



## **Loose Fill Asbestos – Site Soil Validation Report**

**KAMBAH, Block 6, Section 352:**

**6 Lawrence Crescent, Kambah, ACT, 2902, Australia**

**Prepared by: WSP Australia Pty Limited**

**For**

**ACT Asbestos Response Taskforce**

### **Introduction**

This report contains the results of an investigation and remediation of asbestos fibres in soil of the demolition work area of a property which is a registered loose fill asbestos affected property.

The Australian Capital Territory ('Territory') has acquired a number of properties affected with loose fill asbestos insulation (comprising mainly amosite and some crocidolite asbestos) and is carrying out remediation of the demolition work area of the properties to ensure that the land is suitable for future residential reuse.

We were engaged by the Territory to provide sampling to validate the remediation of asbestos fibres in soil within the demolition work area for the sole purpose of assisting the Territory with its pre-development investigations in land identified for release for future residential reuse following completion of preliminary works by others, namely:

- demolition of the house by a principal contractor, including a scrape of affected soil;
- clearance of the site as free of visible asbestos by a licensed asbestos assessor; and
- definition of the demolition work area by a licensed asbestos assessor.

The demolition work area is the area to which the asbestos removal clearance certificate applies and is defined by the licensed asbestos assessor. It generally comprises the original pre-demolition structure footprint of the affected premises, the decontamination unit and asbestos waste skip handling area, and the soil disturbance work area of the demolition contractor. It excludes the remainder of the property including any earthworks outside of the demolition work area and where other non-affected structures have been removed or landscaping work carried out. The licensed asbestos assessor prepared a simple plan of the demolition work area for later sampling of soil by the soil validator (WSP Australia Pty Limited).

Prior to sampling of soil in the demolition work area (refer to the methodology used for the sampling of soils described below), WSP Australia Pty Limited met on the site with the principal contractor (AGH Demolition & Asbestos Removal), who identified the extent of the demolition work area (as defined by the licensed asbestos assessor). The confirmed demolition work area for soil sampling is illustrated in Figure 1, **Attachment A**.

The scope of work was performed solely for the Territory and specifically targeted loose fill asbestos insulation (comprising mainly amosite and some crocidolite fibres). Any other forms of contaminants on site (e.g. lead, bonded asbestos) were not assessed. This report (including the conclusions and recommendations it contains) is prepared solely for use by the Territory and may not be used or relied upon by any other party. Any other party must make its own inquiries and obtain independent advice.

WSP Australia Pty Limited has assumed (i) the accuracy and completeness of all information provided to it by the principal contractor and licensed asbestos assessor, and (ii) the integrity of the clearance certificate provided as **Attachment B**.

The asbestos fibre in soil investigation was done in accordance with the Asbestos Response Taskforce Information sheet - Soil Validation Process (dated 10 November 2015), the ACT Government-endorsed National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) (the NEPM ASC) and the 'Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (May 2009)' (the WA Guidelines).

The investigation was undertaken after all visible loose fill asbestos and any other visible asbestos containing materials had been removed from the demolition work area, including a scrape of affected soil from the demolition work area, and a post demolition asbestos removal clearance certificate was issued by licensed asbestos assessor [REDACTED] of JMB Environmental Consulting [REDACTED].

### Site Identification and Soil Condition of Demolition Work Area

The site may be identified according to the following parameters:

Parameter	Details	Parameter	Details
Division	KAMBAH	Block Size / Area	946 m <sup>2</sup>
Block	6	Demolition Work Area	748 m <sup>2</sup>
Section Number	352	Original Site Features	Double storey dwelling with detached car port and swimming pool.

The post-demolition and post-remediation surface site conditions were observed by WSP Australia Pty Limited to feature occasional rocks, pockets of gravel, plant matter, and broken glass; however, no suspected friable asbestos containing materials (ACM) were observed either at the surface or during sampling.

After the 100mm remedial soil 'scrape' had been completed within the demolition work area, underlying exposed soils were observed during WSP Australia Pty Limited's sampling to typically comprise brown clay sand with traces of gravel.

### Site Demolition Work Area and Sampling Plan

A site drawing showing the site property boundary, demolition work area (as identified by the licenced asbestos assessor) and validation sample points is provided as Figure 1 in Attachment A.

### Soil Sampling Methodology At Demolition Work Area

WSP Australia Pty Limited attended the site on 6 October 2017 after the Principal Contractor (AGH Demolition & Asbestos Removal) confirmed the completion of demolition works and site clearance.

A description of the sampling methodology is detailed below and a summary of the sampling works including locations and rates is provided in the subsequent table:

- Samples were obtained from the demolition work area. The samples were collected at a density which is twice that recommended in the adopted guidelines.

- Soil samples (approximately 500g) were collected in a soil sample bag that were then submitted to a NATA accredited laboratory for sieving and gravimetric determination of asbestos (<7 mm).

Location	Sample Rate	No. Samples	Analysis
Demolition Work Area	Twice the density as per table in Appendix A of WA Guidelines <sup>1</sup> (2 samples every 100m <sup>2</sup> )	11	Amosite and crocidolite and chrysotile fibres <sup>2</sup>

**Note:**

-the NEPM screening level of 0.001% w/w asbestos in soil for fibrous asbestos (FA) and asbestos fines (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. As per page 34 of the Guidelines, soil contamination by free fibres should be determined according to the presence or absence of fibres.

<sup>1</sup>: There are no clean vertical excavation faces on the demolition work area perimeter, so perimeter samples may be omitted]

<sup>2</sup>: Chrysotile fibres are not in loose fill asbestos insulation. However, they may be present as a contaminant in the residential soil or as a result of demolition. Whilst this report validates the remediation of the demolition works area primarily with respect to amosite or crocidolite loose fill asbestos, this report also contains information on any action taken with respect to chrysotile asbestos fibres.

Samples were collected by an experienced environmental consultant.

The assessment was limited to the demolition work area (**Attachment A**) as defined by the licenced asbestos assessor [REDACTED]

Sampling locations are shown on the figure in **Attachment A**.

A photographic record of the validation sampling exercise is provided as **Attachment C**.

## Validation Results

The following validation soil sample analytical results were returned from the laboratory; laboratory certificates are provided **Attachment D**:

Sample No.	Grid Location (Easting, Northing)		Result / Asbestos Type
S1	687749	6082593	Non-Detect / Not Applicable
S2	687754	6082595	Non-Detect / Not Applicable
S3	687760	6082591	Non-Detect / Not Applicable
S4	687767	6082586	Non-Detect / Not Applicable
S5	687764	6082595	Non-Detect / Not Applicable
S6	687759	6082604	Non-Detect / Not Applicable
S7	687766	6082599	Non-Detect / Not Applicable
S8	687773	6082596	Non-Detect / Not Applicable
S9	687776	6082604	Non-Detect / Not Applicable
S10	687769	6082608	Non-Detect / Not Applicable
S11	687768	6082612	Non-Detect / Not Applicable

## **Analytical Procedures**

Asbestos in soil analysis was carried out in accordance with the WA Guidelines and the 'Australian Standard for the Qualitative Identification of Asbestos in Bulk Samples' (AS4964-2004).

## **Hot Spot Treatment**

Not Applicable due to no sample failures.

## **Recommendation for Residential Reuse**

The asbestos in soil investigation and remediation work to address potential impact of asbestos fibres in the demolition work area of a former house affected by loose fill asbestos at Kambah, Block 6, Section 352, 6 Lawrence Crescent, Kambah, has been completed as detailed in this report, in accordance with the NEPM ASC and the WA Guidelines. On that basis, I recommend to the Territory that the demolition work area of this property is suitable for residential reuse with respect to asbestos fibres.

**For and on behalf WSP Australia Pty Limited**



Associate Director

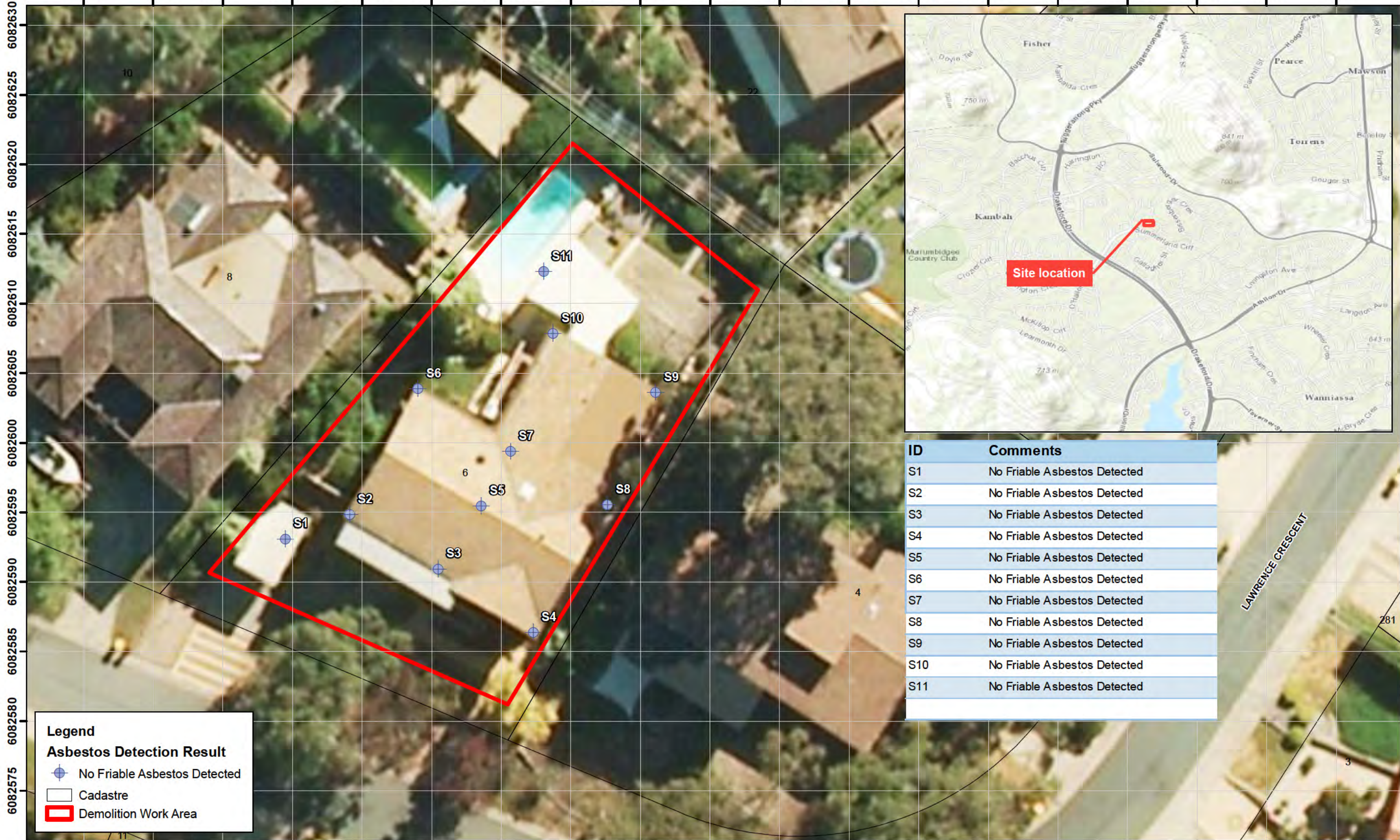
Date: 16 October 2017

## **Attachments**

This Site Soil Validation Report should be read in conjunction with the following attachments:

- **Attachment A:** Figure 1
- **Attachment B:** Asbestos Clearance Certificate
- **Attachment C:** Photographic Record of Site Soil Validation
- **Attachment D:** Validation Sample Laboratory Certificate(s)

**Attachment A: Figure 1**



ID	Comments
S1	No Friable Asbestos Detected
S2	No Friable Asbestos Detected
S3	No Friable Asbestos Detected
S4	No Friable Asbestos Detected
S5	No Friable Asbestos Detected
S6	No Friable Asbestos Detected
S7	No Friable Asbestos Detected
S8	No Friable Asbestos Detected
S9	No Friable Asbestos Detected
S10	No Friable Asbestos Detected
S11	No Friable Asbestos Detected

**Legend**

**Asbestos Detection Result**

- No Friable Asbestos Detected
- Cadastre
- Demolition Work Area

Map: 2270476B\_GIS\_111\_A Author:

Date: 11/10/2017 Approved by:

Scale ratio correct when printed at A3

Coordinate system: GDA 1994 MGA Zone 55



**Loose Fill Asbestos Affected Property - Site Soil Validation Report**  
**Figure 1**  
 6 Lawrence Crescent, Kambah, ACT

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**Attachment B: JMB Environmental Consulting Asbestos Clearance Certificate**

## PROJECT DETAILS

JOB NUMBER	KEF436	CLEARANCE DATE	03 Oct 2017
CLIENT	AGH Demolition & Asbestos Removal	REPORT DATE	03 Oct 2017
CONTACT NAME	[REDACTED]	CONTACT NUMBER	+ [REDACTED]
SITE ADDRESS	6 Lawrence Crescent Kambah, ACT 2902		
SCOPE OF WORKS	Demolition and removal of remediated loose fill insulation house and impacted soil.		
SCOPE OF CLEARANCE	A thorough visual inspection was carried out of the removal and surrounding areas		
ASBESTOS CONTRACTOR	AGH Demolition & Asbestos Removal	SUPERVISOR	[REDACTED]
ASBESTOS ASSESSOR	[REDACTED]	LICENCE NUMBER	[REDACTED]
LEGISLATION	Asbestos removal clearance certificate issued under regulations 473 & 474 of the Work Health Safety Regulation 2011		

## VISUAL CLEARANCE

	YES	NO	N/A
Did inspection of the specific work area detailed above find no visible asbestos remaining as a result of the demolition work carried out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was raking of the soil carried out within the demolition zone and no visible asbestos material as a result of the remediation work carried out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did the inspection cover the whole site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can the site be safely accessed and soil validation commence?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is a site plan attached showing the demolition zone?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have site photographs been included in this report?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## CONCLUSION

A thorough visual inspection and raking of the soil within the demolition zone was conducted and found **no visible asbestos material** from demolition work in the area or in the vicinity of the area where the work was carried out.

This area has been cleared for soil validation and the site can be handed over on successful completion of the soil validation.

**Note:** Asbestos material may be present within the soil at depth or outside the demolition zone. The site infrastructure on the block associated with the property, including the concrete paths/driveways, retaining walls, concrete slabs and subterranean pipework remain onsite. See attached site plan showing the demolition zone.

Kind Regards,

[REDACTED]

[REDACTED]

**Hygienist**

PHOTOS



Driveway outside the demolition zone



Cleared area of the demolition zone



Cleared area of the demolition zone



Cleared area of the demolition zone

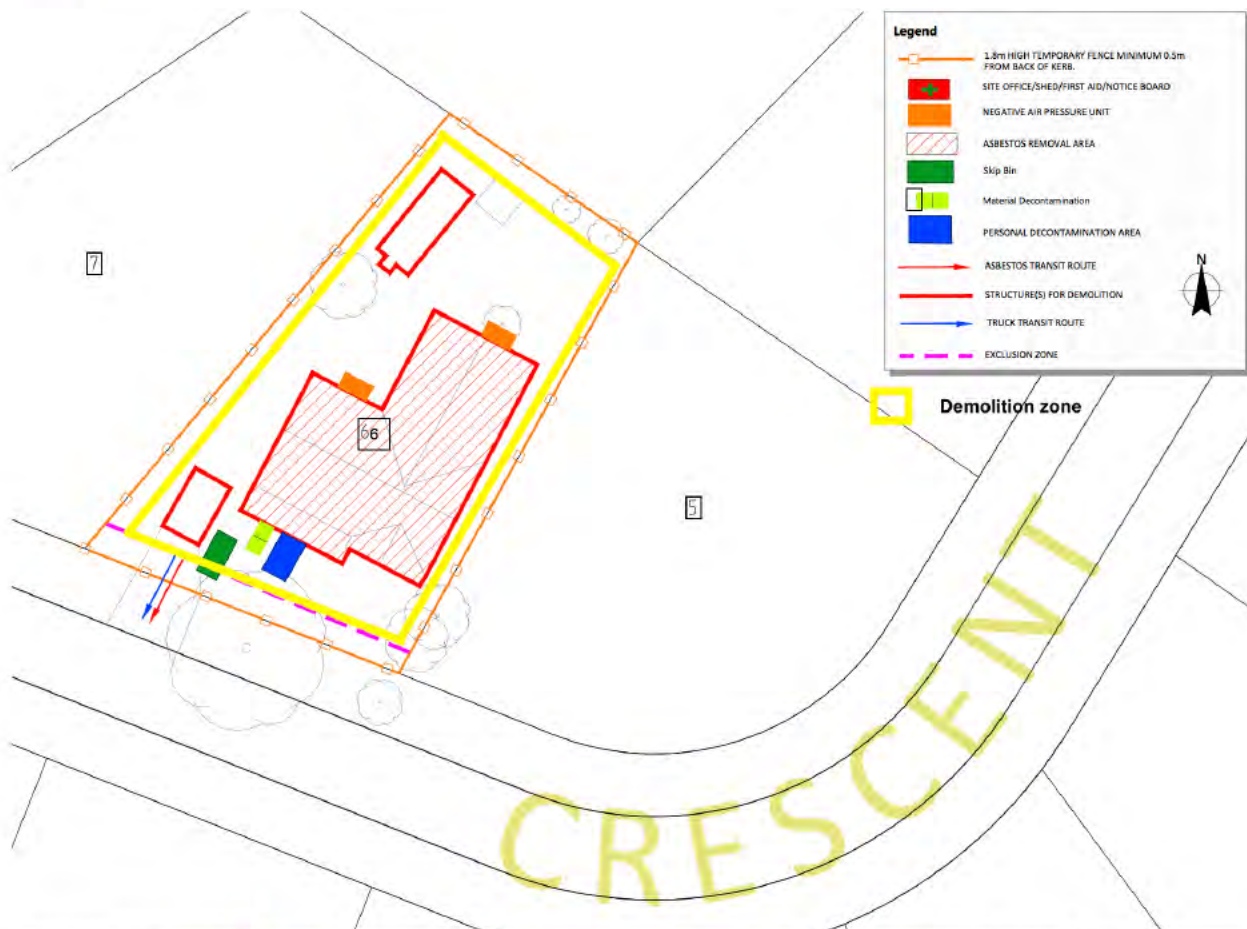



Cleared area of the demolition zone



Garden bed outside the demolition zone

SITE PLAN



Approved As Suitable For Use	 <b>Territory Traffic Engineering</b> 14/160 Lyngall Street Mitchell ACT 2911 6th Floor, 4th Floor Kambah ACT 2511	Client:  <b>DEMOLITION &amp; ASBESTOS</b>	Project: <b>6 Lawrence Cres Kambah Blk 6 Sec 352 ZONE 1</b> Drawing Title:	<b>Evacuation And Site Arrangement Plan</b>		
Endorses:				Project Number	Plan Type	Plan Number
				TT17-ACM-7025	EACA	1

Site Plan

**Attachment C: Photographic Record of Site Soil Validation**



**PHOTOGRAPHIC REGISTER**  
**Site Soil Validation**

<b>Client Name</b> ACT Government	<b>Site Location</b> KAMBAH, Block 6, Section 352: 6 Lawrence Crescent, Kambah, ACT, 2902, Australia	<b>Project No.</b> 2270476B - 087
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<b>Photo No.</b> 1	<b>Date</b> 06/10/2017	
<b>Description</b> Sample site location.		

<b>Photo No.</b> 2	<b>Date</b> 06/10/2017	
<b>Description</b> Post demolition and scrape, facing north.		



**PHOTOGRAPHIC REGISTER**  
**Site Soil Validation**

<b>Client Name</b> ACT Government	<b>Site Location</b> KAMBAH, Block 6, Section 352: 6 Lawrence Crescent, Kambah, ACT, 2902, Australia	<b>Project No.</b> 2270476B - 087
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<b>Photo No.</b> 3	<b>Date</b> 06/10/2017	
<b>Description</b> Post demolition and scrape, facing north.		

<b>Photo No.</b> 4	<b>Date</b> 06/10/2017	
<b>Description</b> Post demolition and scrape, facing north east.		



**PHOTOGRAPHIC REGISTER**  
**Site Soil Validation**

<b>Client Name</b> ACT Government	<b>Site Location</b> KAMBAH, Block 6, Section 352: 6 Lawrence Crescent, Kambah, ACT, 2902, Australia	<b>Project No.</b> 2270476B - 087
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<b>Photo No.</b> 5	<b>Date</b> 06/10/2017	
<b>Description</b> Post demolition and scrape, facing east.		

<b>Photo No.</b> 6	<b>Date</b> 06/10/2017	
<b>Description</b> Post demolition and scrape, soil detail.		

**Attachment D: Validation Sample Laboratory Certificates**

WSP

# GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

OCTOBER 2017

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# GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

WSP

WSP  
LEVEL 1, 121 MARCUS CLARKE STREET  
CANBERRA ACT 2601  
PO BOX 1551  
CANBERRA ACT 2600

TEL: +61 2 6201 9600  
FAX: +61 2 6201 9666  
WSP.COM

REV	DATE	DETAILS
Original	09/10/17	6 Lawrence Crescent Kambah_ACT-2270476B-0082-81599
A	10/10/17	6 Lawrence Crescent Kambah_ACT-2270476B-0082-81599-Rev A

	NAME	DATE	SIGNATURE
Prepared by:		10/10/17	
Reviewed by:		10/10/17	

# ABBREVIATIONS

A	Amosite Asbestos Detected
ACM	Asbestos Containing Material
AF	Asbestos Fines
C	Crocidolite Asbestos Detected
CH	Chrysotile Asbestos Detected
FA	Fibrous Asbestos
NAD	No Asbestos Detected
NEPM	National Environment Protection Measures
OF	Organic Fibres Detected
PLM	Polarised Light Microscopy
SMF	Synthetic Mineral Fibres Detected
UMF	Unknown Mineral Fibres Detected

# ANALYSIS METHODOLOGY

Samples received by the laboratory are analysed in accordance with section 8.2.3 *Soil Samples* of Australian Standard (AS 4964-2004). Trace analysis is conducted in accordance with section 8.4 *Trace analysis criteria* of the standard. Asbestos analysis is conducted in accordance with the standard section 8.3.3 *Analytical criteria*. The asbestos analysis process follows methodology outlined in section D *Simplified flowchart for bulk asbestos identification*.

After confirmation, the relative degree of contamination is required to be assessed for the potential risk to health. This is done in accordance with the method outlined within Clause 4.1.7 of the *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia – May 2009*. This method provides a validated criteria in determining the degree of contamination. This method primarily refers to the visual inspection of the soil surface and the manual collection of Asbestos Containing Materials (ACM) and soil samples. Percentages for Asbestos content in ACM are based on the 2013 NEPM default values.

The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres (Respirable Fibres). Loose respirable fibres are detected under criteria set by Australian Standard (AS 4964-2004), section 8.4 *Trace analysis criteria*, with an implied detection and reporting limit of 0.1g/kg.

Non-Friable (ACM) weight is calculated based on the assumption of 15% asbestos by weight in non-friable ACM products used in Australia. Fibrous Asbestos (AF) and Asbestos Fines (AF) making up the Friable Asbestos weight is calculated based on the assumption of 100% asbestos by weight. Soil density is based on observations on site and it may range between 1.55 kg/L to 1.7 kg/L depending on the type of soil and locality.

## **METHOD SPECIFIC DEFINITION**

- Asbestos Containing Materials (ACM) - comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
- Fibrous Asbestos (AF) - comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded (non-friable) or was previously bonded and is now significantly degraded (crumbling).
- Asbestos Fines (AF) - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.

# ANALYSIS RESULTS

	UNIT	LIMIT OF REPORTING	SAMPLE: S1	SAMPLE: S2	SAMPLE: S3	SAMPLE: S4	SAMPLE: S5	SAMPLE: S6	SAMPLE: S7	SAMPLE: S8	SAMPLE: S9	SAMPLE: S10	SAMPLE: S11
Total Soil Weight	kg	0.001	0.843	0.806	0.809	0.861	0.889	0.803	0.817	0.873	0.717	0.844	0.767
Asbestos Type Detected	N/A	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Free Fibres (Respirable Fibres) in <2mm Sample	g/kg	0.1	No	No	No	No	No	No	No	No	No	No	No
ACM in >7mm Sample	g	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
AF/FA in <7mm Sample	g	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
ACM Weight (as 15% Asbestos in ACM >7mm)	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001

## LEGEND:

NAD	No Asbestos Detected
CH	Chrysotile Asbestos Detected
A	Amosite Asbestos Detected
C	Crocidolite Asbestos Detected
UMF	Unknown Mineral Fibres Detected
SMF	Synthetic Mineral Fibres Detected
OF	Organic Fibres Detected

	UNIT	LIMIT OF REPORTING	SAMPLE: S1	SAMPLE: S2	SAMPLE: S3	SAMPLE: S4	SAMPLE: S5	SAMPLE: S6	SAMPLE: S7	SAMPLE: S8	SAMPLE: S9	SAMPLE: S10	SAMPLE: S11
Asbestos in soil (as 100% Asbestos in AF/FA <7mm)	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

LEGEND:

NAD	No Asbestos Detected
CH	Chrysotile Asbestos Detected
A	Amosite Asbestos Detected
C	Crocidolite Asbestos Detected
UMF	Unknown Mineral Fibres Detected
SMF	Synthetic Mineral Fibres Detected
OF	Organic Fibres Detected

# APPENDIX A

AS 4964 LABORATORY CERTIFICATES





WSP Australia  
Pty Limited

Level 1 121 Marcus Clarke Street  
PO Box 1551 Canberra ACT 2600  
Telephone +61 2 6201 9600  
Facsimile +61 2 6201 9666  
Email ANZLab@pbworld.com

# Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

**LOCATION:** 6 Lawrence Crescent, Kambah, ACT

**CERTIFICATE NO:** ACT-2270476B-0083-82010-RevA

**CLIENT:** ACT Procurement

**DATE(S) SAMPLED:** 6/10/2017

**CLIENT ADDRESS:** PO Box 818, Dickson ACT 2602

**DATE RECEIVED:** 6/10/2017

**TELEPHONE:** 6205 8636

**DATE ANALYSED:** 10/10/2017

**EMAIL:** Grant.Johnston@act.gov.au

**ORDER NUMBER:** 87

**CONTACT:** Grant Johnston

**SAMPLED BY:** [REDACTED]

**TEST METHOD:** Qualitative identification of Asbestos fibre in bulk and soil samples at WSP Corporate Laboratories, by polarised light microscopy, including dispersion staining techniques using AS4964 (2004) and supplementary in house laboratory procedure (LP3 - Identification of Asbestos Fibres). This document is issued in accordance with NATA's requirements under NATA accreditation No. 17199, accredited for compliance with ISO/IEC: 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standard.

This Certificate Replaces Certificate No. ACT-2270476B-0083-82010.

Lab No	Sample ID	Sample Description	Sample Dimensions	Identification Type
001	S1	Soil	843 gm	OF, NAD
002	S2	Soil	806 gm	OF, NAD
003	S3	Soil	809 gm	OF, NAD
004	S4	Soil	861 gm	OF, NAD
005	S5	Soil	889 gm	OF, NAD
006	S6	Soil	803 gm	OF, NAD
007	S7	Soil	817 gm	OF, NAD
008	S8	Soil	873 gm	OF, NAD
009	S9	Soil	717 gm	OF, NAD
010	S10	Soil	844 gm	OF, NAD
011	S11	Soil	767 gm	OF, NAD

**LEGEND:**

- NAD - No Asbestos Detected
- CH - Chrysotile Asbestos Detected
- A - Amosite Asbestos Detected
- C - Crocidolite Asbestos Detected
- UMF - Unknown Mineral Fibres Detected
- SMF - Synthetic Mineral Fibres Detected
- OF - Organic Fibres Detected



ACCREDITED FOR  
**TECHNICAL  
COMPETENCE**

Hand picked refers to small discrete amounts of asbestos distributed unevenly in a large body of non asbestos material.

**Notes:**

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. This document may not be reproduced except in full.

Approved Identifier

Name: [REDACTED]



Approved Signatory

Name: [REDACTED]



AUTHORISATION DATE

10/10/2017

PROJECT DETAILS

JOB NUMBER	KEF436	CLEARANCE DATE	21 Mar 2018
CLIENT	AGH Demolition & Asbestos Removal	REPORT DATE	21 Mar 2018
CONTACT NAME & NUMBER	[REDACTED]		
SITE ADDRESS	6 Lawrence Crescent Kambah ACT 2902		
SCOPE OF CLEARANCE	Removal of non friable asbestos sheet debris and any demolition waste from loose fill affected house demolition works.		
ASBESTOS CONTRACTOR	AGH Demolition & Asbestos Removal	SUPERVISOR	[REDACTED]
ASBESTOS ASSESSOR	[REDACTED]	LICENSE NUMBER	[REDACTED]
LEGISLATION	Asbestos removal clearance certificate issued under regulations 473 & 474 of the Work Health Safety Regulation 2011		

VISUAL CLEARANCE

	YES	NO	N/A
Did inspection of the removal area detailed above find no visible asbestos remaining as a result of the asbestos removal work carried out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has all accessible non friable asbestos containing material and demolition waste been removed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are photographs attached for all phases of the clearance inspection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CONCLUSION

A thorough a visual inspection after completion of the above scope of works at the site location stated above and found no visible asbestos residue from asbestos removal work in the area, or in the vicinity of the area, where the work was carried out. Note: The excavation adjacent the asbestos sheet removal area is filled with water and could not be inspected.

The asbestos removal work area can now be dismantled and the area safely reoccupied.

Photographs from the site inspection are attached at Appendix A.

[REDACTED]

[REDACTED]

Director & Principal Hygienist

APPENDIX A - PHOTOS



*Removal area*



*Removal area*



*Removal area*



*Removal area*



*Removal area*



*Pool excavation with water ingress*

## **Loose Fill Asbestos Site Soil Validation Report**

KAMBAH Block # 22, Section # 469,  
45 McDermott Street, Kambah ACT 2902

**Prepared by:** OCTIEF Pty Ltd

**For**

**ACT Asbestos Response Taskforce**

### **Introduction**

This report contains the results of an investigation and remediation of asbestos fibres in soil of the demolition work area of a property which is a registered loose fill asbestos affected property.

The Australian Capital Territory ('Territory) has acquired a number of properties affected with loose fill asbestos insulation (comprising mainly amosite and some crocidolite asbestos) and is carrying out remediation of the demolition work area of the properties to ensure that the land is suitable for future residential reuse.

We were engaged by the Territory to provide sampling to validate the remediation of asbestos fibres in soil within the demolition work area for the sole purpose of assisting the Territory with its pre-development investigations in land identified for release for future residential reuse following completion of preliminary works by others, namely:

- . demolition of the house by a principal contractor, including a scrape of affected soil;
- . clearance of the site as free of visible asbestos by a licensed asbestos assessor; and
- . definition of the demolition work area by a licensed asbestos assessor.

The demolition work area is the area to which the asbestos removal clearance certificate applies and is defined by the licensed asbestos assessor. It generally comprises the original pre-demolition structure footprint of the affected premises, the decontamination unit and asbestos waste skip handling area, and the soil disturbance work area of the demolition contractor. It excludes the remainder of the property including earthworks outside of the demolition work area where other non-affected structures have been removed or landscaping work carried out. The licensed asbestos assessor prepared a simple plan of the demolition work area for later sampling of soil by [REDACTED] (Licensed Asbestos Assessor, license no. [REDACTED]) OCTIEF Pty Ltd soil validator.

Prior to sampling of soil in the demolition work area (refer to the methodology used for the sampling of soils described below), [REDACTED] of OCTIEF Pty Ltd met with the principal contractor [REDACTED] of AGH Demolition and Asbestos Removals who identified the extent of the demolition work area (as defined by the licensed asbestos assessor). The confirmed demolition work area for soil sampling is illustrated in Attachment 2.

The scope of work was performed solely for the Territory and specifically targeted loose fill asbestos insulation (comprising mainly amosite and some crocidolite fibres). Any other forms of contaminants on site (e.g. lead, bonded asbestos) were not assessed. This report (including the conclusions and recommendations it contains) is prepared solely for use by the Territory and may not be used or relied upon by any other party. Any other party must make its own inquiries and obtain independent advice.

We have assumed the accuracy and completeness of all information provided to it by the principal contractor and licensed asbestos assessor, and the integrity of the clearance certificate provided as Attachment 4.

The asbestos fibre in soil investigation was done in accordance with the Asbestos Response Taskforce Information sheet - Soil Validation Process (dated 10 November 2015), and with general accordance with the ACT Government-endorsed *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)* (the NEPM ASC) and the 'Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia (May 2009)' (the WA Guidelines).

The investigation was undertaken after all visible loose fill asbestos and any other visible asbestos containing materials had been removed from the demolition work area, including a scrape of affected soil from the demolition work area, and a post demolition asbestos removal clearance certificate was issued by licensed asbestos assessor [REDACTED] of JMB Environmental Consulting Pty Ltd ([REDACTED]).

### **Site Identification and Soil Condition of Demolition Work Area**

Soil sampling was conducted at the demolished dwelling located at 45 McDermott Street, Kambah ACT 2902. At the time of inspection some foliage present around road entrance, northern and western boundaries. The approximate size of the block and demolition work area was 697m<sup>2</sup> and 506m<sup>2</sup> respectively. Note a colour bond fence (to the eastern boundary) remains between 45 McDermott Street and 47 McDermott Street, Kambah ACT 2902.

Prior to soil sampling, the soil at the site demolition work area was noted to be silt and clay. The soil was moist during sampling.

### **Site Demolition Work Area and Sampling Plan**

An initial site walkover was conducted to confirm the area outlined in the demolition work area, provided by the licenced assessor, was sufficient to contain all soil validation sampling points required. The provided demolition work area sufficiently incorporated the demolition disturbance area, the house foot print, decontamination areas and areas accessed with machinery and equipment. No additional areas appeared to be disturbed at the time inspection.

Soil validation sampling points in relation to the demolition work area are provided below in Figure 1.

Hot Spot soil validation sampling points in relation to the demolition work area are provided below in Figure 2.

Final Hot Spot soil validation sampling points in relation to the demolition work area are provided below in Figure 3.

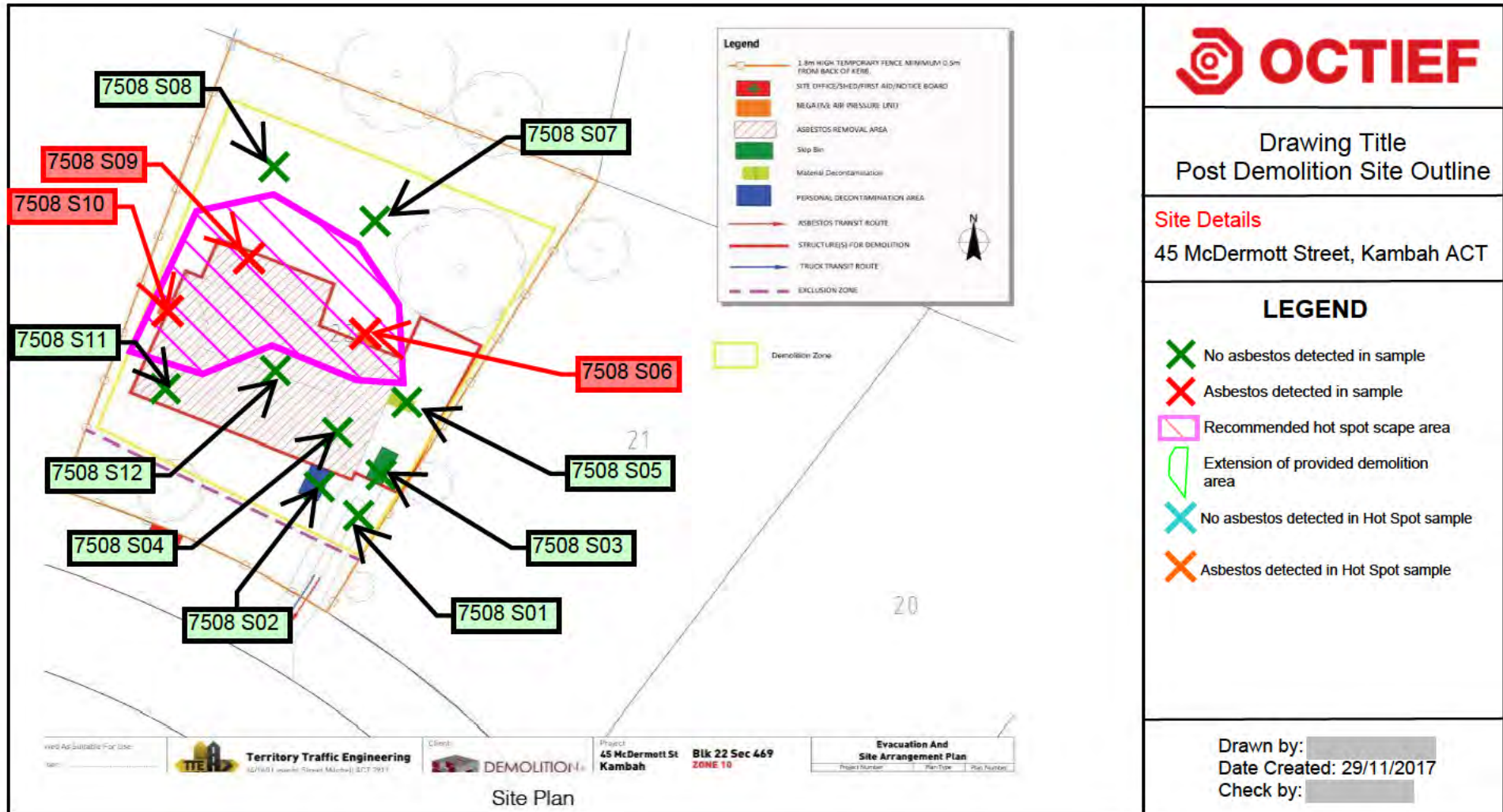


Figure 1. Site demolition work area and sampling plan

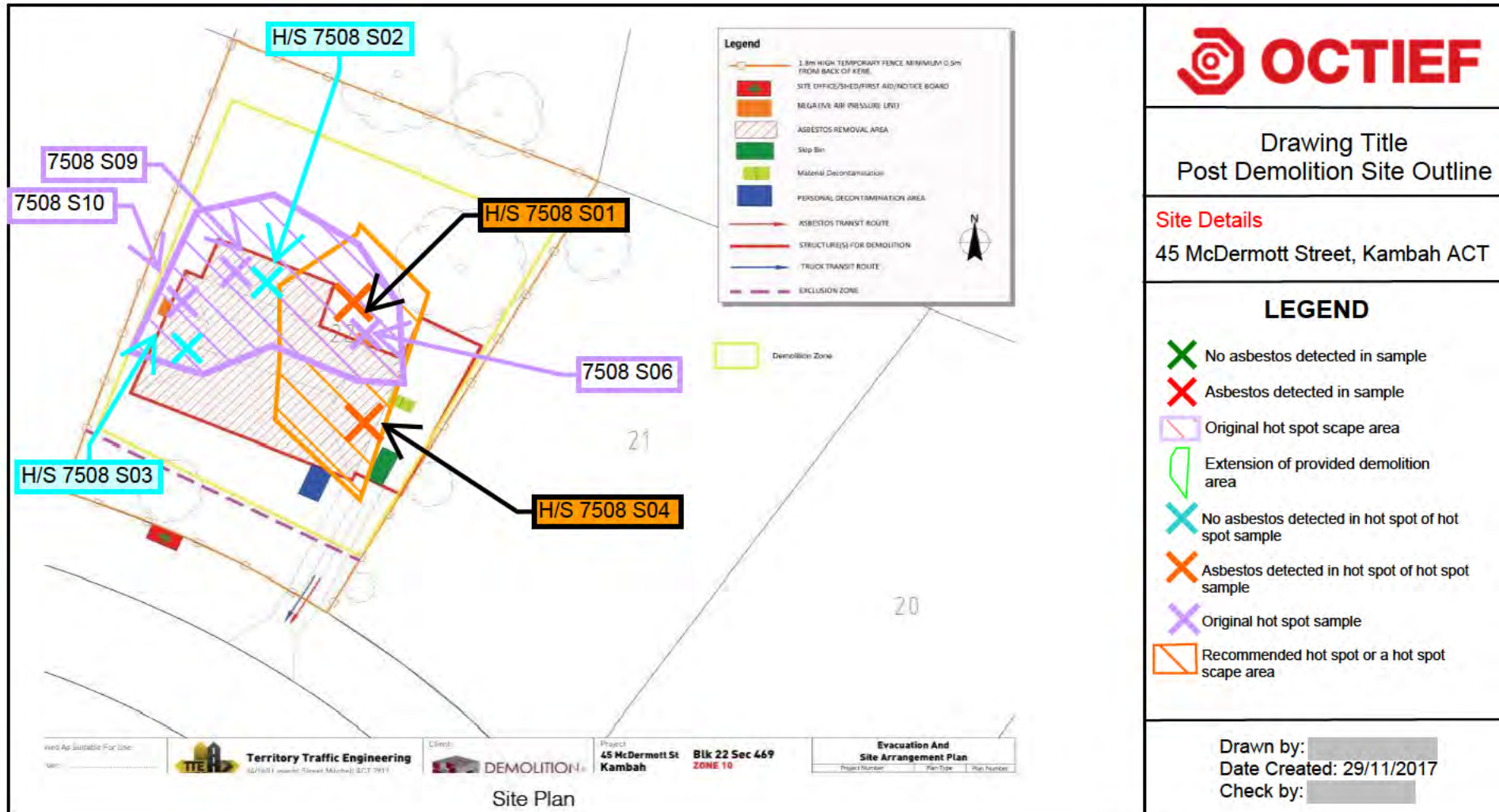


Figure 2. Hot Spot Site demolition work area and sampling plan

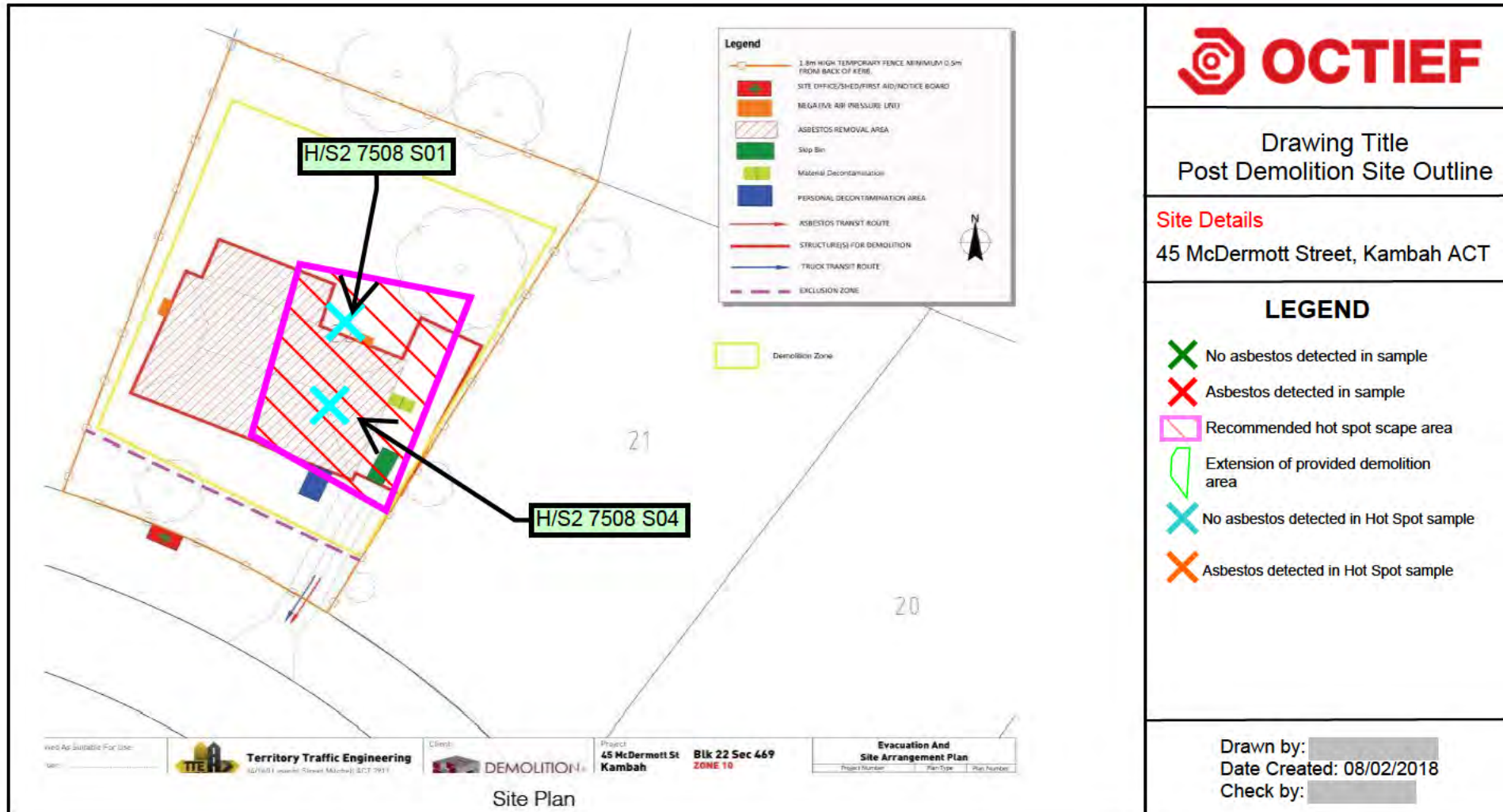


Figure 3. Final Hot spot site demolition work area and sampling plan

## Soil Sampling Methodology At Demolition Work Area

We attended the site on 24<sup>th</sup> of September 2017 after the principal contractor confirmed the completion of demolition work and site clearance by the licensed asbestos assessor.

Soil sampling was conducted in accordance with the WA Guidelines, using twice the minimum density in Appendix A of WA Guidelines. Twelve (12) samples were taken from across the footprint of the demolished dwelling, as well as waste/decontamination areas.

## Soil Validation Results

The following soil validation sample results were returned from the NATA accredited laboratory, with the laboratory certificate provided at Attachment 1.

Soil Validation Samples - 24 September 2017		
Sample No	Result/Asbestos Fibre Type	Comments/Sample Details
7508-S01	No asbestos detected Organic fibres	Sample collected from the south-eastern corner of the demolition area. No further remediation required.
7508-S02	No asbestos detected Organic fibres	Sample collected from the personal decontamination. No further remediation required.
7508-S03	No asbestos detected Organic fibres	Sample collected from the skip bin location. No further remediation required.
7508-S04	No asbestos detected Organic fibres	Sample collected from the south-eastern corner of the housing footprint. No further remediation required.
7508-S05	No asbestos detected Organic fibres	Sample collected from material decontamination area. No further remediation required.
7508-S06	<b>Asbestos detected</b> Chrysotile and organic fibres	Sample collected from the eastern negative air unit. <b>Remediation required.</b>
7508-S07	No asbestos detected Organic fibres	Sample collected from northern elevation of the demolition area. No further remediation required.
7508-S08	No asbestos detected Organic fibres	Sample collected from the north-western corner of the demolition area. No further remediation required.
7508-S09	<b>Asbestos detected</b> Chrysotile and organic fibres	Sample collected from the northern elevation of the housing footprint. <b>Remediation required.</b>
7508-S10	<b>Asbestos detected</b> Chrysotile and organic fibres	Sample collected from the western negative air unit. <b>Remediation required.</b>
7508-S11	No asbestos detected Organic fibres	Sample collected from the south-western corner of the housing footprint. No further remediation required.
7508-S12	No asbestos detected Organic fibres	Sample collected from the centre of the housing footprint. No further remediation required.

First Hot Spot Samples – 14 December 2017		
Sample No	Result/Asbestos Fibre Type	Comments/Sample Details
H/S-7508-S01	<b>Asbestos detected</b> Chrysotile, Amosite and organic fibres	Sample collected from the centre of the hot spot 7508-S06 – eastern negative air unit. <b>Remediation required.</b>
H/S-7508-S02	No asbestos detected Organic fibres	Sample collected from the centre of the hot spot 7508-S09 – northern elevation of the housing footprint. No further remediation required.
H/S-7508-S03	No asbestos detected Organic fibres	Sample collected from the centre of the hot spot 7508-S10 – western negative air unit. No further remediation required.
H/S-7508-S04	<b>Asbestos detected</b> Chrysotile organic fibres	Sample collected from the southern hot spot area. <b>Remediation required.</b>
Final Hot Spot Samples – 22 January 2018		
Sample No	Result/Asbestos Fibre Type	Comments/Sample Details
H/S2-7508-S01	No asbestos detected Organic fibres	Sample collected from the southern area of the hot spot scrape. No further remediation required.
H/S2-7508-S04	No asbestos detected Organic fibres	Sample collected from the northern area of the hot spot scrape. No further remediation required.

## Analytical Procedures

Asbestos in soil analysis was carried out in general accordance with the NEPM ASC and the 'Australian Standard for the Qualitative Identification of Asbestos in Bulk Samples' (AS4964-2004).

## Hot Spot Treatment

Three hot spots were identified in the initial soil validation. The contractor was advised to remove soil in the vicinity of the sampling point where chrysotile asbestos fibres were detected (7508-S06, 7508-S09 and 7508-S10), out to the next clean sample grid square. Octief sampled external to the first Hot spot scrape map (refer to Figure 2) due to soil disturbance in the area. Soil removed from site during 'hot spot treatments' was advised to be transported in a damp condition in a covered vehicle (to control dust) to West Belconnen Resource Management Centre for disposal. Refer to Figure 1 for sample locations and the area removed.

The 1st Hot spot samples were tested and additional chrysotile and amosite asbestos fibres were detected at H/S-7508-S01 and H/S-7508-S04. It was also noted during the inspection that visual fibre cement sheet fragments were visible on the surface of the site, particularly near the eastern boundary (colour bond fence).

An additional hot spot scrape was performed in reference to the hot spot scrape map (Refer to Figure 3), along with an emu pick for visual fibre cement sheet fragments across the entire site. Octief revisited on the 22<sup>nd</sup> of January 2018 and the final Hotspot samples were taken for testing (as shown in the diagram).


No further Asbestos Fibres were detected in the final Hotspot samples taken at H/S2-7508-S01 and H/S2-7508-S04 at 45 McDermott Street, Kambah ACT 2902.


### **Recommendation for Residential Reuse**

The asbestos in soil investigation and remediation work to address potential impact of asbestos fibres in the demolition work area of a former house affected by loose fill asbestos at 45 McDermott Street, Kambah ACT 2902 has been completed as detailed in this report, in general accordance with the NEPM ASC and the WA Guidelines. On that basis, I recommend to the Territory that the demolition work area of this property is suitable for residential reuse with respect to asbestos fibres.

### **For and on behalf of OCTIEF Pty Ltd:**



  
Australian Capital Territory

Licensed Asbestos Assessor Licence Number: 

Date: 8<sup>th</sup> of February 2018

## **Attachment 1 – Laboratory Certificate of Analysis**

## Asbestos Soil Sample Analysis Report Certificate No WA1711281459

<b>Client:</b>	Procurement and Capital Works	<b>Sampled By:</b>	
<b>Client Contact:</b>	Ben McDuff	<b># of Samples Submitted:</b>	12
<b>Telephone:</b>	02 6205 9920	<b>Sampling Date:</b>	24/11/2017
<b>Email:</b>	<a href="mailto:Ben.McDuff@act.gov.au">Ben.McDuff@act.gov.au</a>	<b>Date Received:</b>	27/11/2017
<b>Project:</b>	J7508	<b>Identification Date:</b>	28/11/2017
<b>Site Location:</b>	45 McDermott Street, Kambah ACT 2902	<b>Issue Date:</b>	28/11/2017

**Test Methodology:** OCTIEF laboratory procedures and methods used for the identification and quantification of asbestos in soils are consistent with AS4964-2004 and the requirements of the NEPM 2013 Assessment of Site Contamination, and in accordance with In-House Procedures QP-930-001 and QP-931-001.

### Acronyms

CHR	Chrysotile (white asbestos) fibres detected	ORG	Organic fibres detected
AMO	Amosite (brown / grey asbestos) fibres detected	SMF	Synthetic mineral fibres detected
CRO	Crocidolite (blue asbestos) fibres detected	UMF	Unidentified mineral fibres detected
ACM	Asbestos containing material	NAD	No Asbestos Detected
AF	Asbestos fines	FA	Fibrous asbestos

### Notes

Detection limit (AS 4964) – 0.1 g/kg. LOR for asbestos quantification for AF and FA (NEPM) is 0.001% (Non NATA)

The results contained within this report relate only to the sample(s) submitted for analysis and OCTIEF accepts no responsibility for the collection, packaging and transportation of sample submitted by external parties. Sample descriptions, sizes and weights are approximate only. NATA does not accredit sampling.

Asbestos weights and percentages are not covered under the Scope of NATA Accreditation therefore 'NATA accreditation does not cover the performance of this service'. Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present). Percentages for Asbestos content in ACM and soil density are based on the NEPM 2013 default values. All numerical results under this method are approximate and should be used as a guide only.

Trace Asbestos Detected means the results can be interpreted as containing detectable 'respirable' asbestos fibres as per AS 4964 (LOR 5 fibres).



Accredited for compliance with ISO/IEC 17025 – Testing

The results of the tests, calculations and/or measurements included in this document are traceable to Australian/National standards.

NATA accreditation number: 15172

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**Table 1 - Results of sample examination using polarised light microscopy (PLM) including Dispersion Staining**

Qualitative Results (NATA)							Quantitative Results (non NATA)					
AS 4964 – 2004 Identification of Asbestos in Bulk Samples							National Environment Protection (Assessment of Site Contamination) Measure (2013)					
Sample ID	Sample Location	Sample Description	Approx. Sample Weight (dry) (g)	Asbestos Detected	Fibre Type Detected	Trace Asbestos Detected	Approx. Sample Weight (dry) (kg)	AF / FA (2 - 7mm)		AF / FA (<2mm)		
								Weight of AF/FA (g)	AF/FA (as 100% Asbestos in AF/FA) (%)	Sub-sample Weight (g)	Weight of AF/FA (g)	AF / FA (as 100% asbestos in AF/FA) (%)
7508-S01	South-eastern corner of demolition area	Soil	822	No	NAD-ORG	No	0.822	0.000	<0.001	102.00	0.0000	<0.001
7508-S02	Personal decontamination area	Soil	763	No	NAD-ORG	No	0.763	0.000	<0.001	101.00	0.0000	<0.001
7508-S03	Skip bin location	Soil	754	No	NAD-ORG	No	0.754	0.000	<0.001	104.00	0.0000	<0.001
7508-S04	South-eastern corner of housing footprint	Soil	797	No	NAD-ORG	No	0.797	0.000	<0.001	108.00	0.0000	<0.001
7508-S05	Material decontamination area	Soil	834	No	NAD-ORG	No	0.834	0.000	<0.001	103.00	0.0000	<0.001
7508-S06	Eastern negative air unit	Soil	712	Yes	CHR-ORG	No	0.712	0.002	<0.001	100.00	0.0030	0.003
7508-S07	Northern elevation of demolition area	Soil	798	No	NAD-ORG	No	0.798	0.000	<0.001	102.00	0.0000	<0.001

**Notes**

Detection limit (AS 4964) – 0.1 g/kg. LOR for asbestos quantification for AF and FA (NEPM) is 0.001% (Non NATA)

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Trace Asbestos Detected means the results can be interpreted as containing detectable 'respirable' asbestos fibres as per AS 4964 (LOR 5 fibres).



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Qualitative Results (NATA)							Quantitative Results (non NATA)					
AS 4964 – 2004 Identification of Asbestos in Bulk Samples							National Environment Protection (Assessment of Site Contamination) Measure (2013)					
Sample ID	Sample Location	Sample Description	Approx. Sample Weight (dry) (g)	Asbestos Detected	Fibre Type Detected	Trace Asbestos Detected	Approx. Sample Weight (dry) (kg)	AF / FA (2 - 7mm)		AF / FA (<2mm)		
								Weight of AF/FA (g)	AF/FA (as 100% Asbestos in AF/FA) (%)	Sub-sample Weight (g)	Weight of AF/FA (g)	AF / FA (as 100% asbestos in AF/FA) (%)
7508-S08	North-western corner of demolition area	Soil	773	No	NAD-ORG	No	0.773	0.000	<0.001	109.00	0.0000	<0.001
7508-S09	Northern elevation of housing footprint	Soil	748	Yes	CHR-ORG	No	0.748	5.870	0.785	101.00	<0.0010	<0.001
7508-S10	Western negative air unit	Soil	811	Yes	CHR-ORG	No	0.811	0.032	0.004	102.00	0.0000	<0.001
7508-S11	South-western corner of housing footprint	Soil	728	No	NAD-ORG	No	0.728	0.000	<0.001	103.00	0.0000	<0.001
7508-S12	Centre of housing footprint	Soil	739	No	NAD-ORG	No	0.739	0.000	<0.001	101.00	0.0000	<0.001

Approved Identifier:



Report Approved By:



**Notes**

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## Asbestos Soil Sample Analysis Report Certificate No WA1712181215

<b>Client:</b>	Procurement and Capital Works	<b>Sampled By:</b>	
<b>Client Contact:</b>	Ben McDuff	<b># of Samples Submitted:</b>	4
<b>Telephone:</b>	02 6205 9920	<b>Sampling Date:</b>	14/12/2017
<b>Email:</b>	<a href="mailto:Ben.McDuff@act.gov.au">Ben.McDuff@act.gov.au</a>	<b>Date Received:</b>	14/12/2017
<b>Project:</b>	J7508	<b>Identification Date:</b>	15/12/2017
<b>Site Location:</b>	45 McDermott Street, Kambah ACT 2902	<b>Issue Date:</b>	18/12/2017

**Test Methodology:** OCTIEF laboratory procedures and methods used for the identification and quantification of asbestos in soils are consistent with AS4964-2004 and the requirements of the NEPM 2013 Assessment of Site Contamination, and in accordance with In-House Procedures QP-930-001 and QP-931-001.

### Acronyms

CHR	Chrysotile (white asbestos) fibres detected	ORG	Organic fibres detected
AMO	Amosite (brown / grey asbestos) fibres detected	SMF	Synthetic mineral fibres detected
CRO	Crocidolite (blue asbestos) fibres detected	UMF	Unidentified mineral fibres detected
ACM	Asbestos containing material	NAD	No Asbestos Detected
AF	Asbestos fines	FA	Fibrous asbestos

### Notes

Detection limit (AS 4964) – 0.1 g/kg. LOR for asbestos quantification for AF and FA (NEPM) is 0.001% (Non NATA)  
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 Asbestos weights and percentages are not covered under the Scope of NATA Accreditation therefore 'NATA accreditation does not cover the performance of this service'. Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present). Percentages for Asbestos content in ACM and soil density are based on the NEPM 2013 default values. All numerical results under this method are approximate and should be used as a guide only.  
 Trace Asbestos Detected means the results can be interpreted as containing detectable 'respirable' asbestos fibres as per AS 4964 (LOR 5 fibres).



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 NATA accreditation number: 15172  
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**Table 1 - Results of sample examination using polarised light microscopy (PLM) including Dispersion Staining**

Qualitative Results (NATA)							Quantitative Results (non NATA)					
AS 4964 – 2004 Identification of Asbestos in Bulk Samples							National Environment Protection (Assessment of Site Contamination) Measure (2013)					
Sample ID	Sample Location	Sample Description	Approx. Sample Weight (dry) (g)	Asbestos Detected	Fibre Type Detected	Trace Asbestos Detected	Approx. Sample Weight (dry) (kg)	AF / FA (2 - 7mm)		AF / FA (<2mm)		
								Weight of AF/FA (g)	AF/FA (as 100% Asbestos in AF/FA) (%)	Sub-sample Weight (g)	Weight of AF/FA (g)	AF / FA (as 100% asbestos in AF/FA) (%)
7508-H/S-S01	Centre of hot spot 7508-S06 - East negative air unit	Soil	359	Yes	CHR-ORG-AMO	No	0.359	2.027	0.565	105.00	0.1050	0.100
7508-H/S-S02	Centre of hot spot 7508-S09 - North elevation of housing footprint	Soil	488	No	NAD-ORG	No	0.488	0.000	<0.001	100.00	0.0000	<0.001
7508-H/S-S03	Centre of hot spot 7508-S10 - West negative air unit	Soil	427	No	NAD-ORG	No	0.427	0.000	<0.001	103.00	0.0000	<0.001
7508-H/S-S04	Southern hot spot area	Soil	644	Yes	CHR-ORG	No	0.644	3.269	0.508	107.00	0.0150	0.014

Approved Identifier: 

Report Approved By: 

**Notes**

Detection limit (AS 4964) – 0.1 g/kg. LOR for asbestos quantification for AF and FA (NEPM) is 0.001% (Non NATA)

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Trace Asbestos Detected means the results can be interpreted as containing detectable 'respirable' asbestos fibres as per AS 4964 (LOR 5 fibres).



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NATA accreditation number: 15172

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## Asbestos Soil Sample Analysis Report Certificate No WA1801241427

<b>Client:</b>	Procurement and Capital Works	<b>Sampled By:</b>	[REDACTED]
<b>Client Contact:</b>	Ben McDuff	<b># of Samples Submitted:</b>	2
<b>Telephone:</b>	02 6205 9920	<b>Sampling Date:</b>	23/01/2018
<b>Email:</b>	<a href="mailto:Ben.McDuff@act.gov.au">Ben.McDuff@act.gov.au</a>	<b>Date Received:</b>	24/01/2018
<b>Project:</b>	J7508	<b>Identification Date:</b>	24/01/2018
<b>Site Location:</b>	45 McDermott Street, Kambah ACT 2902	<b>Issue Date:</b>	24/01/2018

**Test Methodology:** OCTIEF laboratory procedures and methods used for the identification and quantification of asbestos in soils are consistent with AS4964-2004 and the requirements of the NEPM 2013 Assessment of Site Contamination, and in accordance with In-House Procedures QP-930-001 and QP-931-001.

### Acronyms

CHR	Chrysotile (white asbestos) fibres detected	ORG	Organic fibres detected
AMO	Amosite (brown / grey asbestos) fibres detected	SMF	Synthetic mineral fibres detected
CRO	Crocidolite (blue asbestos) fibres detected	UMF	Unidentified mineral fibres detected
ACM	Asbestos containing material	NAD	No Asbestos Detected
AF	Asbestos fines	FA	Fibrous asbestos

### Notes

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**Table 1 - Results of sample examination using polarised light microscopy (PLM) including Dispersion Staining**

Qualitative Results (NATA)							Quantitative Results (non NATA)					
AS 4964 – 2004 Identification of Asbestos in Bulk Samples							National Environment Protection (Assessment of Site Contamination) Measure (2013)					
Sample ID	Sample Location	Sample Description	Approx. Sample Weight (dry) (g)	Asbestos Detected	Fibre Type Detected	Trace Asbestos Detected	Approx. Sample Weight (dry) (kg)	AF / FA (2 - 7mm)		AF / FA (<2mm)		
								Weight of AF/FA (g)	AF/FA (as 100% Asbestos in AF/FA) (%)	Sub-sample Weight (g)	Weight of AF/FA (g)	AF / FA (as 100% asbestos in AF/FA) (%)
H/S2-S01	Southern area of hot spot scrape	Soil	730	No	NAD-ORG	No	0.73	0.000	<0.001	103.00	0.0000	<0.001
H/S2-S04	Northern area of hot spot scrape	Soil	787	No	NAD-ORG	No	0.787	0.000	<0.001	107.00	0.0000	<0.001

Approved Identifier:



Report Approved By:



**Notes**

Detection limit (AS 4964) – 0.1 g/kg. LOR for asbestos quantification for AF and FA (NEPM) is 0.001% (Non NATA)

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NATA accreditation number: 15172

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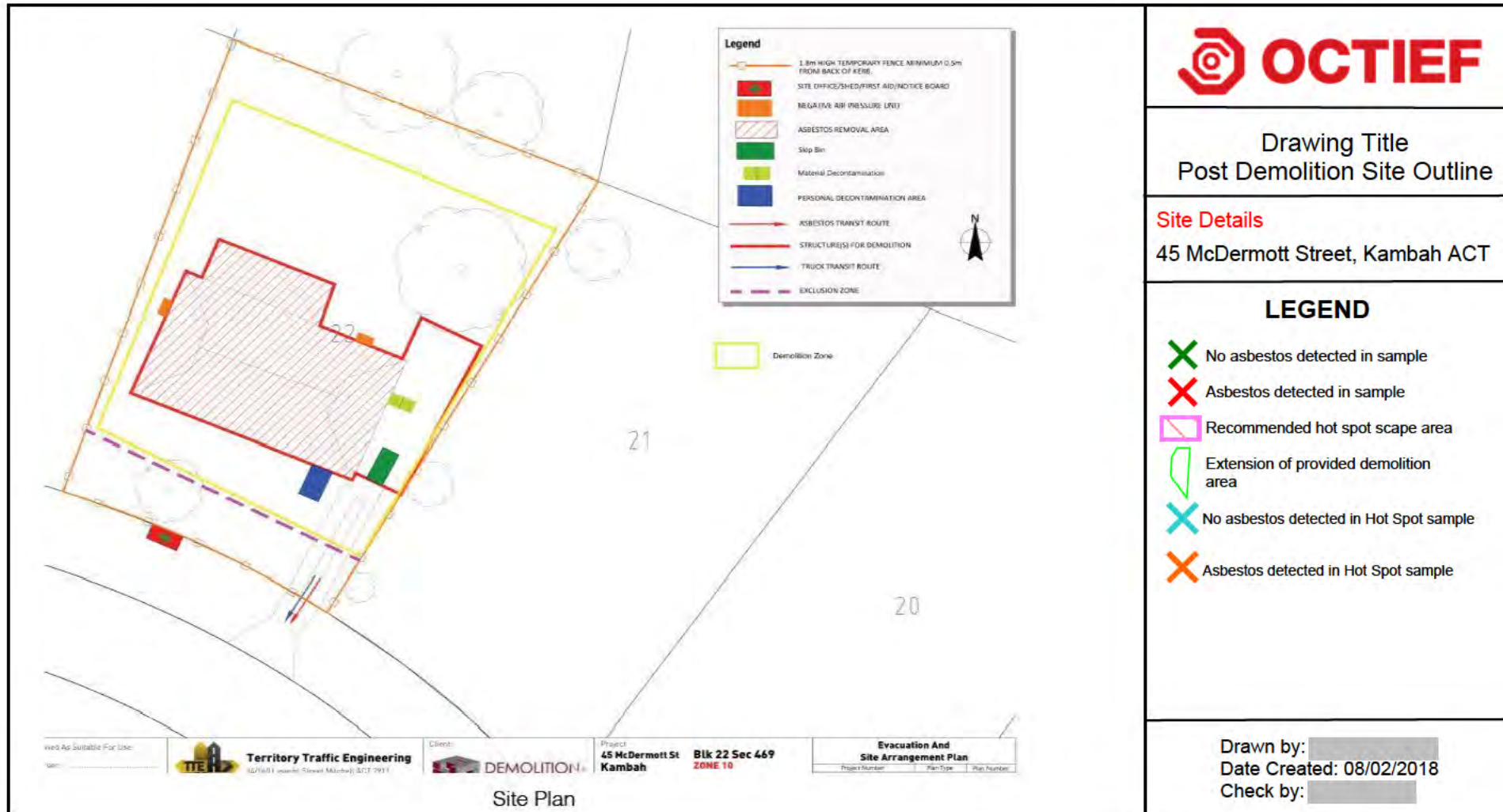


Figure 1. Site demolition work area and sampling plan

### Attachment 3 – Site Photographs



Figure 1 Site overview of demolition footprint.



Figure 2 Site overview of demolition footprint.



**Figure 3** Soil validation sample location/s (from the left) view from the south-eastern boundary to the northern boundary: S02, S10, S12, S09, S08, S04, S07, S01, S06, S05 and S03.



**Figure 4** Soil validation sample location/s (from the left) view from the south-eastern corner of the demolition area to the eastern boundary: S06, S05, S03 and S01. Note colour-bond fence to the left of the photograph.



**Figure 5 Soil validation sample location/s (from the left) view from the eastern boundary of the demolition area to the eastern boundary: S05.**



**Figure 6 Soil validation sample location/s (from the left) view from the north-western corner of the demolition area to the south-eastern boundary/demolition corner: S05, S06, S03, S04, S01, S02, S09, S12 and S11.**



Figure 7 Soil validation sample location/s (from the left) view from the south-western corner of the demolition area to the eastern boundary: S11 and S12.



Figure 8 View from the south-eastern corner of the demolition area to the northern boundary. Photograph taken after soil scrape - painted areas are visual fibre cement sheet.



Figure 9 Overview of the first Hot Spot scrape.



Figure 10 Final Hot Spot Soil validation sample location: H/S-7508-S01.



**Figure 11 Final Hot Spot Soil validation sample location/s (view from the left) view from the south-eastern corner of the demolition area to the northern boundary: H/S2-7508-S01 and H/S2-7508-S04.**

## **Attachment 4 – Clearance Certificate**

## PROJECT DETAILS

JOB NUMBER	KEF452	CLEARANCE DATE	20/11/2017
CLIENT	AGH Demolition & Asbestos Removal	REPORT DATE	20/11/2017
CONTACT NAME	[REDACTED]	CONTACT NUMBER	+ [REDACTED]
SITE ADDRESS	45 McDermott Street, Kambah, ACT 2902		
SCOPE OF WORKS	Demolition and removal of remediated loose fill insulation house and impacted soil.		
SCOPE OF CLEARANCE	A thorough visual inspection was carried out of the removal and surrounding areas		
ASBESTOS CONTRACTOR	AGH Demolition & Asbestos Removal	SUPERVISOR	[REDACTED]
ASBESTOS ASSESSOR	[REDACTED]	LICENCE NUMBER	[REDACTED]
LEGISLATION	Asbestos removal clearance certificate issued under regulations 473 & 474 of the Work Health Safety Regulation 2011		

## VISUAL CLEARANCE

	YES	NO	N/A
Did inspection of the specific work area detailed above find no visible asbestos remaining as a result of the demolition work carried out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was raking of the soil carried out within the demolition zone and no visible asbestos material as a result of the remediation work carried out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did the inspection cover the whole site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can the site be safely accessed and soil validation commence?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is a site plan attached showing the demolition zone?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have site photographs been included in this report?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## CONCLUSION

A thorough visual inspection and raking of the soil within the demolition zone was conducted and found **no visible asbestos material** from demolition work in the area or in the vicinity of the area where the work was carried out.

This area has been cleared for soil validation and the site can be handed over on successful completion of the soil validation.

**Note:** Asbestos material may be present within the soil at depth or outside the demolition zone. The site infrastructure on the block associated with the property, including the concrete paths/driveways, retaining walls, concrete slabs and subterranean pipework remain onsite. See attached site plan showing the demolition zone.

Kind Regards,

[REDACTED SIGNATURE]

**Hygienist**

PHOTOS



Driveway outside the demolition zone



Cleared area of the demolition zone



Cleared area of the demolition zone



Cleared area of the demolition zone

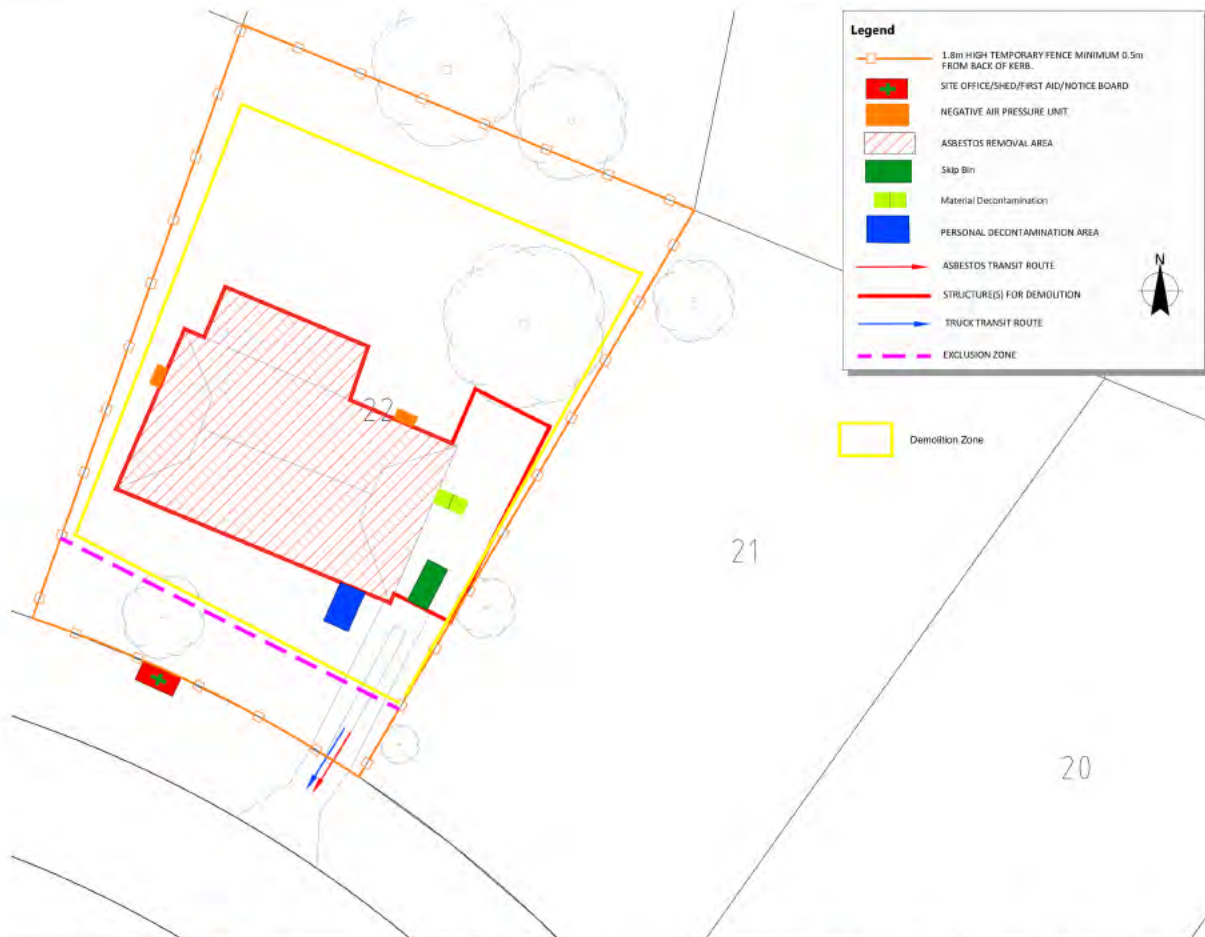


Cleared area of the demolition zone



Garden bed outside the demolition zone

SITE PLAN



<p>Used As Suitable For Use:</p> <p>SRP: _____</p>	<p><b>Territory Traffic Engineering</b> 16/160 Lyndah Street Mitchell ACT 2911</p>	<p>Client:</p>	<p>Project:</p> <p><b>45 McDermott St Kambah</b></p>	<p><b>Blk 22 Sec 469 ZONE 10</b></p>	<p><b>Evacuation And Site Arrangement Plan</b></p> <table border="1"> <tr> <td>Project Number</td> <td>Plan Type</td> <td>Plan Number</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Project Number	Plan Type	Plan Number			
Project Number	Plan Type	Plan Number									

Site Plan

## **Loose Fill Asbestos Site Soil Validation Report**

KAMBAH Block # 21, Section # 469,  
47 McDermott Street, Kambah ACT 2902

**Prepared by:** OCTIEF Pty Ltd

**For**

**ACT Asbestos Response Taskforce**

### **Introduction**

This report contains the results of an investigation and remediation of asbestos fibres in soil of the demolition work area of a property which is a registered loose fill asbestos affected property.

The Australian Capital Territory ('Territory) has acquired a number of properties affected with loose fill asbestos insulation (comprising mainly amosite and some crocidolite asbestos) and is carrying out remediation of the demolition work area of the properties to ensure that the land is suitable for future residential reuse.

We were engaged by the Territory to provide sampling to validate the remediation of asbestos fibres in soil within the demolition work area for the sole purpose of assisting the Territory with its pre-development investigations in land identified for release for future residential reuse following completion of preliminary works by others, namely:

- . demolition of the house by a principal contractor, including a scrape of affected soil;
- . clearance of the site as free of visible asbestos by a licensed asbestos assessor; and
- . definition of the demolition work area by a licensed asbestos assessor.

The demolition work area is the area to which the asbestos removal clearance certificate applies and is defined by the licensed asbestos assessor. It generally comprises the original pre-demolition structure footprint of the affected premises, the decontamination unit and asbestos waste skip handling area, and the soil disturbance work area of the demolition contractor. It excludes the remainder of the property including earthworks outside of the demolition work area where other non-affected structures have been removed or landscaping work carried out. The licensed asbestos assessor prepared a simple plan of the demolition work area for later sampling of soil by [REDACTED] (Licensed Asbestos Assessor, license no. [REDACTED]) the OCTIEF Pty Ltd soil validator.

Prior to sampling of soil in the demolition work area (refer to the methodology used for the sampling of soils described below), [REDACTED] of OCTIEF Pty Ltd met with the principal contractor [REDACTED] of AGH Demolition and Asbestos Removals who identified the extent of the demolition work area (as defined by the licensed asbestos assessor). The confirmed demolition work area for soil sampling is illustrated in Attachment 2.

The scope of work was performed solely for the Territory and specifically targeted loose fill asbestos insulation (comprising mainly amosite and some crocidolite fibres). Any other forms of contaminants on site (e.g. lead, bonded asbestos) were not assessed. This report (including the conclusions and recommendations it contains) is prepared solely for use by the Territory and may not be used or relied upon by any other party. Any other party must make its own inquiries and obtain independent advice.

We have assumed the accuracy and completeness of all information provided to it by the principal contractor and licensed asbestos assessor, and the integrity of the clearance certificate provided as Attachment 4.

The asbestos fibre in soil investigation was done in accordance with the Asbestos Response Taskforce Information sheet - Soil Validation Process (dated 10 November 2015), and with general accordance with the ACT Government-endorsed *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)* (the NEPM ASC) and the 'Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia (May 2009)' (the WA Guidelines).

The investigation was undertaken after all visible loose fill asbestos and any other visible asbestos containing materials had been removed from the demolition work area, including a scrape of affected soil from the demolition work area, and a post demolition asbestos removal clearance certificate was issued by licensed asbestos assessor [REDACTED] of JMB Environmental Consulting Pty Ltd ([REDACTED]).

### **Site Identification and Soil Condition of Demolition Work Area**

Soil sampling was conducted at the demolished dwelling located at 45 McDermott Street, Kambah ACT 2902. At the time of inspection, some foliage was present around road entrance, eastern, western and northern boundaries. The approximate size of the block and demolition work area was 752m<sup>2</sup> and 518m<sup>2</sup> respectively. This property is adjacent to 47 McDermott Street, Kambah ACT and separated by a colour bond fence towards the western boundary.

Prior to soil sampling, the soil at the site demolition work area was noted to be silt and clay. The soil was moist during sampling.

### **Site Demolition Work Area and Sampling Plan**

An initial site walkover was conducted to confirm the area outlined in the demolition work area, provided by the licenced assessor, was sufficient to contain all soil validation sampling points required. The provided demolition work area sufficiently incorporated the demolition disturbance area, the house foot print, decontamination areas and areas accessed with machinery and equipment. No additional areas appeared to be disturbed at the time inspection.

Soil validation sampling points in relation to the demolition work area are provided below in Figure 1.

Hot Spot soil validation sampling points in relation to the demolition work area are provided below in Figure 2.

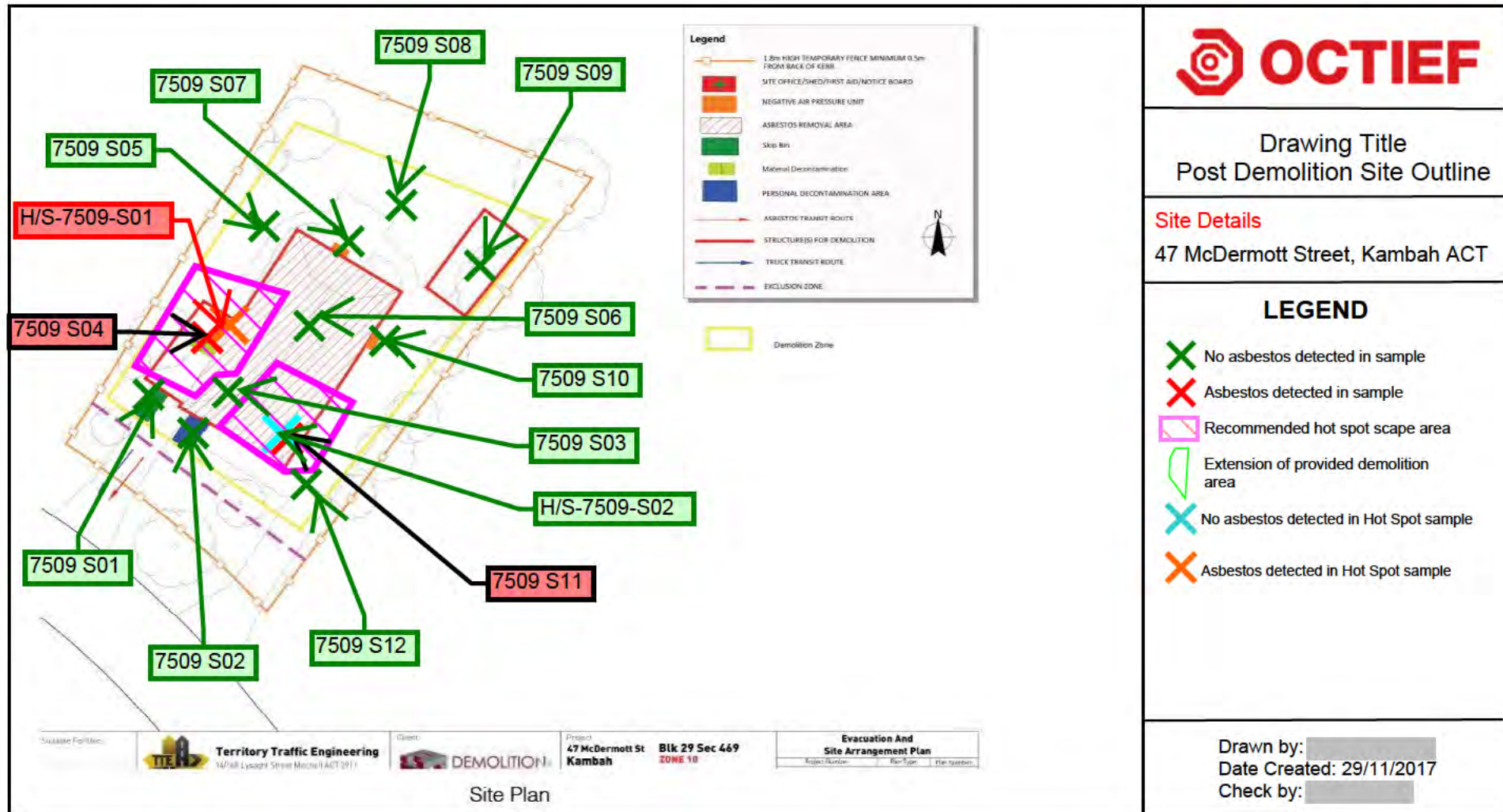


Figure 1. Site demolition work area and sampling plan

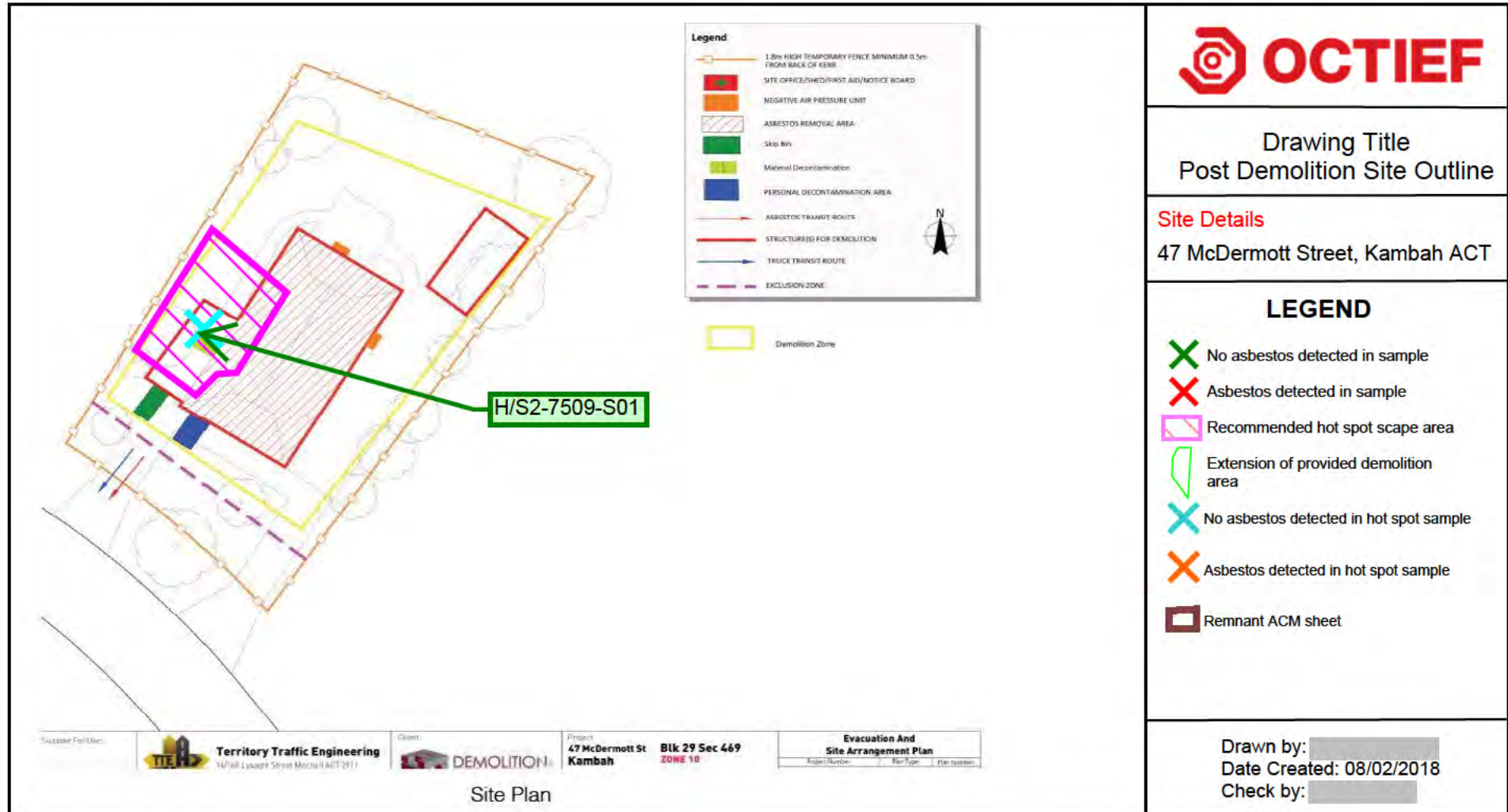


Figure 2. Final Hot Spot Site demolition work area and sampling plan

## Soil Sampling Methodology At Demolition Work Area

We attended the site on 24<sup>th</sup> of September 2017 after the principal contractor confirmed the completion of demolition work and site clearance by the licensed asbestos assessor.

Soil sampling was conducted in accordance with the WA Guidelines, using twice the minimum density in Appendix A of WA Guidelines. Twelve (12) samples were taken from across the footprint of the demolished dwelling, as well as waste/decontamination areas.

## Soil Validation Results

The following soil validation sample results were returned from the NATA accredited laboratory, with the laboratory certificate provided at Attachment 1.

Original samples – 24/11/2017		
Sample No	Result/Asbestos Fibre Type	Comments/Sample Details
7509-S01	No asbestos detected Organic fibres	Sample collected from the skip bin location. No further remediation required.
7509-S02	No asbestos detected Organic fibres	Sample collected from the personal decontamination area. No further remediation required.
7509-S03	No asbestos detected Organic fibres	Sample collected from the south-western corner of the housing footprint. No further remediation required.
7509-S04	<b>Asbestos detected</b> Chrysotile and organic fibres	Sample collected from the material decontamination area. <b>Remediation required.</b>
7509-S05	No asbestos detected Organic fibres	Sample collected from the north-western corner of the demolition area. No further remediation required.
7509-S06	No asbestos detected Organic fibres	Sample collected from the centre of the housing footprint. No further remediation required.
7509-S07	No asbestos detected Organic fibres	Sample collected from the northern negative air unit. No further remediation required.
7509-S08	No asbestos detected Organic fibres	Sample collected from the northern elevation of the demolition area. No further remediation required.
7509-S09	No asbestos detected Organic fibres	Sample collected from the north-eastern corner of the housing footprint. No further remediation required.
7509-S10	No asbestos detected Organic fibres	Sample collected from the southern negative air unit. No further remediation required.
7509-S11	<b>Asbestos detected</b> Chrysotile and organic fibres	Sample collected from the south-eastern corner of the housing footprint. <b>Remediation required.</b>
7509-S12	No asbestos detected Organic fibres	Sample collected from the south-eastern corner of the demolition area. No further remediation required.

First Hot Spot Samples – 14/12/2017		
Sample No	Result/Asbestos Fibre Type	Comments/Sample Details
H/S-7509-S01	<b>Asbestos detected</b> Chrysotile and Organic fibres	Sample collected from the Centre of the hot spot 7509-S04 – Material decontamination area. <b>Remediation required.</b>
H/S-7509-S02	No asbestos detected Organic fibres	Sample collected from the centre of the hot spot 7509-S11 – South-eastern corner of the housing footprint. No further remediation required.
Final Hot Spot Samples – 23/01/2018		
Sample No	Result/Asbestos Fibre Type	Comments/Sample Details
H/S2-7509-S01	No asbestos detected Organic Fibres	Sample collected from the centre of the hot spot area. No further remediation required.

## Analytical Procedures

Asbestos in soil analysis was carried out in general accordance with the NEPM ASC and the 'Australian Standard for the Qualitative Identification of Asbestos in Bulk Samples' (AS4964-2004).

## Hot Spot Treatment

Two isolated hot spot were identified in the initial soil validation. The contractor was advised to remove soil in the vicinity of the sampling point where chrysotile asbestos fibres were detected (7509-S04 and 7509-S11), out to the next clean sample grid square. Soil removed from site during 'hot spot treatments' was advised to be transported in a damp condition in a covered vehicle (to control dust) to West Belconnen Resource Management Centre for disposal. Refer to Figure 1 for sample locations and the area removed.

Following confirmation that the contractor had completed the required hot spot soil scrape; Octief revisited on the 14<sup>th</sup> of December 2017 and collected two hot spot/s soil validation samples from the treated area (Refer to Figure 1).

The 1st Hot spots samples were tested and additional chrysotile asbestos fibres were detected at H/S-7509-S01. Octief revisited on the 23<sup>rd</sup> of January 2018 and the final Hot spot samples were taken for testing (as shown in the diagram).



No further Asbestos Fibres were detected in the final Hot spot samples taken at H/S2-7509-S01.

### **Recommendation for Residential Reuse**

The asbestos in soil investigation and remediation work to address potential impact of asbestos fibres in the demolition work area of a former house affected by loose fill asbestos at 47 McDermott Street, Kambah ACT 2902 has been completed as detailed in this report, in general accordance with the NEPM ASC and the WA Guidelines. On that basis, I recommend to the Territory that the demolition work area of this property is suitable for residential reuse with respect to asbestos fibres.

#### **For and on behalf of OCTIEF Pty Ltd:**



  
Australian Capital Territory  
Licensed Asbestos Assessor Licence Number:   
Date: 8<sup>th</sup> of February 2018

## **Attachment 1 – Laboratory Certificate of Analysis**

## Asbestos Soil Sample Analysis Report Certificate No WA1711281428

<b>Client:</b>	Procurement and Capital Works	<b>Sampled By:</b>	
<b>Client Contact:</b>	Ben McDuff	<b># of Samples Submitted:</b>	12
<b>Telephone:</b>	02 6205 9920	<b>Sampling Date:</b>	24/11/2017
<b>Email:</b>	<a href="mailto:Ben.McDuff@act.gov.au">Ben.McDuff@act.gov.au</a>	<b>Date Received:</b>	27/11/2017
<b>Project:</b>	J7509	<b>Identification Date:</b>	28/11/2017
<b>Site Location:</b>	47 McDermott Street, Kambah ACT 2902	<b>Issue Date:</b>	28/11/2017

**Test Methodology:** OCTIEF laboratory procedures and methods used for the identification and quantification of asbestos in soils are consistent with AS4964-2004 and the requirements of the NEPM 2013 Assessment of Site Contamination, and in accordance with In-House Procedures QP-930-001 and QP-931-001.

### Acronyms

CHR	Chrysotile (white asbestos) fibres detected	ORG	Organic fibres detected
AMO	Amosite (brown / grey asbestos) fibres detected	SMF	Synthetic mineral fibres detected
CRO	Crocidolite (blue asbestos) fibres detected	UMF	Unidentified mineral fibres detected
ACM	Asbestos containing material	NAD	No Asbestos Detected
AF	Asbestos fines	FA	Fibrous asbestos

### Notes

Detection limit (AS 4964) – 0.1 g/kg. LOR for asbestos quantification for AF and FA (NEPM) is 0.001% (Non NATA)

The results contained within this report relate only to the sample(s) submitted for analysis and OCTIEF accepts no responsibility for the collection, packaging and transportation of sample submitted by external parties. Sample descriptions, sizes and weights are approximate only. NATA does not accredit sampling.

Asbestos weights and percentages are not covered under the Scope of NATA Accreditation therefore 'NATA accreditation does not cover the performance of this service'. Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present). Percentages for Asbestos content in ACM and soil density are based on the NEPM 2013 default values. All numerical results under this method are approximate and should be used as a guide only.

Trace Asbestos Detected means the results can be interpreted as containing detectable 'respirable' asbestos fibres as per AS 4964 (LOR 5 fibres).



Accredited for compliance with ISO/IEC 17025 – Testing

The results of the tests, calculations and/or measurements included in this document are traceable to Australian/National standards.

NATA accreditation number: 15172

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**Table 1 - Results of sample examination using polarised light microscopy (PLM) including Dispersion Staining**

Qualitative Results (NATA)							Quantitative Results (non NATA)					
AS 4964 – 2004 Identification of Asbestos in Bulk Samples							National Environment Protection (Assessment of Site Contamination) Measure (2013)					
Sample ID	Sample Location	Sample Description	Approx. Sample Weight (dry) (g)	Asbestos Detected	Fibre Type Detected	Trace Asbestos Detected	Approx. Sample Weight (dry) (kg)	AF / FA (2 - 7mm)		AF / FA (<2mm)		
								Weight of AF/FA (g)	AF/FA (as 100% Asbestos in AF/FA) (%)	Sub-sample Weight (g)	Weight of AF/FA (g)	AF / FA (as 100% asbestos in AF/FA) (%)
7509-S01	Skip bin location	Soil	853	No	NAD-ORG	No	0.853	0.000	<0.001	100.00	0.0000	<0.001
7509-S02	Personal decontamination area	Soil	753	No	NAD-ORG	No	0.753	0.000	<0.001	109.00	0.0000	<0.001
7509-S03	South-western corner of housing footprint	Soil	752	No	NAD-ORG	No	0.752	0.000	<0.001	100.00	0.0000	<0.001
7509-S04	Material decontamination area	Soil	834	Yes	CHR-ORG	No	0.834	0.561	0.067	102.00	0.0120	0.012
7509-S05	North-western corner of demolition area	Soil	731	No	NAD-ORG	No	0.731	0.000	<0.001	100.00	0.0000	<0.001
7509-S06	Centre of housing footprint	Soil	823	No	NAD-ORG	No	0.823	0.000	<0.001	105.00	0.0000	<0.001
7509-S07	Northern negative air unit	Soil	723	No	NAD-ORG	No	0.723	0.000	<0.001	103.00	0.0000	<0.001

**Notes**

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Trace Asbestos Detected means the results can be interpreted as containing detectable 'respirable' asbestos fibres as per AS 4964 (LOR 5 fibres).



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Qualitative Results (NATA)							Quantitative Results (non NATA)					
AS 4964 – 2004 Identification of Asbestos in Bulk Samples							National Environment Protection (Assessment of Site Contamination) Measure (2013)					
Sample ID	Sample Location	Sample Description	Approx. Sample Weight (dry) (g)	Asbestos Detected	Fibre Type Detected	Trace Asbestos Detected	Approx. Sample Weight (dry) (kg)	AF / FA (2 - 7mm)		AF / FA (<2mm)		
								Weight of AF/FA (g)	AF/FA (as 100% Asbestos in AF/FA) (%)	Sub-sample Weight (g)	Weight of AF/FA (g)	AF / FA (as 100% asbestos in AF/FA) (%)
7509-S08	Northern elevation of demolition area	Soil	828	No	NAD-ORG	No	0.828	0.000	<0.001	103.00	0.0000	<0.001
7509-S09	North-eastern corner of housing footprint	Soil	855	No	NAD-ORG	No	0.855	0.000	<0.001	101.00	0.0000	<0.001
7509-S10	Southern negative air unit	Soil	796	No	NAD-ORG	No	0.796	0.000	<0.001	105.00	0.0000	<0.001
7509-S11	South-eastern corner of housing footprint	Soil	736	Yes	CHR-ORG	No	0.736	13.644	1.854	103.00	<0.0010	<0.001
7509-S12	South-eastern corner of demolition area	Soil	774	No	NAD-ORG	No	0.774	0.000	<0.001	105.00	0.0000	<0.001

Approved Identifier:



Report Approved By:



**Notes**

Detection limit (AS 4964) – 0.1 g/kg. LOR for asbestos quantification for AF and FA (NEPM) is 0.001% (Non NATA)

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NATA accreditation number: 15172

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## Asbestos Soil Sample Analysis Report Certificate No WA1712181136

<b>Client:</b>	Procurement and Capital Works	<b>Sampled By:</b>	
<b>Client Contact:</b>	Ben McDuff	<b># of Samples Submitted:</b>	2
<b>Telephone:</b>	02 6205 9920	<b>Sampling Date:</b>	14/12/2017
<b>Email:</b>	<a href="mailto:Ben.McDuff@act.gov.au">Ben.McDuff@act.gov.au</a>	<b>Date Received:</b>	14/12/2017
<b>Project:</b>	J7509	<b>Identification Date:</b>	18/12/2017
<b>Site Location:</b>	47 McDermott Street, Kambah ACT 2902	<b>Issue Date:</b>	18/12/2017

**Test Methodology:** OCTIEF laboratory procedures and methods used for the identification and quantification of asbestos in soils are consistent with AS4964-2004 and the requirements of the NEPM 2013 Assessment of Site Contamination, and in accordance with In-House Procedures QP-930-001 and QP-931-001.

### Acronyms

CHR	Chrysotile (white asbestos) fibres detected	ORG	Organic fibres detected
AMO	Amosite (brown / grey asbestos) fibres detected	SMF	Synthetic mineral fibres detected
CRO	Crocidolite (blue asbestos) fibres detected	UMF	Unidentified mineral fibres detected
ACM	Asbestos containing material	NAD	No Asbestos Detected
AF	Asbestos fines	FA	Fibrous asbestos

### Notes

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Asbestos weights and percentages are not covered under the Scope of NATA Accreditation therefore 'NATA accreditation does not cover the performance of this service'. Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present). Percentages for Asbestos content in ACM and soil density are based on the NEPM 2013 default values. All numerical results under this method are approximate and should be used as a guide only.

Trace Asbestos Detected means the results can be interpreted as containing detectable 'respirable' asbestos fibres as per AS 4964 (LOR 5 fibres).



Accredited for compliance with ISO/IEC 17025 – Testing

The results of the tests, calculations and/or measurements included in this document are traceable to Australian/National standards.

NATA accreditation number: 15172

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**Table 1 - Results of sample examination using polarised light microscopy (PLM) including Dispersion Staining**

Qualitative Results (NATA)							Quantitative Results (non NATA)					
AS 4964 – 2004 Identification of Asbestos in Bulk Samples							National Environment Protection (Assessment of Site Contamination) Measure (2013)					
Sample ID	Sample Location	Sample Description	Approx. Sample Weight (dry) (g)	Asbestos Detected	Fibre Type Detected	Trace Asbestos Detected	Approx. Sample Weight (dry) (kg)	AF / FA (2 - 7mm)		AF / FA (<2mm)		
								Weight of AF/FA (g)	AF/FA (as 100% Asbestos in AF/FA) (%)	Sub-sample Weight (g)	Weight of AF/FA (g)	AF / FA (as 100% asbestos in AF/FA) (%)
7509-H/S-S01	Centre of hot spot 7509-S04 - Material decontamination area	Soil	572	Yes	CHR-ORG	No	0.572	0.195	0.034	101.00	0.0130	0.013
7509-H/S-S02	Centre of hot spot 7509-S11 - South-east corner of housing footprint	Soil	550	No	NAD-ORG	No	0.55	0.000	<0.001	101.00	0.0000	<0.001

Approved Identifier:



Report Approved By:



**Notes**

Detection limit (AS 4964) – 0.1 g/kg. LOR for asbestos quantification for AF and FA (NEPM) is 0.001% (Non NATA)  
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 Trace Asbestos Detected means the results can be interpreted as containing detectable 'respirable' asbestos fibres as per AS 4964 (LOR 5 fibres).



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 NATA accreditation number: 15172  
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## Asbestos Soil Sample Analysis Report Certificate No WA1801241435

<b>Client:</b>	Procurement and Capital Works	<b>Sampled By:</b>	[REDACTED]
<b>Client Contact:</b>	Ben McDuff	<b># of Samples Submitted:</b>	1
<b>Telephone:</b>	02 6205 9920	<b>Sampling Date:</b>	23/01/2018
<b>Email:</b>	<a href="mailto:Ben.McDuff@act.gov.au">Ben.McDuff@act.gov.au</a>	<b>Date Received:</b>	24/01/2018
<b>Project:</b>	J7509	<b>Identification Date:</b>	24/01/2018
<b>Site Location:</b>	47 McDermott Street, Kambah ACT 2902	<b>Issue Date:</b>	24/01/2018

**Test Methodology:** OCTIEF laboratory procedures and methods used for the identification and quantification of asbestos in soils are consistent with AS4964-2004 and the requirements of the NEPM 2013 Assessment of Site Contamination, and in accordance with In-House Procedures QP-930-001 and QP-931-001.

### Acronyms

CHR	Chrysotile (white asbestos) fibres detected	ORG	Organic fibres detected
AMO	Amosite (brown / grey asbestos) fibres detected	SMF	Synthetic mineral fibres detected
CRO	Crocidolite (blue asbestos) fibres detected	UMF	Unidentified mineral fibres detected
ACM	Asbestos containing material	NAD	No Asbestos Detected
AF	Asbestos fines	FA	Fibrous asbestos

### Notes

Detection limit (AS 4964) – 0.1 g/kg. LOR for asbestos quantification for AF and FA (NEPM) is 0.001% (Non NATA)  
 The results contained within this report relate only to the sample(s) submitted for analysis and OCTIEF accepts no responsibility for the collection, packaging and transportation of sample submitted by external parties. Sample descriptions, sizes and weights are approximate only. NATA does not accredit sampling.  
 Asbestos weights and percentages are not covered under the Scope of NATA Accreditation therefore 'NATA accreditation does not cover the performance of this service'. Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present). Percentages for Asbestos content in ACM and soil density are based on the NEPM 2013 default values. All numerical results under this method are approximate and should be used as a guide only.  
 Trace Asbestos Detected means the results can be interpreted as containing detectable 'respirable' asbestos fibres as per AS 4964 (LOR 5 fibres).

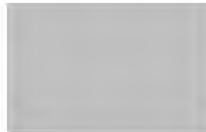


Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calculations and/or measurements included in this document are traceable to Australian/National standards.  
 NATA accreditation number: 15172  
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**Table 1 - Results of sample examination using polarised light microscopy (PLM) including Dispersion Staining**

Qualitative Results (NATA)							Quantitative Results (non NATA)					
AS 4964 – 2004 Identification of Asbestos in Bulk Samples							National Environment Protection (Assessment of Site Contamination) Measure (2013)					
Sample ID	Sample Location	Sample Description	Approx. Sample Weight (dry) (g)	Asbestos Detected	Fibre Type Detected	Trace Asbestos Detected	Approx. Sample Weight (dry) (kg)	AF / FA (2 - 7mm)		AF / FA (<2mm)		
								Weight of AF/FA (g)	AF/FA (as 100% Asbestos in AF/FA) (%)	Sub-sample Weight (g)	Weight of AF/FA (g)	AF / FA (as 100% asbestos in AF/FA) (%)
H/S-S01	Centre of hot spot area	Soil	659	No	NAD-ORG	No	0.659	0.000	<0.001	101.00	0.0000	<0.001

Approved Identifier:



Report Approved By:



**Notes**

Detection limit (AS 4964) – 0.1 g/kg. LOR for asbestos quantification for AF and FA (NEPM) is 0.001% (Non NATA)

The results contained within this report relate only to the sample(s) submitted for analysis and OCTIEF accepts no responsibility for the collection, packaging and transportation of sample submitted by external parties. Sample descriptions, sizes and weights are approximate only. NATA does not accredit sampling.

Asbestos weights and percentages are not covered under the Scope of NATA Accreditation therefore 'NATA accreditation does not cover the performance of this service'. Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present). Percentages for Asbestos content in ACM and soil density are based on the NEPM 2013 default values. All numerical results under this method are approximate and should be used as a guide only.

Trace Asbestos Detected means the results can be interpreted as containing detectable 'respirable' asbestos fibres as per AS 4964 (LOR 5 fibres).



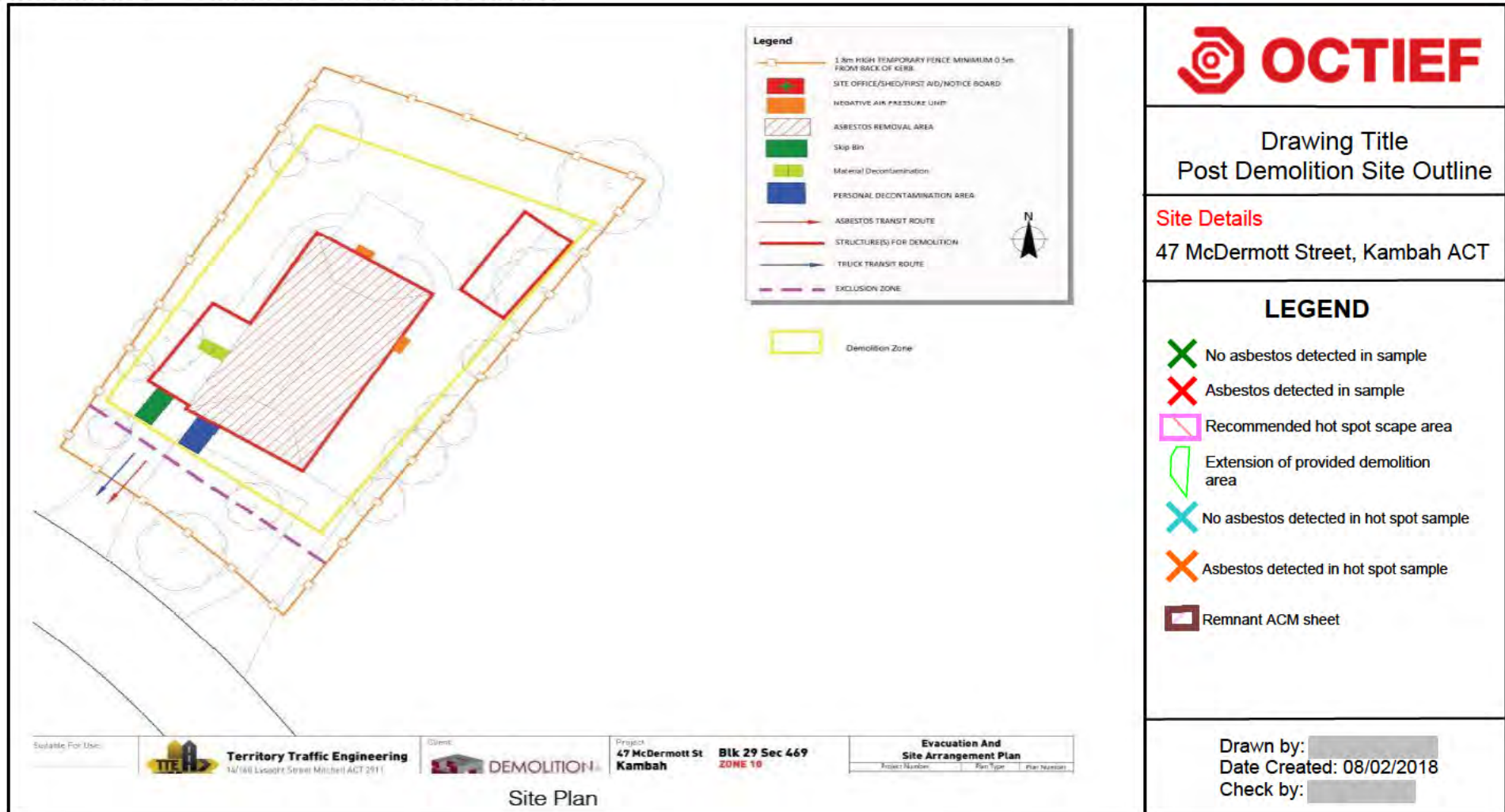
Accredited for compliance with ISO/IEC 17025 – Testing

The results of the tests, calculations and/or measurements included in this document are traceable to Australian/National standards.

NATA accreditation number: 15172

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### Attachment 2 – Confirmed Demolition Work Area



### Attachment 3 – Site Photographs



Figure 1 Site overview of demolition footprint.



Figure 2 Site overview of demolition footprint.



Figure 3 Soil validation sample location/s (from the left) view from the southern elevation of the demolition area to the eastern boundary: S11, S02 and S12.



Figure 4 Soil validation sample location/s (from the left) view from the western elevation of the demolition area to the northern boundary: S04, S05, S06, S07 and S09.



**Figure 5 Soil validation sample location/s (from the left) view from the southern centre of the housing footprint to the southern boundary: S12, S11, S06, S02 and S03.**



**Figure 6 Soil validation sample location/s (from the left) view from the north-eastern corner of the demolition area to the southern boundary/demolition corner: S12, S10, S11, S02, S09, S06, S01, S04 and S05.**



Figure 7 Soil validation sample location/s (from the left) view from the southern corner of the housing footprint to the western boundary: S01, S02, S12, S03, S04 and S11. Note remaining colour bond fence separating 45 and 46 McDermott Street, Kambah.



Figure 8 First Hot Spot Soil validation sample location (14/12/2017): H/S-7508-S01.



Figure 9 First Hot Spot Soil validation sample location (14/12/2017): H/S-7508-S02.



Figure 10 Final Hot Spot Soil validation sample location (22/01/2018): H/S2-7508-S01.

#### **Attachment 4 – Clearance Certificate**

## PROJECT DETAILS

JOB NUMBER	KEF451	CLEARANCE DATE	20/11/2017
CLIENT	AGH Demolition & Asbestos Removal	REPORT DATE	20/11/2017
CONTACT NAME	[REDACTED]	CONTACT NUMBER	[REDACTED]
SITE ADDRESS	47 McDermott Street, Kambah, ACT 2902		
SCOPE OF WORKS	Demolition and removal of remediated loose fill insulation house and impacted soil.		
SCOPE OF CLEARANCE	A thorough visual inspection was carried out of the removal and surrounding areas		
ASBESTOS CONTRACTOR	AGH Demolition & Asbestos Removal	SUPERVISOR	[REDACTED]
ASBESTOS ASSESSOR	[REDACTED]	LICENCE NUMBER	[REDACTED]
LEGISLATION	Asbestos removal clearance certificate issued under regulations 473 & 474 of the Work Health Safety Regulation 2011		

## VISUAL CLEARANCE

	YES	NO	N/A
Did inspection of the specific work area detailed above find no visible asbestos remaining as a result of the demolition work carried out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was raking of the soil carried out within the demolition zone and no visible asbestos material as a result of the remediation work carried out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did the inspection cover the whole site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can the site be safely accessed and soil validation commence?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is a site plan attached showing the demolition zone?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have site photographs been included in this report?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## CONCLUSION

A thorough visual inspection and raking of the soil within the demolition zone was conducted and found **no visible asbestos material** from demolition work in the area or in the vicinity of the area where the work was carried out.

This area has been cleared for soil validation and the site can be handed over on successful completion of the soil validation.

**Note:** Asbestos material may be present within the soil at depth or outside the demolition zone. The site infrastructure on the block associated with the property, including the concrete paths/driveways, retaining walls, concrete slabs and subterranean pipework remain onsite. See attached site plan showing the demolition zone.

Kind Regards,

[REDACTED]

**Hygienist**

PHOTOS



Driveway outside the demolition zone



Cleared area of the demolition zone



Cleared area of the demolition zone



Cleared area of the demolition zone



Cleared area of the demolition zone






Garden bed outside the demolition zone

SITE PLAN



**Legend**

-  1.8m HIGH TEMPORARY FENCE MINIMUM 0.5m FROM BACK OF KERB.
-  SITE OFFICE/SHED/FIRST AID/NOTICE BOARD
-  NEGATIVE AIR PRESSURE UNIT
-  ASBESTOS REMOVAL AREA
-  Skip Bin
-  Material Decontamination
-  PERSONAL DECONTAMINATION AREA
-  ASBESTOS TRANSIT ROUTE
-  STRUCTURE(S) FOR DEMOLITION
-  TRUCK TRANSIT ROUTE
-  EXCLUSION ZONE



 Demolition Zone

Suitable For Use:



**Territory Traffic Engineering**  
14/160 Lysaght Street Mitchell ACT 2911

Client:



Project  
**47 McDermott St  
Kambah** **Blk 29 Sec 469  
ZONE 10**

Evacuation And Site Arrangement Plan		
Project Number	Plan Type	Plan Number

Site Plan



## **Loose Fill Asbestos Site Soil Validation Report**

**Block 5, Section 49, Fisher**

**12 Hamersley Pl, Fisher**

**Prepared by: Lancaster & Dickenson Consulting Pty Ltd**

**For**

**ACT Asbestos Response Taskforce**

### **Introduction**

This report contains the results of an investigation and remediation of asbestos fibres in soil of the demolition work area of a property which is a registered loose fill asbestos affected property.

The Australian Capital Territory (Territory) has acquired a number of properties affected with loose fill asbestos insulation (comprising mainly amosite and some crocidolite asbestos) and is carrying out remediation of the demolition work area of the properties to ensure that the land is suitable for future residential reuse.

Lancaster & Dickenson Consulting (L & D) were engaged by the Territory to provide sampling to validate the remediation of asbestos fibres in soil within the demolition work area for the sole purpose of assisting the Territory with its pre-development investigations in land identified for release for future residential reuse following completion of preliminary works by others, namely:

- demolition of the house by a principal contractor, including a scrape of affected soil;
- clearance of the site as free of visible asbestos by a licensed asbestos assessor; and
- definition of the demolition work area by a licensed asbestos assessor.

The demolition work area is the area to which the asbestos removal clearance certificate applies and is defined by the licensed asbestos assessor. It generally comprises the original pre-demolition structure footprint of the affected premises, the decontamination unit and asbestos waste skip handling area, and the soil disturbance work area of the demolition contractor. It excludes the remainder of the property including earthworks outside of the demolition work area where other non-affected structures have been removed or landscaping work carried out. The licensed asbestos assessor prepared a simple plan of the demolition work area for later sampling of soil by the L&D soil validator.

Prior to sampling of soil in the demolition work area (refer to the methodology used for the sampling of soils described below), [REDACTED] of L&D met on the site with a representative of the principal contractor (Caylamax), who identified the extent of the demolition work area (as defined by the licensed asbestos assessor). The confirmed demolition work area for soil sampling is illustrated in Attachment A.

The scope of work was performed solely for the Territory and specifically targeted loose fill asbestos insulation (comprising mainly amosite and some crocidolite fibres). Any other forms of contaminants on site (e.g. lead, non-friable asbestos) were not assessed. This report (including the conclusions and recommendations it contains) is prepared solely for use by the Territory and may not be used or relied upon by any other party. Any other party must make its own inquiries and obtain independent advice.

We have assumed the accuracy and completeness of all information provided to it by the principal contractor and licensed asbestos assessor, and the integrity of the clearance certificate provided as Attachment D.

The asbestos fibre in soil investigation was done in accordance with the Asbestos Response Taskforce Information sheet - Soil Validation Process (dated 10 November 2015), the ACT Government-endorsed *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)* (the NEPM ASC) and the 'Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia (May 2009)' (the WA Guidelines).

The investigation was undertaken after all visible loose fill asbestos and any other visible asbestos containing materials had been removed from the demolition work area, including a scrape of affected soil from the demolition work area, and a post demolition asbestos removal clearance certificate was issued by licensed asbestos assessor [REDACTED] of JMB Environmental Consulting (Licence number [REDACTED]).

### Site Identification and Soil Condition of Demolition Work Area

<b>Block and Section:</b>	Block 5, Section 49, Fisher
<b>Block Size:</b>	1216 m <sup>2</sup>
<b>Size of Demolition Area:</b>	Approx.694 m <sup>2</sup>
<b>Remaining Site Structures:</b>	-
<b>Soil Conditions</b>	The soil was moist at the time of sampling

### Site Demolition Work Area and Sampling Plan

A plan showing the demolition works area and sample locations is presented in Attachment A.

### Soil Sampling Methodology At Demolition Work Area

[REDACTED] of L&D Consulting (ACT Asbestos Assessors Licence no. [REDACTED]) attended the site on Monday, 17 July 2017 after the principal contractor confirmed the completion of demolition work and site clearance by the licensed asbestos assessor.

The sampling density required to assess the soil within the demolition area was based on the WA DOH (2009) 'Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia' (WA Guideline). This guideline has been endorsed by the ACT environment and Sustainable Development Directorate (ESDD) for use on site within the ACT.

When determining the sample density required for the demolition area, reference is made to Table 1 of the WA Guideline. It is considered that the likelihood of asbestos being present within the demolition area as 'likely'. Therefore the sample density recommended in Attachment A of the

WA Guideline was applied. For the demolition area which was estimated to be between than 500 m<sup>2</sup> and 1,000 m<sup>2</sup> at least twelve (12) sampling points were required.

Representative samples were collected by hand using a clean stainless steel shovel at locations set out using a systematic grid pattern. Samples were collected in general accordance with the procedures outlined in Section 4.1 of the WA Guideline.

The sampling methodology detailed in the WA Guideline was considered appropriate as the purpose of the sampling was to assess for the presence of asbestos fibres within the demolition area.

### Soil Validation Results

The following soil validation sample results were returned from the NATA accredited laboratory, with the laboratory certificate provided at Attachment B.

Sample No.	Asbestos Fibre Content	Comments
1	No asbestos detected	-
2	No asbestos detected	-
3	No asbestos detected	-
4	No asbestos detected	-
5	No asbestos detected	-
6	No asbestos detected	-
7	No asbestos detected	-
8	No asbestos detected	-
9	No asbestos detected	-
10	No asbestos detected	-
11	No asbestos detected	-
12	No asbestos detected	-

### Analytical Procedures

Asbestos in soil analysis was carried out in accordance with the WA Guidelines and the 'Australian Standard for the Qualitative Identification of Asbestos in Bulk Samples' (AS4964-2004).

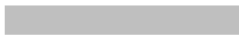
### Hot Spot Treatment


No hotspot treatment was required.

## Recommendation for Residential Reuse

The asbestos in soil investigation and remediation work to address potential impact of asbestos fibres in the demolition work area of a former house affected by loose fill asbestos at Block 5, Section 49, Fisher (12 Hamersley Pl, Fisher) has been completed in accordance with the NEPM ASC and the WA Guidelines as detailed in this report. On that basis, I recommend to the Territory that the demolition work area of this property is suitable for residential reuse with respect to asbestos fibres.

**For and on behalf of Lancaster & Dickenson Consulting Pty Ltd,**



Licensed ACT Asbestos Assessor Licence Number: 

Date: 6 August 2017

### Attachments

**Attachment A: Site Sample Plan**

**Attachment B: Certificate of Analysis**

**Attachment C: Photographs**






**Attachment D: Clearance Certificate**

ATTACHMENT A  
Site Sample Plan



**SITE DETAILS**  
Block 5, Section 49  
12 Hamersley Pl  
Fisher, ACT

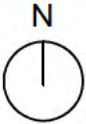
**KEY**

-  DEMOLITION WORK AREA
-  SAMPLE LOCATION (ASBESTOS DETECTED)
-  SAMPLE LOCATION (NO ASBESTOS DETECTED)
-  SITE OUTLINE
-  HOTSPOT REMEDIATION AREA

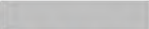
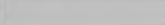
The demolition work area is defined as the area comprising the original structure footprint of the affected premises, the decontamination unit and asbestos waste skip and truck handling area, and the soil disturbance work area of the demolition contractor.

LANCASTER AND DICKENSON CONSULTING  
UNIT 1, 6 DACRE ST  
MITCHELL ACT 2911  
PHONE: (02) 6280 0203  
Web: [www.landd.com.au](http://www.landd.com.au)  
Email: [admin@landd.com.au](mailto:admin@landd.com.au)

**CLIENT**  
Procurement and Capital Works



**DRAWING TITLE**  
SOIL VALIDATION SAMPLING PLAN

Revision: 0  
Drawn by:   
Date created: 18/07/2017  
Checked by: 

ATTACHMENT B

Certificate Of Analysis

## ASBESTOS FIBRE IDENTIFICATION TEST REPORT

CLIENT DETAILS		LABORATORY DETAILS	
<b>Client Name:</b>	Procurement and Capital Works	<b>Address:</b>	1/6 Dacre Street Mitchell ACT 2911
<b>Client Contact:</b>	Ben McDuff	<b>Lab Manager:</b>	
<b>Email:</b>	Ben.mcduff@act.gov.au	<b>Email:</b>	laboratory@landd.com.au
<b>Site Name/Reference:</b>	12 Hamersley Pl, Fisher		

REPORT DETAILS	
<b>Certificate Reference:</b> LD2766ID17/07/2017	<b>Samples Received:</b> 17/07/2017
<b>No. of Samples:</b> 12	<b>Report Issue Date:</b> 06/08/2017

**Test Specifications:** Qualitative identification of Chrysotile, Amosite and Crocidolite asbestos fibre in bulk samples using Polarised Light Microscopy (PLM) and Dispersion Staining Techniques including Synthetic Mineral Fibre (SMF) and Organic Fibre as per Australian Standard 4964-2004 and methods identified in Section C of the Lancaster & Dickenson Consulting (L & D) Laboratory Manual.

L&D ID Reference	Sample Reference	Sample Analysis Date	Sample Mass	Weight of FA and/or AFs in 2mm-7mm fraction	Mass of <2mm fraction Sub-sample	Weight of FA and/or AFs in <2mm sub-sample	Percentage w/w of asbestos (FA and AF) in sub-sample	Asbestos Fibres Detected
LD2766ID17/07/2017-1	1	20/07/2017	565.5g	0.0g	65.3g	0.0g	<0.001	No Asbestos Detected
LD2766ID17/07/2017-2	2	20/07/2017	480.9g	0.0g	61.7g	0.0g	<0.001	No Asbestos Detected
LD2766ID17/07/2017-3	3	20/07/2017	556.3g	0.0g	66.1g	0.0g	<0.001	No Asbestos Detected
LD2766ID17/07/2017-4	4	20/07/2017	613.1g	0.0g	61.8g	0.0g	<0.001	No Asbestos Detected
LD2766ID17/07/2017-5	5	20/07/2017	551.1g	0.0g	66.1g	0.0g	<0.001	No Asbestos Detected
LD2766ID17/07/2017-6	6	20/07/2017	541.1g	0.0g	70.1g	0.0g	<0.001	No Asbestos Detected
LD2766ID17/07/2017-7	7	20/07/2017	588.3g	0.0g	65.3g	0.0g	<0.001	No Asbestos Detected
LD2766ID17/07/2017-8	8	20/07/2017	609.4g	0.0g	59.3g	0.0g	<0.001	No Asbestos Detected
LD2766ID17/07/2017-9	9	20/07/2017	502.4g	0.0g	51.2g	0.0g	<0.001	No Asbestos Detected
LD2766ID17/07/2017-10	10	20/07/2017	636.8g	0.0g	70.3g	0.0g	<0.001	No Asbestos Detected



L&D APPROVED IDENTIFIER		L&D APPROVED SIGNATORY

L&D ID Reference	Sample Reference	Sample Analysis Date	Sample Mass	Weight of FA and/or AFs in 2mm-7mm fraction	Mass of <2mm fraction Sub-sample	Weight of FA and/or AFs in <2mm sub-sample	Percentage w/w of asbestos (FA and AF) in sub-sample	Asbestos Fibres Detected
LD2766ID17/07/2017-11	11	20/07/2017	558.2g	0.0g	59.0g	0.0g	<0.001	No Asbestos Detected
LD2766ID17/07/2017-12	12	20/07/2017	464.1g	0.0g	58.9g	0.0g	<0.001	No Asbestos Detected

**Notes:**

- Where a sample is delivered to the laboratory by a third party, L & D accepts no responsibility for the quality of sample submitted, including whether the sample is representative of the source material.
- All L & D reports must not be reproduced except in full.
- The practical detection limit for identification of asbestos fibre using PLM and dispersion staining techniques is 0.01-0.1%, equivalent to 0.1-1g/kg.
- This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia - May 2009*
- FA = fibrous asbestos, AF = asbestos fines

\* = As per WA Government Department of Health Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated sites - May 2009. Recommended Procedures for Laboratory Analysis of Asbestos in Soil (June 2011); A positive result is typically considered to exceed the 0.001% w/w investigation criteria applied to fine (<7 mm) asbestos material.

L&D APPROVED IDENTIFIER	L&D APPROVED SIGNATORY
	
Page 2 of 2	

## ASBESTOS FIBRE IDENTIFICATION TEST REPORT

CLIENT DETAILS		LABORATORY DETAILS	
<b>Client Name:</b>	Procurement and Capital Works	<b>Address:</b>	1/6 Dacre Street Mitchell ACT 2911
<b>Client Contact:</b>	Ben McDuff	<b>Lab Manager:</b>	
<b>Email:</b>	Ben.mcduff@act.gov.au	<b>Email:</b>	laboratory@landd.com.au
<b>Site Name/Reference:</b>	12 Hamersley Pl, Fisher		

REPORT DETAILS	
<b>Certificate Reference:</b> LD2766ID17/07/2017	<b>Samples Received:</b> 17/07/2017
<b>No. of Samples:</b> 12	<b>Report Issue Date:</b> 20/07/2017

**Test Specifications:** Qualitative identification of Chrysotile, Amosite and Crocidolite asbestos fibre in bulk samples using Polarised Light Microscopy (PLM) and Dispersion Staining Techniques including Synthetic Mineral Fibre (SMF) and Organic Fibre as per Australian Standard 4964-2004 and methods identified in Section C of the Lancaster & Dickenson Consulting (L & D) Laboratory Manual.




L&D ID Reference	Sample Reference	Sample Analysis Date	Sample Description	Sample Mass	Non-Asbestos Fibres Detected	Asbestos Fibres Detected
LD2766ID17/07/2017-1	1	20/07/2017	Light brown sandy soil	565.5g	Organic Fibres Detected	No Asbestos Detected
LD2766ID17/07/2017-2	2	20/07/2017	Light brown sandy soil	480.9g	Organic Fibres Detected	No Asbestos Detected
LD2766ID17/07/2017-3	3	20/07/2017	Light brown sandy soil	556.3g	Organic Fibres Detected	No Asbestos Detected
LD2766ID17/07/2017-4	4	20/07/2017	Light brown sandy soil	613.1g	Organic Fibres Detected	No Asbestos Detected
LD2766ID17/07/2017-5	5	20/07/2017	Light brown sandy soil	551.1g	Organic Fibres Detected	No Asbestos Detected
LD2766ID17/07/2017-6	6	20/07/2017	Light brown sandy soil	541.1g	SMF and Organic Fibres Detected	No Asbestos Detected
LD2766ID17/07/2017-7	7	20/07/2017	Light brown sandy soil	588.3g	Organic Fibres Detected	No Asbestos Detected
LD2766ID17/07/2017-8	8	20/07/2017	Light brown sandy soil	609.4g	Organic Fibres Detected	No Asbestos Detected
LD2766ID17/07/2017-9	9	20/07/2017	Light brown sandy soil	502.4g	Organic Fibres Detected	No Asbestos Detected
LD2766ID17/07/2017-10	10	20/07/2017	Light brown sandy soil	636.8g	Organic Fibres Detected	No Asbestos Detected

L&D APPROVED IDENTIFIER		L&D APPROVED SIGNATORY
	 <b>NATA</b> <small>WORLD RECOGNISED ACCREDITATION</small> <b>Accreditation no: 19512</b> <small>Accredited for compliance with ISO/IEC 17025.</small>	

L&D ID Reference	Sample Reference	Sample Analysis Date	Sample Description	Sample Mass	Non-Asbestos Fibres Detected	Asbestos Fibres Detected
LD2766ID17/07/2017-11	11	20/07/2017	Light brown sandy soil	558.2g	Organic Fibres Detected	No Asbestos Detected
LD2766ID17/07/2017-12	12	20/07/2017	Light brown sandy soil	464.1g	Organic Fibres Detected	No Asbestos Detected

**Notes:**

- Asbestos in bulk materials requiring disintegration such as vinyl, resins, mastic and caulking can be difficult to detect using PLM and dispersion staining due to the low grade or small length or diameter of the asbestos fibres present in the material, or due to the fact that very fine fibres have been distributed intimately throughout the materials. Where no asbestos is detected in such a sample, another, independent analytical technique should be considered.
- Where a sample is delivered to the laboratory by a third party, L & D accepts no responsibility for the quality of sample submitted, including whether the sample is representative of the source material.
- All L & D reports must not be reproduced except in full.
- The practical detection limit for identification of asbestos fibre using PLM and dispersion staining techniques is 0.01-0.1%, equivalent to 0.1-1g/kg.
- The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

L&D APPROVED IDENTIFIER		L&D APPROVED SIGNATORY
	 <b>NATA</b> <small>WORLD RECOGNISED ACCREDITATION</small> <b>Accreditation no: 19512</b> Accredited for compliance with ISO/IEC 17025.	
<b>Page 2 of 2</b>		

ATTACHMENT C  
Site Photographs

## Photographs



**Photograph 1**  
Site



**Photograph 2**  
Site

ATTACHMENT D

Clearance Certificate

## PROJECT DETAILS

JOB NUMBER	KEF347	CLEARANCE DATE	12/7/17
CLIENT	Caylamax Group	REPORT DATE	12/7/17
CONTACT NAME	[REDACTED]	CONTACT NUMBER	+ [REDACTED]
SITE ADDRESS	12 Hamersley Place Fisher, ACT 2611		
SCOPE OF WORKS	Removal of loose fill friable asbestos insulation and non friable asbestos material.		
SCOPE OF CLEARANCE	A thorough visual inspection was carried out of the removal and surrounding areas		
ASBESTOS CONTRACTOR	Caylamax Group	SUPERVISOR	[REDACTED]
ASBESTOS ASSESSOR	[REDACTED]	LICENCE NUMBER	[REDACTED]
LEGISLATION	Asbestos removal clearance certificate issued under regulations 473 & 474 of the Work Health Safety Regulation 2011		

## VISUAL CLEARANCE

	YES	NO	N/A
Did inspection of the specific work area detailed above find no visible asbestos remaining as a result of the demolition work carried out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was raking of the soil carried out within the demolition zone and no visible asbestos material as a result of the remediation work carried out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did the inspection cover the whole site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can the site be safely accessed and soil validation commence?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is a site plan attached showing the demolition zone?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have site photographs been included in this report?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## CONCLUSION

A thorough visual inspection and raking of the soil within the demolition zone was conducted and found **no visible asbestos material** from demolition work in the area or in the vicinity of the area where the work was carried out.

This area has been cleared for soil validation and the site can be handed over on successful completion of the soil validation.

**Note:** Asbestos material may be present within the soil at depth or outside the demolition zone. The site infrastructure on the block associated with the property, including the concrete paths/driveways, retaining walls, concrete slabs and subterranean pipework remain onsite. See attached site plan showing the demolition zone.

Kind Regards,

[REDACTED]

**Hygienist**

PHOTOS



Cleared area of the demolition zone



Cleared area of the demolition zone



Cleared area of the demolition zone



Driveway outside the demolition zone

SITE PLAN



<table border="1"> <tr><td>D</td><td>-</td><td>-</td><td>Approved As Suitable For Use:</td></tr> <tr><td>C</td><td>-</td><td>-</td><td>Evidence:</td></tr> <tr><td>B</td><td>-</td><td>-</td><td>Sign:</td></tr> <tr><td>A</td><td>-</td><td>-</td><td></td></tr> <tr><td>REV</td><td>DESCRIPTION</td><td>DATE</td><td></td></tr> </table>	D	-	-	Approved As Suitable For Use:	C	-	-	Evidence:	B	-	-	Sign:	A	-	-		REV	DESCRIPTION	DATE		<p><b>Territory Traffic Engineering</b> 14/146 Liverpool Street Mitchell ACT 2611 PO Box 648 Mitchell ACT 2611 T: 02 6247 7270 F: 02 6247 0270</p>	<p><b>caylamax:</b> group</p>	<p>Project: <b>12 Hamersley Pl BLK 6 Sec 49 Fisher</b> Drawing Title: <b>Mr Flarty Home Demolition / Asbestos Removal</b></p>	<table border="1"> <tr><th colspan="3">Demolition Site Map</th></tr> <tr><th>Project Number</th><th>Plan Type</th><th>Plan Number</th></tr> <tr><td>TTE17-CMG-2851</td><td>DSM</td><td>1</td></tr> <tr><td>Scale: 1:200</td><td>Completion Date: 7/14/2017</td><td>Rev: -</td></tr> </table>	Demolition Site Map			Project Number	Plan Type	Plan Number	TTE17-CMG-2851	DSM	1	Scale: 1:200	Completion Date: 7/14/2017	Rev: -
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Site Plan