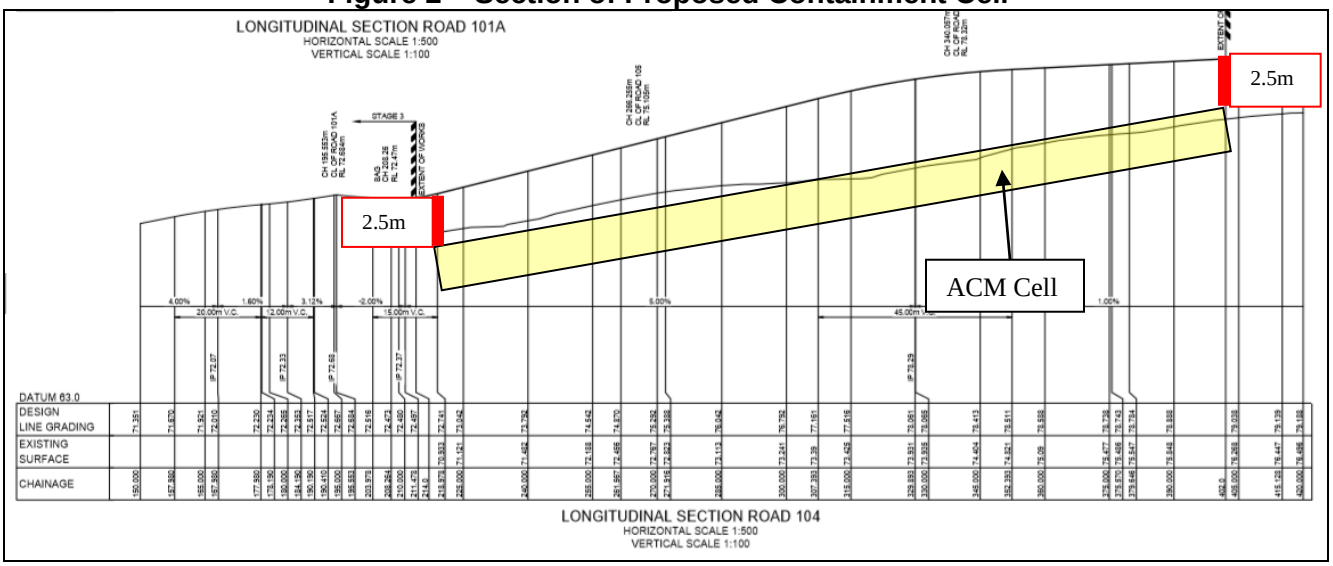


Figure 2 – Section of Proposed Containment Cell



3. ACM FILL MATERIAL

The material used for filling shall be approved by the Geotechnical Inspection and Testing Authority (GITA) as suitable for the proposed use. The material should be screened so as to contain less than 0.25% by mass of unsuitable foreign material. Unsuitable Foreign Materials are defined as:

- Organic soils, such as many topsoils, severely root-affected subsoils and peat
- Silts, or materials that have deleterious engineering properties of silt
- Other materials with properties that are unsuitable for forming structural fill
- Fill which contains wood, metal, plastic, other deleterious materials

Total foreign material (including crushed concrete and brick) must not comprise greater than 2% by mass. Any crushed concrete / brick should be less than 200mm in size.

All engineered fill should be incorporated within a single layer. Less than 30% of particles should be retained on a 37.5mm sieve.

4. ACM CONTAINMENT CELL PREPARATION

The base of the containment cell should be stripped of:

- all vegetation
- any unsuitable soils uncontrolled filling

Stripped materials are to be removed from site or placed in temporary stockpiles for re-use as directed by the site superintendent.

Batters of the containment cell should be benched into the natural subgrade in increments of 1.5m horizontal to 1.5m vertical.

Before placing fill, proof roll exposed subgrade with a minimum 12 tonne static smooth steel wheeled roller to detect and remove any soft spots.

5. PLACEMENT AND COMPACTION PROCEDURE

All fill should be placed and compacted in accordance with good engineering principles and the following recommendations.

- The ACM shall be placed in loose horizontal layers not exceeding 400mm in thickness to allow for a 300mm compacted layer;
- The ACM material is to be moisture conditioned as directed by the GITA.
- The ACM fill shall be compacted with 4 passes of a pad foot roller (minimum 8 tonnes). Note that a pass is deemed to be one forward and back motion. After four passes, the field wet density is to be recorded at three locations using a nuclear density guage.
- The ACM fill shall be compacted with a further 2 passes of a smooth drum roller with a minimum weight of 8 tonnes. Note that a pass is deemed to be one forward and back motion. After the additional two passes, the field wet density is to be recorded at the three original locations. If the field wet density increases by less than 0.02t/m^3 then the layer is completed and approved. Should the field wet density increase by greater than 0.02t/m^3 then further compaction will be required with increments of 2 passes and monitoring undertaken until the field wet density is considered to be constant (i.e. increase of less than 0.02t/m^3)
- One reading per 500m^2 should be undertaken, with a minimum of three readings per lot.
- The GITA should be visually satisfied that the ACM material is suitably compacted and stable before the placement of the next layer may proceed.
- The ACM Monitoring Sheet Should be completed by the GITA monitoring the compaction process

At the completion of each 1.5m of fill placement the GITA will undertake three (3) Dynamic Cone Penetrometer (DCP) tests. This testing is purely for the benefit of the GITA for increased certainty

6. PLACEMENT AND COMPACTION PROCEDURE

The GITA will monitor field compaction and record field results on a ACM Monitoring Sheet. A sample of this sheet is attached

Once a layer has been deemed as suitably compacted a Lot Approval report will be completed and submitted to the site superintendent. A sample of this report is attached

Daily Records shall be completed daily and shall include:

- Time spent on site by the GITA personnel.
- List subgrade assessments and approvals undertaken each day with reference to relevant Subgrade Approval Report(s).
- List Lots presented, accepted and approved or rejected each day, with reference to relevant Lot Approval Report(s).
- Document other relevant activities undertaken on site that day (site instructions, breakdowns, compaction equipment used, etc.).

As this method spec varies from AS3798-Guidelines for Earthworks on Commercial and Residential Developments, authorization should be sought from Penrith City Council prior to the implementation of this method spec in order to ensure that it meets councils desired outcomes.

If you have any queries, please do not hesitate to contact the writer.

For and on behalf of
Ground Technologies Pty Ltd

Reviewed By

[redacted]

A. Bennett
Principal Geotechnical Engineer
B.Eng (Civil) Grad Cert Eng Sc (Geotechnical)
NER, RPEQ

[redacted]

K. Elmir
Laboratory Manager

Attachments:

- *ACM compaction Monitoring Sheet*
- *Lot Approval Report*
- *Daily Record Report*

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ACM COMPACTION MONITORING SHEET

Job No:

Location: Road 104 ACM Containment Cell

Highland Views Stage 4

Date:

Time:

Technician:

Layer	Field Wet Density after 4 passes with 8 tonne Pad Foot Roller	Field Wet Density after 6 passes with 8 tonne Pad Foot Roller	Field Wet Density after 8 passes with 8 tonne Pad Foot Roller	Field Wet Density after 10 passes with 8 tonne Pad Foot Roller	Layer Pass

Layer	Field Wet Density after 4 passes with 8 tonne Pad Foot Roller	Field Wet Density after 6 passes with 8 tonne Pad Foot Roller	Field Wet Density after 8 passes with 8 tonne Pad Foot Roller	Field Wet Density after 10 passes with 8 tonne Pad Foot Roller	Layer Pass

Layer	Field Wet Density after 4 passes with 8 tonne Pad Foot Roller	Field Wet Density after 6 passes with 8 tonne Pad Foot Roller	Field Wet Density after 8 passes with 8 tonne Pad Foot Roller	Field Wet Density after 10 passes with 8 tonne Pad Foot Roller	Layer Pass

CLIENT:		**JOB NO:**	
PROJECT:		**TECHNICIAN:**	
LOCATION:		**DATE:**	/ /

LOT APPROVAL REPORT - ACM

Lot ID / Layer No:	
Retest (Yes / No)	
Specification Reference:	
Materials Description:	
Compacted Layer Thickness:	
Accepted as a Lot (Yes/No)	
Number of Passes Conducted	
Rolling Start / Finish Times	

Note: The Field Moisture Content was obtained by using the nuclear densometer in conjunction with the Field Wet Density.
Moisture Contents obtained have not been adjusted for Bias and no moisture Content corrections have been applied due to ACM Fill being used, hence no oven moisture content could be determined as per AS 1289.2.1.1.
However, care shall be taken when using a moisture intercept as the measurement may be affected by the moisture content of underlying layers, particularly if the difference in moisture content of the layers is significant.
(Refer to AS1289.5.8.1-2007, APPENDIX B, MOISTURE INTERCEPTS)

LOT APPROVAL	PASS/FAIL	Signed By:	Date:

CLIENT:	**JOB NO:**
PROJECT:	**TECHNICIAN:**
LOCATION:	**DATE:**

DAILY RECORDING PROCEDURE- LEVEL 1 TESTING

Weather		**Visitors**		**Site Hours:**
Location of Fill placement				
Method of Fill Placement **Detail on hourly basis**				
Plant Operating				
Origin of Material				
Material Description				
Material Conformity: Oversize Observed:				
Layer Thickness Layer Number Control Point				
Visual M/C Assessment				
Density Tests Undertaken				
Sampling for Laboratory Tests				
Suggestions/ Discussions/ Lots Placed: Non Conformance:				

Chargeable Time:	**Date Received:**
Client Representative:	**Client Signature:**

We trust the information contained within meets your present requirements. If you have any queries, please do not hesitate to contact the undersigned.

For and on behalf of
Ground Technologies Pty Ltd

[redacted]

K. Elmir
Principal Laboratory Manager

Reviewed by

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