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Housing New Zealand Corporation Retest 1 Methamphetamine Assessment



s 9(2)(a)

Whangarei

Site Assessment Date	29 th June 2017
Sample Team	s 9(2)(a)
Report Author	
Report Checked by	
Key Technical Person	
Property Reference	HSS0034158
Works Order	WO1611788

Author Signature	KTP Signature
s 9(2)(a)	s 9(2)(a)

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1 EXECUTIVE SUMMARY

- **Remediation Passed**
- This property is suitable to be occupied

1.1 Detail

- Methamphetamine was detected in all three locations tested
- All methamphetamine results are now below the Standards New Zealand recommended¹ limit of 1.5 µg/100cm² for high-use areas
- Testing and sampling was performed in accordance with the 2016 Ministry of Health guidelines²

2 SITE INFORMATION

On the 29th June 2017, a retest 1 site investigation for methamphetamine was undertaken at s 9(2)(a) Whangarei.

Sampling was undertaken to determine what level of methamphetamine contamination is present.

Reason for testing: Retest 1

Property reference number: HSS0034158

Works Order reference number: WO1611788

3 DISCLAIMER

Limited sampling was performed. Variations in surface contamination are possible. The results only present a snapshot of surface conditions.

While a high result may indicate that there is a hazard which needs to be managed, a low result or a non-detect does not necessarily mean a complete absence of a hazard.

4 ACCREDITATION

K2 Environmental Ltd is IANZ accredited for methamphetamine sampling using a surface swabbing technique. Sampling is conducted in accordance with an in-house method based on NIOSH 9111.

Recommendations and opinions expressed in this report are based on experience and knowledge of involved substances. These are not covered by accreditation.

¹ Standards New Zealand. NZS 8510:2017: *Testing and decontamination of methamphetamine-contaminated properties*. Standards NZ, 2017.

² Ministry of Health review. Review of remediation standards for clandestine methamphetamine laboratories. Risk assessment recommendations for New Zealand. Oct 2016,

5 SITE MAP

The following is a map indicating where samples were collected from.

Note: This map is not to scale and is to be used as an indication only.

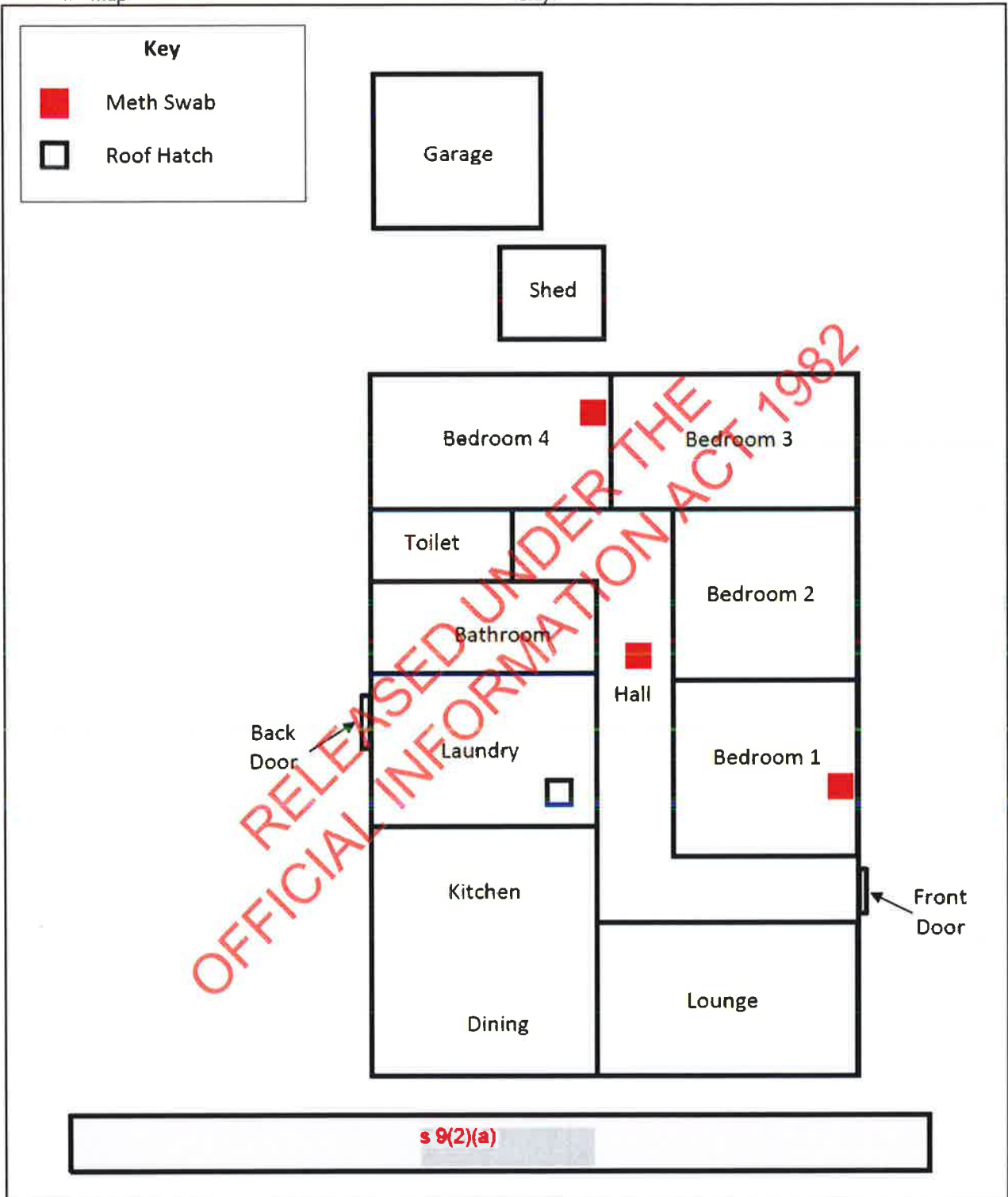


Figure 1 Site Map Showing Sample Locations

6 RESULTS AND RECOMMENDATIONS

The following tables detail the results of sampling for methamphetamine at the above property. Analysis of these samples has been subcontracted to an IANZ accredited laboratory, all samples were analysed using LC-MSMS (Modified method based on NIOSH9111).

Table 1: Guide to Results and Actions Recommended

Below Standards NZ Recommended Limit ³ Or No Action Needed	Precautionary Clean Recommended - as there are elevated contamination levels detected in other locations	Above Standards NZ Recommended Limit Or Remediation required
---	--	--

See appendix A.4 and A.5 for the summary of abbreviations used in the following tables.

Table 2: General recommendations table

Items	Initial			Post-Remediation		Retest 1
	AR	AC	AC	AR	AC	
Air quality	Scrub+vent	Scrub+vent		NAN	NA	NAN
All surfaces	HEPA	HEPA		NAN	NA	NAN
Carpet, curtains, blinds, & wallpaper	REM	REM		NAN	NA	NAN
Light fittings, switches, & electrical fixtures	REM	REM		NAN	NA	NAN
Oven, Appliances, & Whiteware	REM	NC		REM	REM	NAN
Heat pump, heaters, & climate control appliances	REM	NC		REM	CLE	NAN
Ceiling vents, fans, & extractions	REM	REM		NAN	NA	NAN
Ceiling insulation - Pink Batts	REM	REM		NAN	NA	NAN
Underfloor insulation	NAN	NA		NAN	NA	NAN
Hot water cylinder	CLE	CLE		NAN	NA	NAN
Fuse board	CLE	CLE		NAN	NA	NAN

³ Standards NZ Recommended limits are detailed in section A.6 below

Table 3: Methamphetamine results

Location	Initial				Post-Remediation				Retest 1					
	Item	Area Tested	Level	Material	Area Tested	Level	Material	AR	AC	Ref.	Area Tested	Level	Material	AR
Kitchen	Walls	Wall	1.03	GIB-P			NA	NAN	NA				NA	NAN
	Ceiling			GIB-P			NA	NAN	NA				NA	NAN
	Flooring			VINYL			VINYL	NAN	NA				VINYL	NAN
	Doors			WD-P			NA	NAN	NA				NA	NAN
	Windows	Frame	9.5	WD-P	Frame	<0.02	WD-B	NAN	NA				WD-B	NAN
	Skirtings			WD-P			NA	NAN	NA				NA	NAN
	Mouldings			WD-P			NA	NAN	NA				NA	NAN
	Cabinetry			LAM			NA	NAN	NA				NA	NAN
	Sink			STEEL			NA	NAN	NA				NA	NAN
	Bench			STEEL			NA	NAN	NA				NA	NAN
	Bench			LAM			NA	NAN	NA				NA	NAN
	Walls	Wall	13.4	GIB-P			NA	NAN	NA				NA	NAN
	Dining Room	Ceiling			GIB-P			NA	NAN	NA				NA
Flooring				VINYL	Floor	0.03	VINYL	NAN	NA				VINYL	NAN
Doors				WD-P			WD-B	NAN	NA				WD-B	NAN
Windows		Frame	8.4	WD-P	Frame	<0.02	WD-B	NAN	NA				WD-B	NAN
Skirtings				WD-P			NA	NAN	NA				NA	NAN
Mouldings				WD-P			NA	NAN	NA				NA	NAN

Location	Initial					Post-Remediation					Retest 1				
	Item	Area Tested	Level	Material	Area Tested	Level	Material	AR	AC	Ref.	Area Tested	Level	Material	AR	
Lounge	Walls			WALP			WALP	REM	½ REM				WALP	REM	
	Walls			GIB-P			GIB-P	NAN	NA				GIB-P	NAN	
	Ceiling	Ceiling	1.48	GIB-P			GIB-P	NAN	NA				GIB-P	NAN	
	Flooring			CPT			WD-V	NAN	NA				WD-V	NAN	
	Doors			WD-P			NA	NAN	NA				NA	NAN	
	Door Frame			WD-V			WD_B	NAN	NA				WD_B	NAN	
	Windows	Frame	10.2	WD-P	Frame	<0.02	WD-B	NAN	NA				WD-B	NAN	
	Skirtings			WD-P			NA	NAN	NA				NA	NAN	
	Mouldings			WD-P			NA	NAN	NA				NA	NAN	
	Fireplace			WD-V			NA	NAN	NA				NA	NAN	
	Fireplace			TILE	Fireplace	0.15	TILE	NAN	NA				TILE	NAN	
	Walls			GIB-P			NA	NAN	NA				NA	NAN	
	Laundry	Walls			HGL			NA	NAN	NA				NA	NAN
Ceiling				GIB-P			NA	NAN	NA				NA	NAN	
Flooring				VINYL	Floor	<0.02	VINYL	NAN	NA				VINYL	NAN	
Doors		Back Door	9.2	WD-P			WD-B	NAN	NA				WD-B	NAN	
Windows				WD-P			WD-B	NAN	NA				WD-B	NAN	
Skirtings				WD-P			NA	NAN	NA				NA	NAN	
Skirtings				VINYL			NA	NAN	NA				NA	NAN	
Mouldings				WD-P			NA	NAN	NA				NA	NAN	
Cabinetry				WD-P			NA	NAN	NA				NA	NAN	
Sink				STEEL			NA	NAN	NA				NA	NAN	

Location	Initial					Post-Remediation					Retest 1				
	Item	Area Tested	Level	Material	Area Tested	Level	Material	AR	AC	Ref.	Area Tested	Level	Material	AR	
Toilet	Walls			GIB-P	Wall	0.38	GIB-P	NAN	NA			GIB-P	NAN		
	Ceiling			GIB-P			GIB-P	NAN	NA			GIB-P	NAN		
	Flooring			VINYL			VINYL	NAN	NA			VINYL	NAN		
	Doors			WD-P			WD-B	NAN	NA			WD-B	NAN		
	Windows	Frame	6.7	WD-P			WD-B	NAN	NA			WD-B	NAN		
	Skirtings			WD-P			WD-P	NAN	NA			WD-P	NAN		
	Skirtings			VINYL			VINYL	NAN	NA			VINYL	NAN		
	Mouldings			WD-P			NA	NAN	NA			NA	NAN		
	Toilet Seat			PLSTC			PLSTC	NAN	NA			PLSTC	NAN		
	Cistern			PLSTC			PLSTC	NAN	NA			PLSTC	NAN		
	Toilet Bowl			CRMC			CRMC	NAN	NA			CRMC	NAN		
	Walls			GIB-P			GIB-P	NAN	NA			GIB-P	NAN		
	Walls			HGL		Wall	0.52	HGL	NAN	NA		HGL	NAN		
	Ceiling			GIB-P			GIB-P	NAN	NA			GIB-P	NAN		
Bathroom	Flooring			VINYL			VINYL	NAN	NA			VINYL	NAN		
	Doors			WD-P			WD-B	NAN	NA			WD-B	NAN		
	Windows	Frame	6.7	WD-P			WD-B	NAN	NA			WD-B	NAN		
	Skirtings			WD-P			WD-P	NAN	NA			WD-P	NAN		
	Skirtings			VINYL			VINYL	NAN	NA			VINYL	NAN		
	Mouldings			WD-P			WD-P	NAN	NA			WD-P	NAN		
	Sink/Vanity			PLSTC			PLSTC	NAN	NA			PLSTC	NAN		
	Bath			PLSTC			PLSTC	NAN	NA			PLSTC	NAN		

Location	Initial					Post-Remediation					Retest 1				
	Item	Area Tested	Level	Material	Area Tested	Level	Material	AR	AC	Ref.	Area Tested	Level	Material	AR	
Hallway	Walls			WALP	Wall	1.15	WALP	REM	½ REM			WALP	REM		
	Walls			GIB-P			GIB-P	CLE	CLE			GIB-P	NAN		
	Ceiling	Ceiling	1.73	GIB-P	Ceiling	2.1	GIB-P	CLE	CLE	1	Ceiling	0.56	GIB-P	NAN	
	Flooring			CPT			WD-V	NAN	NA			WD-V	NAN		
	Doors			WD-V			WD-B	NAN	NA			WD-B	NAN		
	Skirtings			WD-V			NA	NAN	NA			NA	NAN		
	Mouldings			WD-P			NA	NAN	NA			NA	NAN		
	Cabinetry			GIB-B			GIB-B	CLE	CLE				GIB-B	NAN	
	Cabinetry			GIB-P			GIB-P	CLE	CLE				GIB-P	NAN	
	Fuse Board			METAL			METAL	CLE	CLE				METAL	NAN	
	Walls			WALP			NA	NAN	NA				NA	NAN	
	Walls			GIB-P			GIB-P	NAN	NA				GIB-P	NAN	
	Bedroom 1	Ceiling	Ceiling	1.21	GIB-P			GIB-P	NAN	NA			GIB-P	NAN	
Flooring				CPT			WD-V	NAN	NA			WD-V	NAN		
Doors				WD-P			WD-P	NAN	NA			WD-P	NAN		
Door Frame				WD-V			WD-B	NAN	NA			WD-B	NAN		
Windows		Frame	2.5	WD-P			WD-B	NAN	NA	1	Frame	0.04	WD-B	NAN	
Skirtings				WD-V			NA	NAN	NA			NA	NAN		
Mouldings				WD-P			NA	NAN	NA			NA	NAN		
Cabinetry				WALP			WALP	NAN	NA				WALP	NAN	
Cabinetry				GIB-P			GIB-P	NAN	NA				GIB-P	NAN	

Location	Initial						Post-Remediation						Retest 1			
	Item	Area Tested	Level	Material	Area Tested	Level	Material	AR	AC	Ref.	Area Tested	Level	Material	AR		
Bedroom 2	Walls			WALP			NA	NAN	NA			NA	NAN			
	Walls			GIB-P	Wall	<0.02	GIB-P	NAN	NA			GIB-P	NAN			
	Ceiling	Ceiling	1.29	GIB-P			NA	NAN	NA			NA	NAN			
	Flooring			CPT			WD-V	NAN	NA			WD-V	NAN			
	Doors			WD-P			NA	NAN	NA			NA	NAN			
	Door Frame	Frame	18.2	WD-V	Frame	0.31	WD-B	NAN	NA			WD-B	NAN			
	Windows			WD-P			WD-B	NAN	NA			WD-B	NAN			
	Skirtings			WD-V			NA	NAN	NA			NA	NAN			
	Mouldings			WD-P			NA	NAN	NA			NA	NAN			
	Cabinetry			WALP			WALP	NAN	NA			WALP	NAN			
	Cabinetry			GIB-P	Cabinet	0.09	GIB-P	NAN	NA			GIB-P	NAN			
	Walls			WALP			½ WALP	REM	NC			WALP	REM			
	Walls			GIB-P			GIB-P	NAN	NA			GIB-P	NAN			
	Ceiling	Ceiling	1.95	GIB-P	Ceiling	0.40	GIB-P	NAN	NA			GIB-P	NAN			
Bedroom 3	Flooring			CPT			WD-V	NAN	NA			WD-V	NAN			
	Doors			WD-P			NA	NAN	NA			NA	NAN			
	Door Frame			WD-V			WD-B	NAN	NA			WD-B	NAN			
	Windows	Frame	4.3	WD-P	Frame	<0.02	WD-B	NAN	NA			WD-B	NAN			
	Skirtings			WD-V			NA	NAN	NA			NA	NAN			
	Mouldings			WD-P			NA	NAN	NA			NA	NAN			
	Cabinetry			WALP			WALP	NAN	NA			WALP	NAN			
	Cabinetry			GIB-P			GIB-P	NAN	NA			GIB-P	NAN			

Location	Initial						Post-Remediation						Retest 1			
	Item	Area Tested	Level	Material	Area Tested	Level	Material	AR	AC	Ref.	Area Tested	Level	Material	AR		
Bedroom 4	Walls			WALP			NA	NAN	NA				NA	NAN		
	Walls			GIB-P			NA	NAN	NA				NA	NAN		
	Ceiling	Ceiling	1.04	GIB-P			NA	NAN	NA				NA	NAN		
	Flooring			CPT			WD-V	NAN	NA				WD-V	NAN		
	Doors			WD-P			NA	NAN	NA				NA	NAN		
	Door Frame			WD-V			NA	NAN	NA				NA	NAN		
	Windows	Frame	4.7	WD-P	Frame	<0.02	WD-B	CLE	CLE				WD-B	NAN		
	Skirtings			WD-V			NA	NAN	NA				NA	NAN		
	Mouldings			WD-P			NA	NAN	NA				NA	NAN		
	Cabinetry			WALP			WALP	REM	REM				NA	NAN		
	Cabinetry			GIB-P	Cabinet	3.3	GIB-P	CLE	½ REM	2	Frame	1.02	GIB-P	NAN		
	Walls			WD-B			WD-B	NAN	NA				WD-B	NAN		
	Walls			AL-PC			AL-PC	NAN	NA				AL-PC	NAN		
	Ceiling			WD-B			WD-B	NAN	NA				WD-B	NAN		
Flooring			CON-B			CON-B	NAN	NA				CON-B	NAN			
Doors	Side Door	0.24	AL-PC			AL-PC	NAN	NA				AL-PC	NAN			
Door Frame			WD-B			WD-B	NAN	NA				WD-B	NAN			

Location	Initial					Post-Remediation					Retest 1				
	Item	Area Tested	Level	Material	Area Tested	Level	Material	AR	AC	Ref.	Area Tested	Level	Material	AR	
Shed	Walls			WD-B			WD-B	NAN	NA				WD-B	NAN	
	Ceiling			WD-B			WD-B	NAN	NA				WD-B	NAN	
	Flooring			CON-B			CON-B	NAN	NA				CON-B	NAN	
	Doors	Door	<0.02	WD-B			WD-B	NAN	NA				WD-B	NAN	
	Windows			WD-B			WD-B	NAN	NA				WD-B	NAN	

7 CONCLUSION

Methamphetamine was not detected above the Standards New Zealand recommended level of 1.5 µg/100cm² for high-use areas.

7.1 Occupation of Property

This property therefore is safe be occupied.

Wallpaper backing throughout the property has not been fully removed as recommended by K2 Environmental. Removal has been rerecommended as a precautionary measure.

8 SITE PHOTOS

			
			
<p>Picture 1: Hallway</p>	<p>Picture 2: Hallway Ceiling – 0.56 µg/100cm²</p>	<p>Picture 3: Hallway Wallpaper Backing</p>	<p>Picture 4: Hallway Wallpaper Removed</p>
<p>Picture 5: Bedroom 4</p>	<p>Picture 6: Bedroom 4</p>	<p>Picture 7: Bedroom 4</p>	<p>Picture 8: Bedroom 4 Framing - 1.02 µg/100cm²</p>

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<p>Picture 9: Bedroom 1</p>	<p>Picture 10: Bedroom 1 Window Frame – 0.04 µg/100cm²</p>	<p>Picture 11: Lounge</p>	<p>Picture 12: Lounge</p>
			
<p>Picture 13: Lounge</p>	<p>Picture 14: Lounge</p>		

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APPENDICES

RELEASED UNDER THE
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A.1. Lab Reports



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ANALYSIS REPORT Page 1 of 1

Client: K2 Environmental Limited	Lab No: 1801655	EP-1
Contact: s 9(2)(a)	Date Received: 01-Jul-2017	
C/- K2 Environmental Limited	Date Reported: 03-Jul-2017	
PO Box 28147	Quote No: 79334	
Beckenham	Order No: S1468	
Christchurch 8242	Client Reference: WO1611788	
	Add. Client Ref: s 9(2)(a) Whangarei	
	Submitted By: s 9(2)(a)	

Sample Type: Miscellaneous Wipe				
Sample Name:	S1468-1 Hallway Ceiling	S1468-2 Cabinet Frame Bedroom 4	S1468-3 Blank	
	30-Jun-2017	30-Jun-2017	30-Jun-2017	
Lab Number:	1801655.1	1801655.2	1801655.3	
Methamphetamine Including Precursors on Wipes by LCMSMS				
Amphetamine	µg/sample	< 0.02	< 0.02	< 0.02
Ephedrine	µg/sample	< 0.02	< 0.02	< 0.02
Methamphetamine	µg/sample	0.56	1.02	< 0.02
Pseudoephedrine	µg/sample	< 0.02	< 0.02	< 0.02

Analyst's Comments

Samples 1-3 Comment:
For interpretation of the results presented in this Analysis Report, please contact the person or company that collected the samples.

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analysis of this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available. If the matrix requires that dilutions be performed during analysis.

Sample Type: Miscellaneous Wipe			
Test	Method Description	Default Detection Limit	Sample No
Methamphetamine Including Precursors on Wipes by LCMSMS	Description with 0.1M Sulphonic by shaking. LCMSMS analysis. (modified NIOSH 911.1).	0.02 µg/sample	1-3

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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s 9(2)(a)



Client Services Manager - Environmental



IANZ
ACCREDITED LABORATORY

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised. The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked *, which are not accredited.



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ANALYSIS REPORT Page 1 of 1

Client: K2 Environmental Limited	Lab No: 1805604	SP-1
Contact: s 9(2)(a)	Date Received: 07-Jul-2017	
C/- K2 Environmental Limited	Date Reported: 10-Jul-2017	
PO Box 28147	Quote No: 79334	
Beckenham	Order No: S1468	
Christchurch 8242	Client Reference: WO1611788	
	Add. Client Ref: s 9(2)(a)	Whangarei
	Submitted By: s 9(2)(a)	

Sample Type: Miscellaneous Wipe			
Sample Name:	S1468-4 Bedroom 1 Window Frame 06-Jul-2017		
Lab Number:	1805604 1		
Methamphetamine Including Precursors on Wipes by LCMSMS			
Amphetamine	µg/sample	< 0.02	-
Ephedrine	µg/sample	< 0.02	-
Methamphetamine	µg/sample	0.04	-
Pseudoephedrine	µg/sample	< 0.02	-

Analyst's Comments

Sample 1 Comment:
For interpretation of the results presented in this Analysis Report, please contact the person or company that collected the samples.

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analysis for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available or if the matrix requires that dilutions be performed during analysis.

Sample Type: Miscellaneous Wipe			
Test	Method Description	Default Detection Limit	Sample No
Methamphetamine Including Precursors on Wipes by LCMSMS	Desorption with 0.1M Sulphonic by shaking LCMSMS analysis (modified NIOS 19111)	0.02 µg/sample	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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Client: Services Manager, Environmental



This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC) Through the ILAC Mutual Recognition Arrangement (ILAC MRA) this accreditation is internationally recognised. The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked *, which are not accredited.

A.2. K2 Environmental Sampling Methodology

Sampling as carried out following the guidelines outlined in NIOSH 9111 - *Methamphetamine on wipes by Liquid Chromatography/mass Spectrometry 9111*

Sampling Procedure

- A new pair of gloves (not vinyl) are used for each sample
- Gauze which has been pre-moistened with 3-4ml of methanol is used
- A new (named) template is fixed to the sampling surface
- Each position is photographed
- The surface to be sampled is wiped with firm pressure:
 - using vertical strokes followed by
 - horizontal strokes, then folded again by and then followed by
 - Vertical strokes and horizontal strokes the gauze is then folded with the pad, exposed side in, and placed in shipping container & sealed.
- Each sample clearly Labelled with a unique sample identifier.
- Documentation is completed and samples sent for analysis via courier as soon as practicable.

Blank Samples

A field blank is included with each set of samples for all comprehensive testing.

Sample site Selection

In each room to be sampled the following strategy used to select sampling points:

- High points (fume rises and condenses at higher levels such as ceilings) these are also less likely to have been cleaned
- Areas around windows which are cooler this is where fume is likely to condense
- Painted and varnished surfaces have higher recovery rates
- Hard non-porous surfaces such as benchtops, ranges, range hoods, tiles and glass surfaces. (these will have higher concentrations if present as fume will not have been absorbed)

Areas less likely to be sampled (due to low recovery rates)

- Porous surfaces such as non-vinyl coated wall papers
- Bare wood surfaces
- Pinex walls and tiles (especially if not painted)
- Fabrics, carpets and other furnishings

Recovery Using Methanol Swabs⁴

Surface	Methamphetamine Recovery
Unpainted Dry wall	0.93%
Painted Drywall	74%
Unpainted Plywood	5.7%
Glass	53%
Metal	90%
Tile	12%
Carpet	1.3%

⁴ Methamphetamine Sampling Variability on Different Surfaces Using Different Solvents, John W. Martyny, National Jewish Medical and Research Center, October 2008

A.3. Table of Materials Abbreviations

Material	Abbreviation for tester table
Aluminium	AL
Aluminium - Powder Coated	AL-PC
Brick - bare	BRK-B *
Brick - painted	BRK-P *
Building Paper	BP
Carpet	CPT
Cement sheet	CMNTS
Ceramic	CRMC
Concrete - bare	CON-B
Concrete -painted	CON-P
Cinder block - bare	CIND-B
Cinder block - painted	CIND-P
GIB - bare	GIB-B
GIB - painted	GIB-P
Hardboard - painted	HRDB-P
Hardboard - varnished	HRDB-V
Hardiglaze	HGL
Lathe and plaster – bare	L&P
Lathe and plaster - painted	L&P-P
Laminate	LAM
Pinex	PINEX
Plastic	PLSTC
Soft-board Ceiling Tile	SCT
Stainless steel	STEEL
Stipple	STIPPLE
Tiles	TILE
Tin	TIN
Vinyl/lino	VINYL
Wallpaper	WALP
Wallpaper - vinyl	WALP-V
Wallpaper - painted	WALP-P
Wood - bare	WD-B
Wood - painted	WD-P
Wood - varnished	WD-V
Wood - stained	WD-S
Not Applicable	NA
Not Identified	NI

A.4. Table of Recommended Actions Abbreviations

AR (Action recommended)	Abbreviation for Tester Table
Ventilate rooms with mechanical assistance	Scrub+Vent
Vacuum flooring with H13 rated vacuum cleaner	HEPA
Item to be removed	REM
Remove coating (e.g. paint/varnish)	CR
Triple Clean – Remediation Required	CLE
Triple clean – Precautionary or Recommended	CLE
Action not identified	NI
No action needed	NAN

A.5. Table of Actions Completed Abbreviations

AC (Action completed)	Abbreviation for tester table
Triple Cleaned with sugar soap – <i>decon. team must advise if any alternative cleaning products used so a new code can be generated, decon. team must inform testers if using anything other than sugar soap for a specific property</i>	CLE
Item removed	REM
Coating (e.g. paint/varnish) fully removed	CR-F
Coating partially removed	CR-P
Action Not Identified	NI
Not Completed	NC
Not Applicable / No Action	NA

A.6. New Zealand Standards Recommended Limits

NZ Standards Methamphetamine Limits 2017	
High-use areas Easily accessed and regularly used by adults and children	1.5 µg/100cm ²
Limited-use areas Accessed for short periods of time only by adults	3.8 µg/100cm ²

A.7. Ministry of Health Recommended Limits

Ministry of Health Methamphetamine Standard 2016	
Former clandestine methamphetamine laboratory	0.5 µg/100cm ²
Non-lab houses with carpet present	1.5 µg/100cm ²
Non-lab houses with no carpet present	2.0 µg/100cm ²



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Housing New Zealand Corporation Post-remediation Methamphetamine Assessment

8th June 2017



s 9(2)(a)

Whangarei

Sample Team	s 9(2)(a)
Report Author	s 9(2)(a)
Report Checked by	
Key Technical Person	
Property Reference	HSS0034158
Works Order	WO1611788
Author Signature	KTP Signature
s 9(2)(a)	s 9(2)(a)

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1 EXECUTIVE SUMMARY

- **Remediation Failed**
- This property is not suitable to be occupied

1.1 Detail

- Methamphetamine was detected in ten of seventeen locations tested
- Two methamphetamine results are above the Ministry of Health recommended¹ limit of 2.0 µg/100cm² for properties with no soft furnishings present

2 SITE INFORMATION

On the 8th of June 2017, a post-remediation site investigation for methamphetamine was undertaken at s 9(2)(a) Whangarei.

Sampling was undertaken to determine what level of methamphetamine contamination is present.

Reason for testing: Clearance

Property reference number: HSS0034158

Works Order reference number: WO1611788

2.1 Interior materials removed

The following materials have been removed:-

- Wallpaper partially in lounge, hall and bedroom 3
- Wallpaper fully in bedroom 1, bedroom 2 and bedroom 4
- GIB walls in the kitchen and dining room
- All soft furnishings such as carpet and curtains
- All electrical sockets, light shades and switches
- Some doors and door framing
- Paint stripped from windowsills in all rooms

¹ Ministry of Health review. Review of remediation standards for clandestine methamphetamine laboratories. Risk assessment recommendations for New Zealand. Oct 2016,

2.2 Conditions of the Interior of the Dwelling

The following conditions were found in the dwelling:-

- Interior surfaces all appear to have been cleaned well
- Power has been isolated
- Log burner remains
- Underfloor insulation is still present
- Ceiling insulation has been removed throughout

2.3 Conditions of the Exterior and Grounds

- Garage and shed are empty
- Lawns and vegetation are overgrown
- Most rubbish has been removed

3 DISCLAIMER

Limited sampling was performed. Variations in surface contamination are possible. The results only present a snapshot of surface conditions.

While a high result may indicate that there is a hazard which needs to be managed, a low result or a non-detect does not necessarily mean a complete absence of a hazard.

4 ACCREDITATION

K2 Environmental Ltd is IANZ accredited for methamphetamine sampling using a surface swabbing technique. Sampling is conducted in accordance with an in-house method based on NIOSH 9111.

Recommendations and opinions expressed in this report are based on experience and knowledge of involved substances. These are not covered by accreditation.

5 SITE MAP

The following is a map indicating where samples were collected from.

Note: This map is not to scale and is to be used as an indication only.

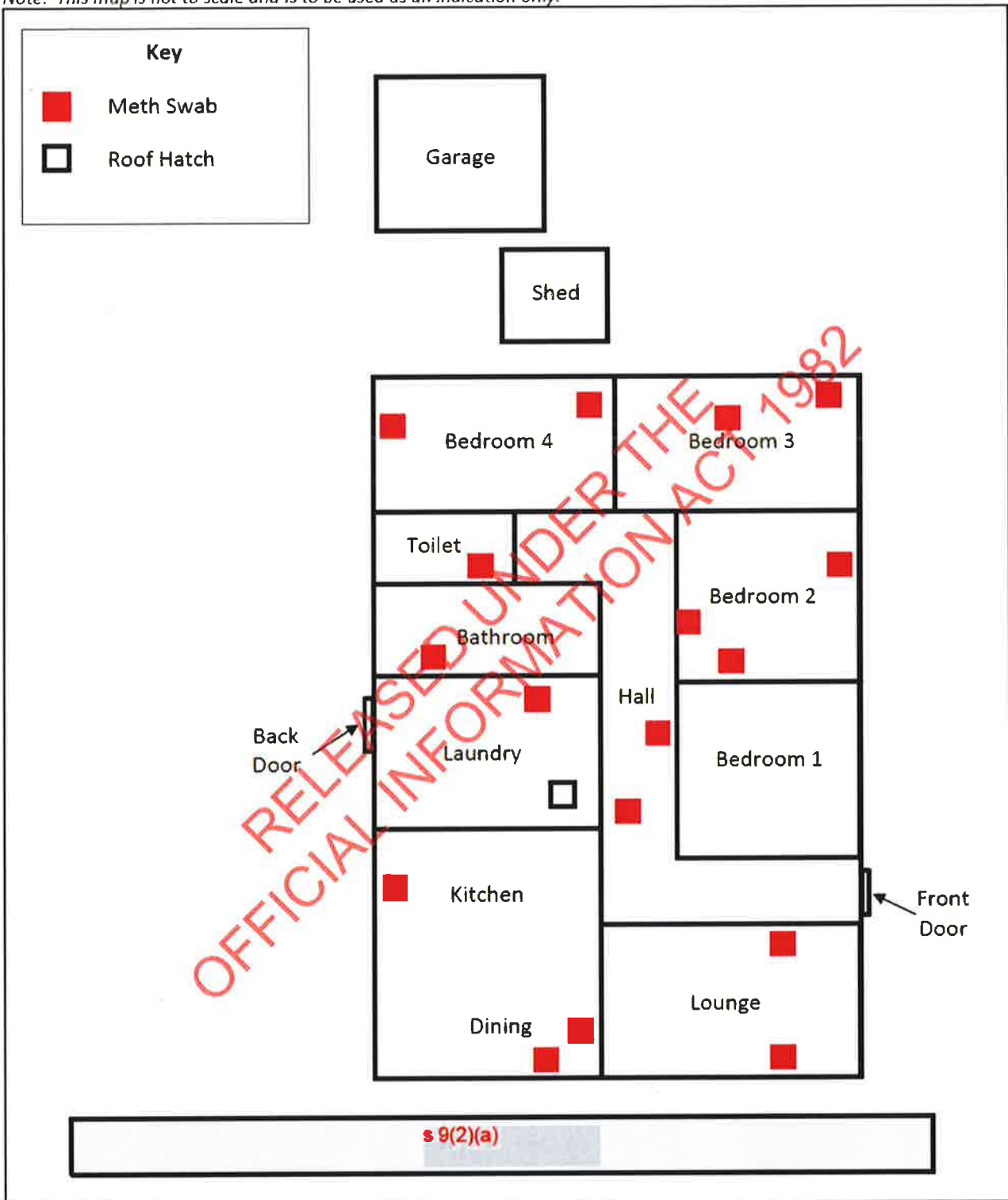


Figure 1 Site Map Showing Sample Locations

6 RESULTS AND RECOMMENDATIONS

The following tables detail the results of sampling for methamphetamine at the above property. Analysis of these samples has been subcontracted to an IANZ accredited laboratory, all samples were analysed using LC-MSMS (Modified method based on NIOSH9111).

Table 1: Guide to Results and Actions Recommended

Below MoH Recommended Limit? Or No Action Needed	Precautionary Clean Recommended - as there are elevated contamination levels detected in other locations	Above MoH Recommended Limit Or Remediation required
--	--	---

See appendix A.4 and A.5 for the summary of abbreviations used in the following tables.

Table 2: General recommendations table

Items	Initial			Post-Remediation	
	AR	AC	AR	AR	AC
Air quality	Scrub+Vent	Scrub+Vent	NAN	NAN	AC
All surfaces	HEPA	HEPA	NAN	NAN	
Carpet, curtains, blinds, & wallpaper	REM	REM	NAN	NAN	
Light fittings, switches, & electrical fixtures	REM	REM	NAN	NAN	
Oven, Appliances, & Whiteware	REM	NC	REM	REM	
Heat pump, heaters, & climate control appliances	REM	NC	REM	REM	
Ceiling vents, fans, & extractions	REM	REM	NAN	NAN	
Ceiling insulation - (Pink Batts)	REM	REM	NAN	NAN	
Underfloor insulation	REM	NC	REM	REM	
Hot water cylinder	CLE	CLE	NAN	NAN	
Fuse board	CLE	CLE	NAN	NAN	

2 MoH Recommended limits are detailed in section A.6 below

Table 3: Methamphetamine results

Location	Initial						Post-Remediation					
	Item	Area Tested	Level (µg/100cm ²)	Material	AR	AC	Ref.	Area Tested	Level (µg/100cm ²)	Material	AR	AC
Kitchen	Walls	Wall	1.03	GIB-P	REM	REM				NA	NAN	
	Ceiling			GIB-P	REM	REM				NA	NAN	
	Flooring			VINYL	CLE	CLE				VINYL	NAN	
	Doors			WD-P	REM	REM				NA	NAN	
	Windows	Frame	9.5	WD-P	CR	CR	1	Frame	<0.02	WD-B	NAN	
	Skirtings			WD-P	REM	REM				NA	NAN	
	Mouldings			WD-P	REM	REM				NA	NAN	
	Cabinetry			LAM	REM	REM				NA	NAN	
	Sink			STEEL	REM	REM				NA	NAN	
	Bench			STEEL	REM	REM				NA	NAN	
	Bench			LAM	REM	REM				NA	NAN	
	Walls	Wall	13.4	GIB-B	REM	REM				NA	NAN	
	Dining Room	Ceiling			GIB-P	REM	REM				NA	NAN
Flooring				VINYL	REM	CLE	2	Floor	0.03	VINYL	NAN	
Doors				WD-P	REM	REM				WD-B	NAN	
Windows		Frame	8.4	WD-P	CR	CR	3	Frame	<0.02	WD-B	NAN	
Skirtings				WD-P	REM	REM				NA	NAN	
Mouldings				WD-P	REM	REM				NA	NAN	
					WD-P	REM	REM				NA	NAN

		Initial						Post-Remediation					
Location	Item	Area Tested	Level (µg/100cm²)	Material	AR	AC	Ref.	Area Tested	Level (µg/100cm²)	Material	AR	AC	
Lounge	Walls			WALP	REM	1/2 REM				WALP	REM		
	Walls			GIB-P	CLE	CLE				GIB-P	NAN		
	Ceiling	Ceiling	1.48	GIB-P	CLE	CLE				GIB-P	NAN		
	Flooring			CPT	REM	REM				WD-V	NAN		
	Doors			WD-P	REM	REM				NA	NAN		
	Door Frame			WD-V	REM	REM				WD_B	NAN		
	Windows	Frame	10.2	WD-P	CR	CR	4	Frame	<0.02	WD-B	NAN		
	Skirtings			WD-P	REM	REM				NA	NAN		
	Mouldings			WD-P	REM	REM				NA	NAN		
	Fireplace			WD-V	REM	REM				NA	NAN		
	Fireplace			TILE	REM	CLE	5	Fireplace	0.15	TILE	NAN		
	Walls			GIB-P	REM	REM				NA	NAN		
	Laundry	Walls			HGL	REM	REM				NA	NAN	
Ceiling				GIB-P	REM	REM				NA	NAN		
Flooring				VINYL	CLE	CLE	6	Floor	<0.02	VINYL	NAN		
Doors		Back Door	9.2	WD-P	REM	REM				WD-B	NAN		
Windows				WD-P	CR	CR				WD-B	NAN		
Skirtings				WD-P	REM	REM				NA	NAN		
Skirtings				VINYL	REM	REM				NA	NAN		
Mouldings				WD-P	REM	REM				NA	NAN		
Cabinetry				WD-P	REM	REM				NA	NAN		
Sink				STEEL	REM	REM				NA	NAN		

		Initial						Post-Remediation					
Location	Item	Area Tested	Level (µg/100cm ²)	Material	AR	AC	Ref.	Area Tested	Level (µg/100cm ²)	Material	AR	AC	
Toilet	Walls			GIB-P	REM	CLE	7	Wall	0.38	GIB-P	NAN		
	Ceiling			GIB-P	REM	CLE				GIB-P	NAN		
	Flooring			VINYL	CLE	CLE				VINYL	NAN		
	Doors			WD-P	REM	REM				WD-B	NAN		
	Windows	Frame	6.7	WD-P	CR	CR-F				WD-B	NAN		
	Skirtings			WD-P	REM	CLE				WD-P	NAN		
	Skirtings			VINYL	REM	CLE				VINYL	NAN		
	Mouldings			WD-P	REM	REM				NA	NAN		
	Toilet Seat			PLSTC	REM	CLE				PLSTC	NAN		
	Cistern			PLSTC	REM	CLE				PLSTC	NAN		
	Toilet Bowl			CRMC	REM	CLE				CRMC	NAN		
	Walls			GIB-P	REM	CLE					GIB-P	NAN	
	Walls			HGL	REM	CLE	8	Wall	0.52		HGL	NAN	
	Bathroom	Ceiling			GIB-P	REM	CLE				GIB-P	NAN	
Flooring				VINYL	CLE	CLE				VINYL	NAN		
Doors				WD-P	REM	REM				WD-B	NAN		
Windows		Frame	6.7	WD-P	CR	CR-F				WD-B	NAN		
Skirtings				WD-P	REM	CLE				WD-P	NAN		
Skirtings				VINYL	REM	CLE				VINYL	NAN		
Mouldings				WD-P	REM	CLE				WD-P	NAN		
Sink/Vanity				PLSTC	REM	CLE				PLSTC	NAN		
Bath				PLSTC	REM	CLE				PLSTC	NAN		

		Initial						Post-Remediation					
Location	Item	Area Tested	Level (µg/100cm²)	Material	AR	AC	Ref.	Area Tested	Level (µg/100cm²)	Material	AR	AC	
Hallway	Walls			WALP	REM	1/2 REM	9	Wall	1.15	WALP	REM		
	Walls			GIB-P	CLE	CLE				GIB-P	CLE		
	Ceiling	Ceiling	1.73	GIB-P	CLE	CLE	10	Ceiling	2.1	GIB-P	CLE		
	Flooring			CPT	REM	REM				WD-V	NAN		
	Doors			WD-V	CLE	REM				WD-B	NAN		
	Skirtings			WD-V	CLE	REM				NA	NAN		
	Mouldings			WD-P	CLE	REM				NA	NAN		
	Cabinetry			GIB-B	CLE	CLE				GIB-B	CLE		
	Cabinetry			GIB-P	CLE	CLE				GIB-P	CLE		
	Fuse Board			METAL	CLE	CLE				METAL	CLE		
	Walls			WALP	REM	REM				NA	NAN		
	Bedroom 1	Walls			GIB-P	CLE	CLE				GIB-P	NAN	
Ceiling		Ceiling	1.21	GIB-P	CLE	CLE				GIB-P	NAN		
Flooring				CPT	REM	REM				WD-V	NAN		
Doors				WD-P	CLE	CLE				WD-P	NAN		
Door Frame				WD-V	CLE	CLE				WD-B	NAN		
Windows		Frame		WD-P	CLE	CR-F				WD-B	NAN		
Skirtings				WD-V	CLE	REM				NA	NAN		
Mouldings				WD-P	CLE	REM				NA	NAN		
Cabinetry				WALP	REM	NC				WALP	NAN		
Cabinetry				GIB-P	CLE	CLE				GIB-P	NAN		

Location	Item	Initial				Post-Remediation					
		Area Tested	Level (µg/100cm²)	Material	AR	AC	Ref.	Area Tested	Level (µg/100cm²)	Material	AR
Bedroom 2	Walls			WALP	REM	REM			NA	NAN	
	Walls			GIB-P	REM	NC	12	Wall	<0.02	GIB-P	NAN
	Ceiling		1.29	GIB-P	REM	REM				NA	NAN
	Flooring			CPT	REM	REM			WD-V	NAN	
	Doors			WD-P	REM	REM			NA	NAN	
	Door Frame		18.2	WD-V	REM	REM	13	Frame	0.31	NA	NAN
	Windows			WD-P	CR	CR			WD-B	NAN	
	Skirtings			WD-V	REM	REM			NA	NAN	
	Mouldings			WD-P	REM	REM			NA	NAN	
	Cabinetry			WALP	REM	NC			WALP	NAN	
Bedroom 3	Cabinetry			GIB-P	REM	NC	14	Cabinet	0.09	GIB-P	NAN
	Walls			WALP	REM	1/2 REM				WALP	REM
	Walls			GIB-P	CLE	NC				GIB-P	NAN
	Ceiling		1.95	GIB-P	CLE	CLE	15	Ceiling	0.40	GIB-P	NAN
	Flooring			CPT	REM	REM			WD-V	NAN	
	Doors			WD-P	REM	REM			NA	NAN	
	Door Frame			WD-V	REM	REM			WD-B	NAN	
	Windows		4.3	WD-P	CR	CR-F	13	Frame	<0.02	WD-B	NAN
	Skirtings			WD-V	REM	REM			NA	NAN	
	Mouldings			WD-P	REM	REM			NA	NAN	
Cabinetry			WALP	REM	NC			WALP	NAN		
Cabinetry			GIB-P	REM	NC			GIB-P		NAN	

Location	Initial						Post-Remediation					
	Item	Area Tested	Level (µg/100cm²)	Material	AR	AC	Ref.	Area Tested	Level (µg/100cm²)	Material	AR	AC
Bedroom 4	Walls			WALP	REM	REM				NA	NAN	
	Walls			GIB-P	REM	REM				NA	NAN	
	Ceiling	Ceiling	1.04	GIB-P	REM	REM				NA	NAN	
	Flooring			CPT	REM	REM				WD-V	NAN	
	Doors			WD-P	REM	REM				NA	NAN	
	Door Frame			WD-V	REM	REM				NA	NAN	
	Windows	Frame	4.7	WD-P	CR	CR	17	Frame	<0.02	WD-B	CLE	
	Skirtings			WD-V	REM	REM				NA	NAN	
	Mouldings			WD-P	REM	REM				NA	NAN	
	Cabinetry			WALP	REM	NC				WALP	REM	
	Cabinetry				GIB-P	REM	16	Cabinet	3.3	GIB-P	CLE	
	Garage	Walls			WD-B	NAN	NA				WD-B	NAN
Walls				AL-PC	NAN	NA				AL-PC	NAN	
Ceiling				WD-B	NAN	NA				WD-B	NAN	
Flooring				CON-B	NAN	NA				CON-B	NAN	
Doors		Side Door	0.24	AL-PC	NAN	NA				AL-PC	NAN	
Door Frame				WD-B	NAN	NA				WD-B	NAN	

		Initial					Post-Remediation					
Location	Item	Area Tested	Level ($\mu\text{g}/100\text{cm}^2$)	Material	AR	AC	Ref.	Area Tested	Level ($\mu\text{g}/100\text{cm}^2$)	Material	AR	AC
Site	Walls			WD-B	NAN	NA				WD-B	NAN	
	Ceiling			WD-B	NAN	NA				WD-B	NAN	
	Flooring			CON-B	NAN	NA				CON-B	NAN	
	Doors	Door	<0.02	WD-B	NAN	NA				WD-B	NAN	
	Windows			WD-B	NAN	NA				WD-B	NAN	

7 CONCLUSION

Methamphetamine was detected above the Ministry of Health recommended level of $2.0 \mu\text{g}/100\text{cm}^2$ in the following locations:

- Hallway
- Bedroom 4

7.1 Occupation of Property

This property therefore should not be occupied.

The wallpaper in and the lounge, hallway, bedroom 3, and bedroom 4 wardrobe is a porous material and should be considered a soft furnishing.

- Methanol wipes have a poor recovery of methamphetamine from porous substances. A portion of the methanol in the wipe gets absorbed into the material, and so recovers less meth.
- Actual methamphetamine levels in the walls with wallpaper is likely to be much higher than would be reported
- All wallpaper on the walls has been recommended to be removed for this reason

Some precautionary cleaning in the toilet and bathroom as well as the removal of wallpaper, cabinetry and appliances in some rooms recommended by K2 Environmental was not completed.

8 SITE PHOTOS

				<p>Picture 1: Kitchen/Dining Room</p>	<p>Picture 2: Kitchen Window Frame - <math><0.02 \mu\text{g}/100\text{cm}^2</math></p>	<p>Picture 3: Dining Room Floor 0.03 $\mu\text{g}/100\text{cm}^2$</p>	<p>Picture 4: Dining Room Window Frame - <math><0.02 \mu\text{g}/100\text{cm}^2</math></p>
				<p>Picture 5: Lounge</p>	<p>Picture 6: Lounge Window Frame - <math><0.02 \mu\text{g}/100\text{cm}^2</math></p>	<p>Picture 7: Lounge Fireplace – 0.15 $\mu\text{g}/100\text{cm}^2$</p>	<p>Picture 8: Laundry</p>

			
<p>Picture 9: Laundry Floor -- <0.02 µg/100cm²</p>	<p>Picture 10: Hall</p>	<p>Picture 11: Hall Wall -- 1.15 µg/100cm²</p>	<p>Picture 12: Hall Ceiling -- 2.1 µg/100cm²</p>
			
<p>Picture 13: Bedroom 2</p>	<p>Picture 14: Bedroom 2 Cabinet -- 0.09 µg/100cm²</p>	<p>Picture 15: Bedroom 2 Door Frame -- 0.31 µg/100cm²</p>	<p>Picture 16: Bedroom 2 Wall - <0.02 µg/100cm²</p>

<p>Picture 17: Bedroom 3</p>	<p>Picture 18: Bedroom 3 Window Frame - <math><0.02 \mu\text{g}/100\text{cm}^2</math></p>	<p>Picture 19: Bedroom 3 Ceiling - <math>0.40 \mu\text{g}/100\text{cm}^2</math></p>	<p>Picture 20: Bedroom 4</p>
<p>Picture 21: Bedroom 4 Window Frame - <math><0.02 \mu\text{g}/100\text{cm}^2</math></p>	<p>Picture 22: Bedroom 4 Cabinet - <math>3.3 \mu\text{g}/100\text{cm}^2</math></p>	<p>Picture 23: Toilet</p>	<p>Picture 24: Toilet Wall - <math>0.38 \mu\text{g}/100\text{cm}^2</math></p>

			
			
<p>Picture 25: Bathroom</p>	<p>Picture 26: Bathroom Wall – 0.52µg/100cm²</p>	<p>Picture 27: Fuse Box</p>	<p>Picture 28: Remaining Wallpaper</p>
<p>Picture 29: Underfloor Space</p>	<p>Picture 30: Shed</p>	<p>Picture 31: Exterior</p>	<p>Picture 32: Exterior</p>

APPENDICES

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A.1. Lab Reports



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TRIED, TESTED AND TRUSTED

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ANALYSIS REPORT Page 1 of 2

Client: K2 Environmental Limited Contact: s 9(2)(a)	Lab No: 1790576	SPV
C/- K2 Environmental Limited PO Box 28147 Beckenham Christchurch 8242	Date Received: 12-Jun-2017 Date Reported: 13-Jun-2017 Quote No: 79334 Order No: S1300 Client Reference: WO1611788 Add. Client Ref: s 9(2)(a) Submitted By: s 9(2)(a)	Whangarei

Sample Type: Miscellaneous Wipe					
Sample Name:	S1300-1 Kitchen Window Frame	S1300-2 Dining Floor	S1300-3 Dining Window Frame	S1300-4 Lounge Window Frame	S1300-5 Lounge Fireplace
Lab Number:	1790576.1	1790576.2	1790576.3	1790576.4	1790576.5
Methamphetamine Including Precursors on Wipes by LCMSMS					
Amphetamine	µg/sample	< 0.02	< 0.02	< 0.02	< 0.02
Ephedrine	µg/sample	< 0.02	< 0.02	< 0.02	< 0.02
Methamphetamine	µg/sample	< 0.02	0.03	< 0.02	0.15
Pseudoephedrine	µg/sample	< 0.02	< 0.02	< 0.02	< 0.02
Sample Name:	S1300-6 Laundry Floor	S1300-7 Toilet Wall	S1300-8 Bathroom Wall	S1300-9 Hall Wall	S1300-10 Hall Ceiling
Lab Number:	1790576.6	1790576.7	1790576.8	1790576.9	1790576.10
Methamphetamine Including Precursors on Wipes by LCMSMS					
Amphetamine	µg/sample	< 0.02	< 0.02	< 0.02	0.05
Ephedrine	µg/sample	< 0.02	< 0.02	< 0.02	< 0.02
Methamphetamine	µg/sample	< 0.02	0.28	0.52	2.1
Pseudoephedrine	µg/sample	< 0.02	< 0.02	< 0.02	< 0.02
Sample Name:	S1300-11 Bedroom 2 Door Frame	S1300-12 Bedroom 2 Wall	S1300-13 Bedroom 3 Window Frame	S1300-14 Bedroom 2 Cabinet	S1300-15 Bedroom 3 Ceiling
Lab Number:	1790576.11	1790576.12	1790576.13	1790576.14	1790576.15
Methamphetamine Including Precursors on Wipes by LCMSMS					
Amphetamine	µg/sample	< 0.02	< 0.02	< 0.02	< 0.02
Ephedrine	µg/sample	< 0.02	< 0.02	< 0.02	< 0.02
Methamphetamine	µg/sample	0.31	< 0.02	< 0.02	0.40
Pseudoephedrine	µg/sample	< 0.02	< 0.02	< 0.02	< 0.02
Sample Name:	S1300-16 Bedroom 4 Cabinet	S1300-17 Bedroom 4 Window Frame	S1300-18 Field Blank		
Lab Number:	1790576.16	1790576.17	1790576.18		
Methamphetamine Including Precursors on Wipes by LCMSMS					
Amphetamine	µg/sample	0.08	< 0.02	< 0.02	-
Ephedrine	µg/sample	< 0.02	< 0.02	< 0.02	-
Methamphetamine	µg/sample	3.3	< 0.02	< 0.02	-
Pseudoephedrine	µg/sample	< 0.02	< 0.02	< 0.02	-

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This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC/MRA) this accreditation is internationally recognised. The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked *, which are not accredited.

Analyst's Comments

Samples 1-18 Comment:
For interpretation of the results presented in this Analysis Report, please contact the person or company that collected the samples.

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Miscellaneous Wipe			
Test	Method Description	Default Detection Limit	Sample No
Methamphetamine Including Precursors on Wipes by LCMSMS	Desorption with 0.1M Sulphuric by shaking, LCMSMS analysis (modified NIOSH9111)	0.02 µg/sample	1-18

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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s 9(2)(a)



Client Services Manager - Environmental

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A.2. K2 Environmental Sampling Methodology

Sampling as carried out following the guidelines outlined in NIOSH 9111 - *Methamphetamine on wipes by Liquid Chromatography/mass Spectrometry 9111*

Sampling Procedure

- A new pair of gloves (not vinyl) are used for each sample
- Gauze which has been pre-moistened with 3-4ml of methanol is used
- A new (named) template is fixed to the sampling surface
- Each position is photographed
- The surface to be sampled is wiped with firm pressure:
 - using vertical strokes followed by
 - horizontal strokes, then folded again by and then followed by
 - Vertical strokes and horizontal strokes the gauze is then folded with the pad, exposed side in, and placed in shipping container & sealed.
- Each sample clearly Labelled with a unique sample identifier.
- Documentation is completed and samples sent for analysis via courier as soon as practicable.

Blank Samples

A field blank is included with each set of samples for all comprehensive testing.

Sample site Selection

In each room to be sampled the following strategy used to select sampling points:

- High points (fume rises and condenses at higher levels such as ceilings) these are also less likely to have been cleaned
- Areas around windows which are cooler this is where fume is likely to condense
- Painted and varnished surfaces have higher recovery rates
- Hard non-porous surfaces such as benchtops, ranges, range hoods, tiles and glass surfaces. (these will have higher concentrations if present as fume will not have been absorbed)

Areas less likely to be sampled (due to low recovery rates)

- Porous surfaces such as non-vinyl coated wall papers
- Bare wood surfaces
- Pinex walls and tiles (especially if not painted)
- Fabrics, carpets and other furnishings

Recovery Using Methanol Swabs³

Surface	Methamphetamine Recovery
Unpainted Dry wall	0.93%
Painted Drywall	74%
Unpainted Plywood	5.7%
Glass	53%
Metal	90%
Tile	12%
Carpet	1.3%

³ Methamphetamine Sampling Variability on Different Surfaces Using Different Solvents, John W. Martyny, National Jewish Medical and Research Center, October 2008

A.3. Table of Materials Abbreviations

Material	Abbreviation for tester table
Aluminium	AL
Aluminium - Powder Coated	AL-PC
Brick - bare	BRK-B *
Brick - painted	BRK-P *
Building Paper	BP
Carpet	CPT
Cement sheet	CMNTS
Ceramic	CRMC
Concrete - bare	CON-B
Concrete -painted	CON-P
Cinder block - bare	CIND-B
Cinder block - painted	CIND-P
GIB - bare	GIB-B
GIB - painted	GIB-P
Hardboard - painted	HRDB-P
Hardboard - varnished	HRDB-V
Hardiglaze	HGL
Lathe and plaster – bare	L&P
Lathe and plaster - painted	L&P-P
Laminate	LAM
Pinex	PINEX
Plastic	PLSTC
Soft-board Ceiling Tile	SCT
Stainless steel	STEEL
Stipple	STIPPLE
Tiles	TILE
Tin	TIN
Vinyl/lino	VINYL
Wallpaper	WALP
Wallpaper - vinyl	WALP-V
Wallpaper - painted	WALP-P
Wood - bare	WD-B
Wood - painted	WD-P
Wood - varnished	WD-V
Wood - stained	WD-S
Not Applicable	NA
Not Identified	NI

A.4. Table of Recommended Actions Abbreviations

AR (Action recommended)	Abbreviation for Tester Table
Ventilate rooms with mechanical assistance	Scrub+Vent
Vacuum flooring with H13 rated vacuum cleaner	HEPA
Item to be removed	REM
Remove coating (e.g. paint/varnish)	CR
Triple Clean – Remediation Required	CLE
Triple clean – Precautionary or Recommended	CLE
Action not identified	NI
No action needed	NAN

A.5. Table of Actions Completed Abbreviations

AC (Action completed)	Abbreviation for tester table
Triple Cleaned with sugar soap – <i>decon. team must advise if any alternative cleaning products used so a new code can be generated, decon. team must inform testers if using anything other than sugar soap for a specific property</i>	CLE
Item removed	REM
Coating (e.g. paint/varnish) fully removed	CR-F
Coating partially removed	CR-P
Action Not Identified	NI
Not Completed	NC
Not Applicable / No Action	NA

A.6. Ministry of Health Recommended Limits

Ministry of Health Methamphetamine Standard	
Former clandestine methamphetamine laboratory	0.5 µg/100cm ²
Non-lab houses with carpet present	1.5 µg/100cm ²
Non-lab houses with no carpet present	2.0 µg/100cm ²



Environmental Ltd

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Housing New Zealand Corporation Initial Methamphetamine Assessment

27th March and 6th April 2017



s 9(2)(a)

Whangarei

Sample Team	s 9(2)(a)
Report Author	s 9(2)(a)
Key Technical Person	s 9(2)(a)
Property Reference	HSS0034158
Works Order	WO1611788
Author Signature	KTP Signature
s 9(2)(a)	s 9(2)(a)

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1 EXECUTIVE SUMMARY

- Methamphetamine was detected in nineteen of twenty locations tested
- Thirteen methamphetamine results are above the threshold of 1.5µg/100cm² for properties with soft furnishings
- The property is therefore **not** suitable to be occupied

Out of
Scope

2 SITE INFORMATION

On the 27th March and 6th of April 2017, an initial site investigation for methamphetamine contamination was undertaken at s 9(2)(a) [REDACTED], Whangarei.

Sampling was undertaken to determine what level of methamphetamine contamination is present. The site had to be visited twice as on the first site visit a dog was present on the grounds, restricting access to both the garage and shed.

Reason for testing: Suspicion

Property reference number: HSS0034158

Works order reference number: WO1611788

2.1 Conditions of the Interior of the Dwelling

- Property is currently tenanted
- Interior is in an unclean and untidy condition
- Moderate levels of rubbish and debris
- Paint and wallpaper peeling in majority of rooms
- Door framing damaged
- Carpet stained in some rooms
- Some lightbulbs missing
- Cannabis and drug paraphernalia found in three of four bedrooms
- Ceiling insulation is Pink Batts

2.2 Conditions of the Exterior and Grounds

- Garage and shed have some possessions present
- Lawns and vegetation are mostly tidy
- Dog present on property during first site visit
- No obvious signs of fire pits or chemical disposal present

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3 DISCLAIMER

Limited sampling was performed. Variations in surface contamination are possible. The results only present a snapshot of surface conditions.

While a high result may indicate that there is a hazard which needs to be managed, a low result or a non-detect does not necessarily mean a complete absence of a hazard.

4 ACCREDITATION

K2 Environmental Ltd is IANZ accredited for methamphetamine sampling using a surface swabbing technique. Sampling is conducted in accordance with an in-house method based on NIOSH 9111.

Recommendations and opinions expressed in this report are based on experience and knowledge of involved substances. These are not covered by accreditation.

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5 SITE MAP

The following is a map indicating where samples were collected from.

Note: This map is not to scale and is to be used as an indication only.



Figure 1 Site Map Showing Sample Locations

6 RESULTS AND RECOMMENDATIONS

The following tables detail the results of sampling for methamphetamine at the above property. Analysis of these samples has been subcontracted to an IANZ accredited laboratory, all samples were analysed using LC-MSMS (Modified method based on NIOSH9111).

Table 1: Guide to Results and Actions Recommended

Below MoH Recommended Limit ² Or No Action Needed	Precautionary Clean Recommended - as there are elevated contamination levels detected in other locations	Above MoH Recommended Limit Or Remediation Required
--	--	---

Table 2: General recommendations table

General	Initial	
	AR	AC
Items		
Air quality	Scrub+Vent	
All surfaces	HEPA	
Carpet, curtains, blinds, & wallpaper	REM	
Light fittings, switches, & electrical fixtures	REM	
Oven, appliances, & whiteware	REM	
Heat pump, heaters, & climate control appliances	REM	
Ceiling vents, fans, & extractions	REM	
Ceiling insulation (PinkBatts)	REM	
Underfloor insulation	REM	
Hot water cylinder	CLE	
Fuse board	CLE	
Notes	<ul style="list-style-type: none"> Fuse board is in the hall Extraction vents to ceiling space in bathroom and hall 	

² MoH Recommended limits are detailed in section A.7 below

Table 3: Methamphetamine results

		Initial						
Location	Item	Ref.	Area Tested	Level (µg/100cm ²)	Material	AR	Action Comp.	
Kitchen	Walls	3	Wall	1.03	GIB-P	REM		
	Ceiling				GIB-P	REM		
	Flooring				VINYL	CLE		
	Doors				WD-P	REM		
	Windows	2	Frame	9.5	WD-P	CR		
	Skirtings				WD-P	REM		
	Mouldings				WD-P	REM		
	Cabinetry				LAM	REM		
	Sink				STEEL	REM		
	Bench				STEEL	REM		
	Bench				LAM	REM		
	Walls	4	Wall	13.4	GIB-P	REM		
	Ceiling				GIB-P	REM		
Dining Room	Flooring				VINYL	REM		
	Doors				WD-P	REM		
	Windows	5	Frame	8.4	WD-P	CR		
	Skirtings				WD-P	REM		
	Mouldings				WD-P	REM		

Initial						
Location	Item	Ref.	Area Tested	Level (µg/100cm ²)	Material	Action Comp.
Lounge	Walls				WALP	REM
	Walls				GIB-P	CLE
	Ceiling	6	Ceiling	1.48	GIB-P	CLE
	Flooring				OPT	REM
	Doors				WD-P	REM
	Door Frame				WD-V	REM
	Windows	7	Frame	10.2	WD-P	CR
	Skirtings				WD-P	REM
	Mouldings				WD-P	REM
	Fireplace				WD-V	REM
	Fireplace				TILE	REM
	Walls				GIB-P	REM
	Walls				HGL	REM
	Ceiling				GIB-P	REM
Laundry	Flooring				VINYL	CLE
	Doors	1	Back Door	9.2	WD-P	REM
	Windows				WD-P	CR
	Skirtings				WD-P	REM
	Skirtings				VINYL	REM
	Mouldings				WD-P	REM
	Cabinetry				WD-P	REM
	Sink				STEEL	REM

Initial						
Location	Item	Ref.	Area Tested	Level (µg/100cm ²)	Material	Action Comp.
Toilet	Walls				GIB-P	CLE/REM
	Ceiling				GIB-P	CLE/REM
	Flooring				VINYL	CLE
	Doors				WD-P	REM
	Windows	18	Frame	6.7	WD-P	CR
	Skirtings				WD-P	REM
	Skirtings				VINYL	REM
	Mouldings				WD-P	REM
	Toilet Seat				PLSTC	REM
	Cistern				PLSTC	REM
	Toilet Bowl				CRMC	CLE/REM
	Walls				GIB-P	CLE/REM
	Walls				HGL	REM
	Ceiling				GIB-P	CLE/REM
Bathroom	Flooring				VINYL	CLE
	Doors				WD-P	REM
	Windows	17	Frame	6.7	WD-P	CR
	Skirtings				WD-P	REM
	Skirtings				VINYL	REM
	Mouldings				WD-P	REM
	Sink/Vanity				PLSTC	REM
	Bath				PLSTC	REM

Initial						
Location	Item	Ref.	Area Tested	Level ($\mu\text{g}/100\text{cm}^2$)	Material	Action Comp.
Hallway	Walls				WALP	REM
	Walls				GIB-P	CLE
	Ceiling	8	Ceiling	1.73	GIB-P	CLE
	Flooring				CPT	REM
	Doors				WD-V	REM
	Skirtings				WD-V	CLE
	Mouldings				WD-P	CLE
	Cabinetry				GIB-B	CLE
	Cabinetry				GIB-P	CLE
	Fuse Board				METAL	CLE
	Walls				WALP	REM
	Walls				GIB-P	CLE
Bedroom 1	Ceiling	10	Ceiling	1.21	GIB-P	CLE
	Flooring				CPT	REM
	Doors				WD-P	CLE
	Door Frame				WD-V	CLE
	Windows	9	Frame	2.5	WD-P	CLE
	Skirtings				WD-V	CLE
	Mouldings				WD-P	CLE
	Cabinetry				WALP	REM
	Cabinetry				GIB-P	CLE

Initial						
Location	Item	Ref.	Area Tested	Level (µg/100cm ²)	Material	Action Comp.
Bedroom 2	Walls				WALP	REM
	Walls				GIB-P	REM
	Ceiling	12	Ceiling	1.29	GIB-P	CLE
	Flooring				CPT	REM
	Doors				WD-P	REM
	Door Frame	11	Frame	18.2	WD-V	REM
	Windows				WD-P	CR
	Skirtings				WD-V	REM
	Mouldings				WD-P	REM
	Cabinetry				WALP	REM
	Cabinetry				GIB-P	REM
	Walls				WALP	REM
	Walls				GIB-P	CLE
	Ceiling	13	Ceiling	1.95	GIB-P	CLE
Bedroom 3	Flooring				CPT	REM
	Doors				WD-P	REM
	Door Frame				WD-V	CR
	Windows	14	Frame	4.3	WD-P	CR
	Skirtings				WD-V	REM
	Mouldings				WD-P	REM
	Cabinetry				WALP	REM
	Cabinetry				GIB-P	CLE

Initial						
Location	Item	Ref.	Area Tested	Level ($\mu\text{g}/100\text{cm}^2$)	Material	Action Comp.
Bedroom 4	Walls				WALP	REM
	Walls				GIB-P	CLE
	Ceiling	15	Ceiling	1.04	GIB-P	CLE
	Flooring				CPT	REM
	Doors				WD-P	REM
	Door Frame				WD-V	CR
	Windows	16	Frame	4.7	WD-P	CR
	Skirtings				WD-V	REM
	Mouldings				WD-P	REM
	Cabinetry				WALP	REM
	Cabinetry				GIB-P	CLE
	Garage	Walls				WD-B
Walls					AL-PC	NAN
Ceiling					WD-B	NAN
Flooring					CON-B	NAN
Doors		21	Side Door	0.24	AL-PC	NAN
Door Frame					WD-B	NAN

Initial						
Location	Item	Ref.	Area Tested	Level ($\mu\text{g}/100\text{cm}^2$)	Material	Action Comp.
Shed	Walls				WD-B	NAN
	Ceiling				WD-B	NAN
	Flooring				CON-B	NAN
	Doors	20	Door	<0.02	WD-B	NAN
	Windows				WD-B	NAN

7 CONCLUSION

Methamphetamine was detected above the Ministry of Health recommended level of $1.5\mu\text{g}/100\text{cm}^2$ throughout the entire dwelling.

This property therefore should not be occupied.

The garage and shed were below the recommended limit of $2.0\mu\text{g}/100\text{cm}^2$ and not directly adjoined to the dwelling so precautionary cleaning has not been recommended.

8 OTHER HAZARDS

8.1 Out of Scope

Out of Scope

8.1.1 Out of Scope

[Redacted text block]

8.1.2 Out of Scope

[Redacted text block]

8.2 Out of Scope

8.2.1 Out of Scope

[Redacted text block]



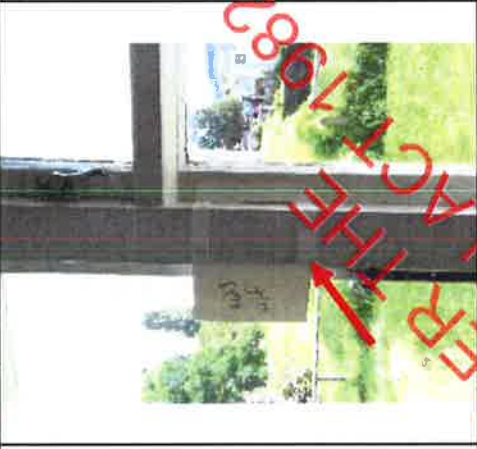
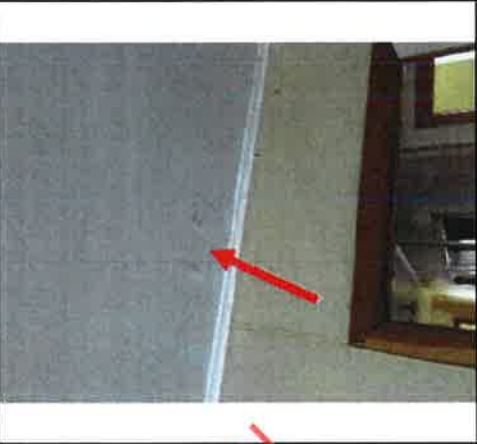




8.2.2 Out of Scope

[Redacted text block]




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9 SITE PHOTOS

			
<p>Photo 1: Bathroom</p>	<p>Photo 2: Bathroom Window Frame – 6.7µg/100cm²</p>	<p>Photo 3: Bedroom 1</p>	<p>Photo 4: Bedroom 1 Ceiling – 1.21µg/100cm²</p>
			
<p>Photo 5: Bedroom 1 Window Frame – 2.5µg/100cm²</p>	<p>Photo 6: Bedroom 2</p>	<p>Photo 7: Bedroom 2 Door Frame – 18.2µg/100cm²</p>	<p>Photo 8: Bedroom 2 Ceiling – 1.29µg/100cm²</p>


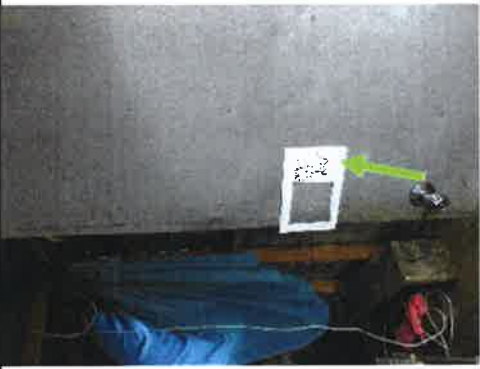



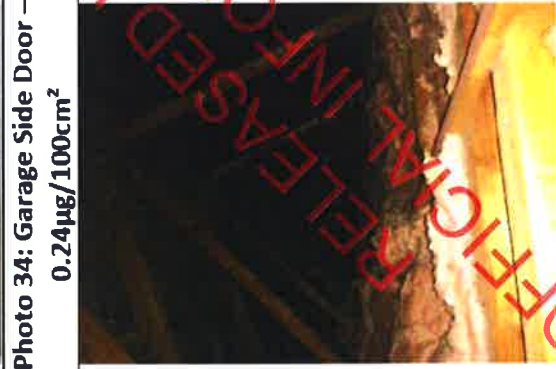

 <p>Photo 9: Bedroom 2 Drawers</p>	 <p>Photo 10: Bedroom 3</p>	 <p>Photo 11: Bedroom 3 Window Frame – 4.3µg/100cm²</p>	 <p>Photo 12: Bedroom 3 Ceiling – 1.95µg/100cm²</p>
 <p>Photo 13: Bedroom 3 Door Frame</p>	 <p>Photo 14: Bedroom 4</p>	 <p>Photo 15: Bedroom 4 Ceiling – 1.04µg/100cm²</p>	 <p>Photo 16: Bedroom 4 Window Frame – 4.7µg/100cm²</p>

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<p>Photo 17: Bedroom 4 Drug Paraphernalia</p>	<p>Photo 18: Dining Room</p>	<p>Photo 19: Dining Room Window Frame – 8.4µg/100cm²</p>	<p>Photo 20: Dining Room Wall – 13.4µg/100cm²</p>
			
<p>Photo 21: Hall</p>	<p>Photo 22: Hall Ceiling – 1.73µg/100cm²</p>	<p>Photo 23: Laundry</p>	<p>Photo 24: Laundry Back Door – 9.2µg/100cm²</p>

			
<p>Photo 25: Kitchen</p>	<p>Photo 26: Kitchen Window Frame – 9.5µg/100cm²</p>	<p>Photo 27: Kitchen Wall – 1.03µg/100cm²</p>	<p>Photo 28: Lounge</p>
			
<p>Photo 29: Lounge Window Frame – 10.2µg/100cm²</p>	<p>Photo 30: Lounge Ceiling – 1.48µg/100cm²</p>	<p>Photo 31: Toilet</p>	<p>Photo 32: Toilet Window Frame – 6.7µg/100cm²</p>

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<p>Photo 33: Garage</p>	<p>Photo 34: Garage Side Door – 0.24µg/100cm²</p>	<p>Photo 35: Underfloor Space</p>	<p>Photo 36: Shed</p>
<p>Photo 37: Shed Door – <0.02µg/100cm²</p>	<p>Photo 38: Ceiling Space</p>	<p>Photo 39: Exterior</p>	<p>Photo 40: Driveway</p>

APPENDICES

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A.1. Lab Reports

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Lab No:

A.2. K2 Environmental Testing Methodology

Sampling as carried out following the guidelines outlined in NIOSH 9111 - *Methamphetamine on wipes by Liquid Chromatography/mass Spectrometry 9111*

Sampling Procedure

- A new pair of gloves (not vinyl) are used for each sample
- Gauze which has been pre-moistened with 3-4ml of methanol is used
- A new (named) template is fixed to the sampling surface
- Each position is photographed
- The surface to be sampled is wiped with firm pressure:
 - using vertical strokes followed by
 - horizontal strokes, then folded again by and then followed by
 - Vertical strokes and horizontal strokes the gauze is then folded with the pad, exposed side in, and placed in shipping container & sealed.
- Each sample clearly Labeled with a unique sample identifier.
- Documentation is completed and samples sent for analysis via courier as soon as practicable.

Blank Samples

A field blank is included with each set of samples for all comprehensive testing.

Sample Site Selection

In each room to be sampled the following strategy used to select sampling points:

- High points (fume rises and condenses at higher levels such as ceilings) these are also less likely to have been cleaned
- Areas around windows which are cooler this is where fume is likely to condense
- Painted and varnished surfaces have higher recovery rates
- Hard non-porous surfaces such as benchtops, ranges, range hoods, tiles and glass surfaces. (these will have higher concentrations if present as fume will not have been absorbed)

Areas Less Likely to be Sampled (Due to Low Recovery Rates)

- Porous surfaces such as non-vinyl coated wall papers
- Bare wood surfaces
- Pinex walls and tiles (especially if not painted)
- Fabrics, carpets and other furnishings

Recovery Using Methanol Swabs

Surface	Methanol Recovery
Unpainted Dry wall	0.41%
Painted Drywall	74%
Unpainted Plywood	5.7%
Glass	53%
Metal	90%
Tile	12%
Carpet	1.3%

A.3. Table of Materials Abbreviations

Material	Abbreviation for Tester Table
Aluminium	AL
Aluminium - Powder Coated	AL-PC
Brick – Bare	BRK-B
Brick - Painted	BRK-P
Building Paper	BP
Carpet	CPT
Cement Sheet	CMNTS
Ceramic	CRMC
Concrete - Bare	CON-B
Concrete - Painted	CON-P
Cinder Block - Bare	CIND-B
Cinder Block - Painted	CIND-P
GIB – Bare	GIB-B
GIB - Painted	GIB-P
Hardboard - Painted	HRDB-P
Hardboard - Varnished	HRDB-V
Hardiglaze	HGL
Lathe and Plaster – Bare	L&P-B
Lathe and Plaster - Painted	L&P-P
Laminate	LAM
Pinex	PINEX
Plastic	PLSTC
Soft-board Ceiling Tile	SCT
Stainless Steel	STEEL
Stipple	STIPPLE
Tiles	TILE
Tin	TIN
Vinyl/Lino	VINYL
Wallpaper	WALP
Wallpaper - Vinyl	WALP-V
Wallpaper - Painted	WALP-P
Wood - Bare	WD-B
Wood - Painted	WD-P
Wood - Varnished	WD-V
Wood - Stained	WD-S
Not Applicable	NA
Not Identified	NI

A.4. Table of Recommended Actions Abbreviations

AR (Action Recommended)	Abbreviation for Tester Table
Triple clean - Recommended	CLE
Triple Clean - Required	CLE
Item to be removed	REM
Remove coating (e.g. paint/varnish)	CR
Remove item or remove coating (e.g. paint/varnish)	REM/CR
No action needed	NAN

A.5. Table of Actions Completed Abbreviations

AC (Action Completed)	Abbreviation for Tester Table
Clean with sugar soap – <i>decon. team must advise if any alternative cleaning products used so a new code can be generated, decon. team must inform testers if using anything other than sugar soap for a specific property</i>	CLE
Item removed	REM
Coating (e.g. paint/varnish) fully removed	CR-F
Coating partially removed	CR-P
Not Completed	NC
Not Applicable	NA

Out of Scope

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A.7. Ministry of Health recommended limits

Ministry of Health Recommended limits	
Clandestine Methamphetamine Laboratory	0.5µg/100cm ²
Non-Laboratory (use only suspected) with soft furnishings	1.5µg/100cm ²
Non-Laboratory (use only suspected) without soft furnishings	2.0µg/100cm ²

