

4151 N. Mulberry Dr, Suite 275 Kansas City, MO 64116 Telephone: 816.231.5580 Fax: 816.231.5641 www.occutec.com

December 5, 2012

Mr. David Hartshorn, GSA Heartland Region Certified Industrial Hygienist Facilities Management Division 6PF 1500 East Bannister Road, Room 2101 Kansas City, Missouri 64131-3088

### RE: Goodfellow Federal Complex – St. Louis, MO Building #102D (MO0604AF) – Background Asbestos Air Monitoring Project # 92084.04

Dear Mr. Hartshorn:

On November 20, 2012, Ms. Patricia Garcia of OCCU-TEC, conducted background asbestos air monitoring services at the Goodfellow Federal Complex, Building 102D, located at 4300 Goodfellow Boulevard in St. Louis, Missouri. A recently completed asbestos inspection had identified asbestos containing floor tiles, pipe insulation, and drywall in "poor" condition at several locations. OCCU-TEC performed asbestos background air monitoring to ensure airborne asbestos had not migrated to other areas of the building. For this reason, transmission electron microscopy (TEM) background air samples were run in various areas of the building.

OCCU-TEC collected six TEM background air samples throughout the building. The samples were shipped via UPS to Bureau Veritas – North America (BV) in Kennesaw, Georgia for independent laboratory analysis.

TEM analysis procedures are specified in the National Institute of Occupational Safety and Health, Protocol 7402. TEM samples were collected on 25 millimeter, 0.45-micron pore size mixed cellulose ester membrane filters. TEM analysis is able to distinguish between asbestos fibers and non-asbestos fibers and records actual levels of airborne asbestos fibers. TEM can also distinguish the different types of airborne asbestos fibers.

Laboratory TEM air monitoring results indicate no asbestos structures were detected. Sampling was in accordance with EPA CFR Part 763 Appendix A to Subpart E. Air monitoring analysis sheets and laboratory analysis sheets are attached.

Respectfully, (b) (6)

Jeff T. Smith Senior Project Manager

Attached:

TEM Analysis of Air Samples\ Laboratory Analysis



#### TEM ANALYSIS OF AIR SAMPLES

4151 North Mulberry Drive, Suite 275 Kansas City, Missouri 64116 (816) 231-5580 Toll Free: (800) 950-1953 Fax: (816) 231-5641

		OCCU-TEC Project # :		92084.04
CLIENT NAME:	GSA	Sample Date:	11/20/2012	
ADDRESS:	1500 E. Bannister, KCMO, 64197	Analysis Date:	12/4/2012	
PROJECT NAME:	GSA Background Asbestos TEM Air Monitoring - Goodfellow #102D	Report Date:	12/5/2012	
		Rotometer #		PJG

FILTER TYPE: 25mm, 0.4	15 um			umn Elow Pato (I/min)									
Client	Activity/	Sample	Pump	Flov	w Rate (I/	min)	Runnir	ng Time	Total	Volume	# Asbestos	Asbestos	Concentration
Sample ID	Location	Туре	ID	Start	End	Avg	Start	Stop	Minutes	Liters	Stuctures	Structures/mm <sup>2</sup>	Structures/cc
90284-04-001	1st FL South End	BGD	317	10.17	10.17	10.17	9:18	12:37	199	2023.8	0	<22.00	<0.0042
90284-04-002	1st FL Dark Room	BGD	345	10.17	10.17	10.17	9:25	12:35	190	1932.3	0	<22.00	<0.0044
90284-04-003	1st FL North Office	BGD	341	10.17	10.17	10.17	9:30	12:40	190	1932.3	0	<22.00	<0.0044
90284-04-004	2nd FL North End	BGD	344	10.17	10.17	10.17	9:40	12:30	170	1728.9	0	<22.00	<0.0050
90284-04-005	2nd FL South End	BGD	286	10.17	10.17	10.17	9:43	12:33	170	1728.9	0	<22.00	<0.0050
90284-04-006	Outdoor	BGD	346	10.17	10.17	10.17	10:00	12:00	120	1220.4	0	<15.00	<0.0047

SAMPLE TYPE

PRS=personal IWA=inside work area BLK= blank OWA= outside work area ICL=inside clearance OCL=outside clearance BGD=background NAE=negative air exhaust ACTIVITY

PREP=site prep. BGLO=bag load out GLBG=glovebag CLN=clean up GREM=gross removal EXC=excursion RESPIRATOR TYPE

HM=half mask	APR=air purifying resp.
FF=full face	SA=supplied air
P=powered	PD=pressure demand
SCBA=self contained breat	hing apparatus

Sampled By: Pat Garcia

F:\SHARE\CLIENT\GSA Heartland Region\2012\92084 Background TEM Air Monitoring\Goodfellow 102D (MO0604AF)\Goodfellow 102D TEM Analysis of Air Samples - with Formulas (new

Certificate Number: 7011090612MOIR11347

Training Date: 9/6/2012

10/2/2013

Expiration Date

### Missouri State Certificate for Asbestos Related Occupations

issued by Department of Natural Resources P.O. Box 176 Jefferson City, MO 65102 Phone (573) 751-4817

# Patricia J. Garcia

has successfully completed the requirements for certification as a INSPECTOR. This Missouri State Certification is subject to review and the director may deny, suspend or revoke the certification per

(b) (6)

RSMo chapter 643.230.

10/3/2012

Date





Director of Air Pollution Control Program



December 04, 2012

Jeff Smith OCCU-TEC INC. 6501 E. Commerce Suite 230 Kansas City, MO 64120-

Bureau Veritas Work Order No. A1211211

Reference: 92084.04 Building 102 D

Dear Jeff Smith:

Bureau Veritas North America, Inc. received 6 samples on November 27, 2012 for the analyses presented in the following report.

The results apply only to the samples analyzed in this project. Please note that any unused portion of the samples will be discarded after a sixty-day holding period, unless you have requested otherwise.

This material is confidential and is intended solely for the person to whom it is addressed. If this is received in error, please contact the number provided below.

We appreciate the opportunity to assist you. If you have any questions concerning the report, please contact the analyst whose name appears on the report or myself at (770) 499-7701.

Sincerely, (b) (6)

Kuntal Parikh Senior Microscopist Electronic signature authorized through password protection

### Bureau Veritas North America, Inc.

Health, Safety, and Environmental Services 3380 Chastain Meadows Parkway, Suite 300 Kennesaw, GA 30144 Main: (770) 499-7701 Fax: (770) 499-7511 www.us.bureauveritas.com



### CASE NARRATIVE

**Date:** 04-Dec-12

CLIENT: OCCU-TEC INC.

**Project:** 92084.04 Building 102 D

Work Order No A1211211

# ANALYTICAL METHOD FOR AIRBORNE ASBESTOS FIBERS USING TRANSMISSION ELECTRON MICROSCOPY (TEM) BY THE AHERA METHOD

The results of this report relate only to the samples listed in the body of this report.

Unless otherwise noted below, the following statements apply: 1) all samples were received in acceptable condition, 2) all quality control results associated with this sample set were within acceptable limits and/or do not adversely affect the reported results and 3) the industrial hygiene results have not been blank corrected.

Upon receipt in the laboratory, filters are transferred to a glass slide with a drop of dimethyl formamide/acetic acid clearing solution. After clearing, samples are partially ashed in a plasma asher. The filters are then carbon coated in a vacuum evaporator. Portions of the cleared/ashed/coated filters are excised and placed on 200-mesh copper TEM grids in a wick-type solutional washer containing 100% acetone.

Two grids are placed consecutively in the TEM for examination. An equal number of openings are examined on each grid at 15,000X magnification. Asbestos structures containing fibers which meet a >5:1 length:width aspect ratio and a minimum length of 0.5 micrometers are identified using morphology, selected area electron diffraction, and energy-dispersive x-ray spectroscopy. Fibers are classified by structure type, are sized (length and width), and are identified as chrysotile, amphibole, ambiguous, or non-asbestos. Results are reported as total asbestos structures per square millimeter of filter and asbestos structures per cubic centimeter of air (asbestos structures/cc). The Kennesaw, Georgia laboratory is accredited by NVLAP –Lab Code 101125-0.

For clearance of a work area in schools (k-12) the requirement is that the average of the results of the five inside samples is <70 str/mm2 assuming an analytical sensitivity of <0.005 structures/cubic centimeter.

The test report shall not be reproduced, except in full, without written approval of the laboratory. In addition, the report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

References



**CLIENT:** OCCU-TEC INC.

**Project:** 92084.04 Building 102 D

Work Order No A1211211

USEPA. 1987. Asbestos Hazard Emergency Response Act. Appendix A to 40 CFR 763, Subpart E. Washington: GPO. (AHERA protocol).



#### Client: OCCU-TEC INC.

Client Reference No.: 92084.04 Building 102 D

Work Order No.: A1211211

Analytical Method: TEM AHERA Sample Type: Air **Date:** 04-Dec-12

 Date Received:
 11/27/2012 4:11:53 PM

 Report Date:
 12/4/2012 4:59:53 PM

 Grid Opening Size:
 0.0112 mm²

		Reporting	Total	Stru	ctures Counted	1	Total Asbestos				95 % Confidence Limit	
Lab Sample No.	Client Sample ID	Limit (s/mm²)	Asbestos (s/mm <sup>2</sup> )	Chrysotile	Amphibole	Total	Chrysotile (s/cc)	Amphibole (s/cc)	Total (s/cc)	Sensitivity (s/cc)	Confid Low	ence Limit High
A1211211-001A	01-1st Floor South End	1			÷			. /	<u>``</u>	· · ·		
		22	< 22	0	0	0	< 0.0042	< 0.0042	< 0.0042	0.0042	0	< 0.019
A1211211-002A	02-1st Floor Dark Room	m										
		22	< 22	0	0	0	< 0.0044	< 0.0044	< 0.0044	0.0044	0	< 0.020
A1211211-003A	03- 1st Floor N. Office	•										
		22	< 22	0	0	0	< 0.0044	< 0.0044	< 0.0044	0.0044	0	< 0.020
A1211211-004A	04- 2nd Floor North En	d										
		22	< 22	0	0	0	< 0.0050	< 0.0050	< 0.0050	0.0050	0	< 0.022
A1211211-005A	05- 2nd Floor South En	d										
		22	< 22	0	0	0	< 0.0050	< 0.0050	< 0.0050	0.0050	0	< 0.022
A1211211-006A	06- Outdoor											
		15	< 15	0	0	0	< 0.0047	< 0.0047	< 0.0047	0.0047	0	< 0.021

MCEF: Mixed Cellulose Ester Filter

s/mm<sup>2</sup>: Structures per square millimeter

s/cc: Structures per cubic centimeter of air collected.
<: Result is less than the indicated limit of detection.</pre>

"--" : No Results (Air Volume is 0)

Note 1: AHERA Structures counted contain fibers which met  $a \ge 5:1$  (length:width) aspect ratio and were  $\ge 0.5$ um in length.

Note 2: AHERA sampling criteria requires that >1200 liters of air be collected on 0.45um filters. Deviation from these requirements

Note 3: Yamate Level II Structures counted contain fibers which meet  $a \ge 3:1$  (length:width) aspect ratio.

(b) (6)

Analyst(s) Name/Date:

12/4/2012



Client Reference No.: 92084.04 Building 102 D         Work Order No.:       A121121       Date:       Pd-Dec-12         Analytical Method:       TEM AHERA       Filtration Filter:       MCE Filter, .45um         Sample Type:       Air       Effective Filter Area:       385 mm²         Date Received:       11/27/2012 4:11:53 PM       Grid Opening Size:       0.0112 mm²         Report Date:       12/4/2012 4:59:53 PM       Date       Prep       Air       Dilution       Analysis       Analysis       Grid I         A1211211-001A       01-1st Floor South End       11/20/12       12/04/12       2024       1       12/04/12       KRP       12/04/12         A1211211-001A       01-1st Floor South End       11/20/12       12/04/12       2024       1       12/04/12       Sensitivity       95 % Confidence Li         Aabestos       4       22       <22		Client:	OCCU-TE	EC INC.										
Work Order No.:A121121Date: $04-Dec-12$ Analytical Method:TEM AHERAFiltration Filter:MCE Filter, .45umSample Type:AirEffective Filter Area: $385 mm^2$ Date Received: $11/27/2012 4:11:53 PM$ Grid Opening Size: $0.0112 mm^2$ Report Date: $12/4/2012 4:59:53 PM$ $11/20/12$ $2024$ $1$ Lab SampleClient SampleDatePrepAirDilutionNo.IdentificationSampledDatePrepAirDilutionA1211211-001A01-1st Floor South End $11/20/12$ $12/04/12$ $2024$ $1$ $12/04/12$ KRPAnalysisGrid Method:Image: Counted KernerChry- Amph- sotileChrysotileAmphiboleTotalAsbestosAbbestos422<2200<00042<000420<0042MateriaGrid Opening IDCountLengthWidthStructureStructureMateriaRecGrid Opening IDCountLengthWidthStructureStructureMateriaAbbestos422<2200<00042<000420<001A1C4A00.000.00None Detected00<0042003A2C4A00.000.00None Detected00<004A2C4C00.000.00None Detected00	Client Refere	ence No.:	92084.04 E	Building 102	2 D									
Analytical Method:       TEM AHERA       Filtration Filter:       MCE Filter, .45um         Sample Type:       Air       Effective Filter Area: $385  mm^2$ Date Received:       11/27/2012 4:11:53 PM       Grid Opening Size: $0.0112  mm^2$ Report Date:       12/4/2012 4:59:53 PM       Date       Prep       Air       Dilution       Analysis       Grid I         A1211211-001A       01-1st Floor South End       11/20/12       12/04/12       2024       1       12/04/12       KRP       12-04-1         @ 12:00 am       @ 8:50 am       Grid I       Amalysis       Grid I       Grid I       11/20/12       KRP       12-04-1         Asbestos       4       22       <22       0       0       <0.0042       <0.0042       0.0042       0.0042       <0.0042         Asbestos       4       22       <22       0       0       <0.0042       <0.0042       0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0042       <0.0	Work Or	der No.:	A1211211								Dat	t <b>e:</b> 04-Dec	-12	
Sample Type:AirEffective Filter Area: $385  mm^2$ Date Received: $11/27/2012 4:11:53  PM$ Grid Opening Size: $0.0112  mm^2$ Report Date: $12/4/2012 4:59:53  PM$ $24/2012 4:59:53  PM$ Grid ILab SampleClient SampleDatePrepAirDilutionAnalysisGrid IA1211211-001A01-1st Floor South End $11/20/12$ $12/04/12$ $2024$ 1 $12/04/12$ KRP $12-04-1$ $analysisGridLimitAsbestosGridTotalAsbestosee4:19  pmee4:19  pmabestos422<22$	Analytical	Method:	TEM AHE	RA						Filtra	tion Filt	er: MCE F	Filter, .45um	l
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Samj	ple Type:	Air						Eff	fective F	ilter Are	ea: 38	5 mm <sup>2</sup>	
Report Date: $12/4/2012 4:59:53 \text{ PM}$ Lab Sample No.Client Sample IdentificationDate SampledPrep DateAir Vol. (L)Dilution FactorAnalysis DateGrid I AnalysiA1211211-001A01-1st Floor South End Openings Counted11/20/12 (s/mm²)12/04/12 Openings2024112/04/12 (s/cc)KRP12-04-1 (g/cc)MathematicationGrid (s/mm²)Structures Counted (s/mm²)Total ChrysoileStructures Counted (s/cc)Total Asbestos (s/cc)95 % Confidence L LowMathematicationGrid (s/mm²)Structures Counted (s/mm²)Total ChrysoileStructures Counted (s/cc)Total (s/cc)Sensitivity (s/cc)95 % Confidence L LowLow HiAsbestos422<22	Date I	Received:	11/27/2012	2 4:11:53 PN	1				C	Grid Ope	ening Siz	ze: 0.011	2 mm²	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Rep	ort Date:	12/4/2012	4:59:53 PM										
A1211211-001A01-1st Floor South End $11/20/12$ (@12:00 am $12/04/12$ (@8:50 am $2024$ 1 $12/04/12$ (@4:19 pmKRP $12-04-1$ (@4:19 pm $A1211211-001A$ Openings Openings CountedTotal Limit (s/mm²)Asbestos (s/mm²) $and bestos(s/mm²)and bestos(s/mm²)and bestos(s/mm²)and bestos(s/mm²)and bestos(s/mr²)and bestos(s/cc)and b$	Lab Sampl No.	e	Client Sa Identifica	imple ation	Sa	Date Impled	Pre Dat	ep te	Air Vol. (L)	Dilut Fact	ion A or	Analysis Date	Analyst	Grid Box Identification
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Asbestos         4         22         < 22         0         0         < 0.0042         < 0.0042         < 0.0042         0         < 0.0042         0         < 0.0042         < 0.0042         0         < 0.0042         0         < 0.0042         0         < 0.0042         0         < 0.0042         0         0         < 0.0042         < 0.0042         0.0042         0         0         < 0.0042         0         0         < 0.0042         0         0.0042         0.0042         0.0042         0.0042         0.0042	Analysis	Oper Cou	nings Limit inted (s/mm <sup>2</sup> )	Asbestos ) (s/mm <sup>2</sup> )	Chry- sotile	Amph- ibole	Total	Chrysot (s/cc)	tile Amp	hibole (cc)	Total (s/cc)	Sensitivity (s/cc)	y 95 % Co Low	onfidence Limit High
TEM Count DetailsRecGridLengthWidthStructureStructureMaxRecGridOpening IDCount(um)(um)IDTypeEDS(ng1A1C4A00.000.00None Detected00002A1C4C00.000.00None Detected0003A2C4A00.000.00None Detected004A2C4C00.000.00None Detected0	Asbestos		4 22	< 22	0	0	0	< 0.004	42 < 0.	0042	< 0.0042	0.0042	0	< 0.019
RecGridLengthWidthStructureStructureStructureMa1A1C4A00.000.00None Detected02A1C4C00.000.00None Detected03A2C4A00.000.00None Detected04A2C4C00.000.00None Detected0						ТЕ	М Сош	nt Deta	ils					
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1       A1       C4A       0       0.00       0.00       None Detected       0         2       A1       C4C       0       0.00       0.00       None Detected       0         3       A2       C4A       0       0.00       0.00       None Detected       0         4       A2       C4C       0       0.00       0.00       None Detected       0	Rec Grid	l Openir	ng ID Cour	nt (um)	(u	m)		ID		T	ype	]	EDS	(ng)
2       A1       C4C       0       0.00       0.00       None Detected       0         3       A2       C4A       0       0.00       0.00       None Detected       0         4       A2       C4C       0       0.00       0.00       None Detected       0	1 A1	C4.	A 0	0.00	0.	00	Non	e Detec	ted					0
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	4 A2	C4	C 0	0.00	0.	00	Non	e Detec	ted					0
Total Fibers:0Total Mass:0		Total Fi	ibers: 0										Total Ma	<b>ss:</b> 0
TEM Microscope Documentation Accelerating					TE	M Micr Accelera	oscope ating	Docum	entation					
Instrument *Magnification Voltage Calibration Date		Instrume	ent	*Magnifi	cation	voltag	ge (	Calibrat	ion Date					
TEM 1/D675 14590x 100 KeV 11/8/2012		TEM 1/D	675	14590	)x	100 Ke	eV	11/8/	2012					



		Chent:	0000-11	LC INC.										
Client R	Referen	ce No.:	92084.04 1	Building 10	2 D									
Wo	rk Ord	ler No.:	A1211211								Date	<b>:</b> 04-Dec	c-12	
Anal	ytical N	Method:	TEM AHE	RA						Filtrat	ion Filter	: MCE I	Filter, .45ur	n
	Sampl	e Type:	Air						Eff	ective Fi	lter Area	: 38	35 mm²	
J	Date Re	eceived:	11/27/2012	2 4:11:53 PI	M				G	rid Ope	ning Size	: 0.011	2 mm <sup>2</sup>	
	Repo	rt Date:	12/4/2012	4:59:53 PM										
Lab S	Sample		Client Sa	mple		Date	Prep	)	Air	Diluti	on Ar	nalysis		Grid Box
N	Jo.		Identific	ation	Sa	mpled	Date	e Vo	ol. (L)	Facto	or ]	Date	Analyst	Identification
A12112	11-002	A 02-	1st Floor I	Dark Room	11 @1	/20/12 2:00 am	12/04/ @8:50	12 1 am	932	1	12 @4	/04/12 :19 pm	KRP	12-04-12B-1
		Gric	l Reporti	ng Total	Stru	ctures Cou	nted			Total Asb	estos			
А	analysis	Openin Count	ngs Limit ed (s/mm <sup>2</sup>	Asbestos ) (s/mm <sup>2</sup> )	Chry- sotile	Amph- ibole	Total	Chrysotile (s/cc)	Ampł (s/c	nibole cc)	Total (s/cc)	Sensitivit (s/cc)	y 95 % C Low	onfidence Limit High
Asbestos	8	4	22	< 22	0	0	0	< 0.0044	< 0.0	)044	< 0.0044	0.0044	0	< 0.020
						TE	M Coun	t Details						
		Grid		Lengt	h Wi	idth	Sti	ructure		Strue	cture			Mass
Rec	Grid	Opening	ID Cou	nt (um)	(u	m)		ID		Ту	pe		EDS	(ng)
1	B1	C4A	0	0.00	0.	00	None	Detected	1					0
2	<b>B</b> 1	C4C	0	0.00	0.	00	None	Detected	1					0
3	B2	C4A	0	0.00	0.	00	None	Detected	1					0
4	B2	C4C	0	0.00	0.	00	None	Detected	1					0
		Total Fib	<b>ers:</b> 0										Total Ma	ass: 0
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	<u> </u>	Instrumen	t 75	*Magnifi	cation	100 1/2	$\frac{c}{v}$	alibration	1 Date					
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		Client:	OCCU-TEC	C INC.										
Client <b>F</b>	Referen	ice No.:	92084.04 Bu	ilding 102	2 D									
Wo	rk Ord	ler No.:	A1211211								Date	: 04-Dec	<i>z-12</i>	
Anal	ytical N	Method:	FEM AHER	A						Filtratio	on Filter	: MCE H	Filter, .45un	1
	Sampl	e Type:	Air						Effe	ective Fil	ter Area	: 38	85 mm <sup>2</sup>	
]	Date Re	eceived:	1/27/2012 4	4:11:53 PN	1				G	rid Open	ing Size	: 0.011	2 mm <sup>2</sup>	
	Repo	rt Date:	12/4/2012 4:	59:53 PM										
Lab S N	Sample No.		Client Sam Identificat	iple	l Sa	Date mpled	Prej Dat	p e Vo	Air ol. (L)	Dilutio Factor	n Ar	nalysis Date	Analyst	Grid Box Identification
A12112	11-003	A 03	- 1st Floor N	I. Office	11. @12	/20/12 2:00 am	12/04 @8:50	/12 1 am	932	1	12 @4	/04/12 :19 pm	KRP	12-04-12B-1
		Grid	Reporting	Total	Stru	ctures Cou	nted			Total Asbe	stos			
A	nalysis	Openir Count	ed (s/mm²)	Asbestos (s/mm <sup>2</sup> )	Chry- sotile	Amph- ibole	Total	Chrysotile (s/cc)	Amph (s/c	ibole c)	Total (s/cc)	Sensitivity (s/cc)	y 95 % C Low	onfidence Limit High
Asbestos	8	4	22	< 22	0	0	0	< 0.0044	< 0.0	044 <	0.0044	0.0044	0	< 0.020
						TE	M Cour	nt Details						
		Grid		Length	n Wi	dth	St	ructure		Struc	ture			Mass
Rec	Grid	Opening	ID Count	(um)	(ui	n)		ID		Typ	be		EDS	(ng)
1	C1	C4A	0	0.00	0.0	00	None	e Detected	1					0
2	C1	C4C	0	0.00	0.0	00	None	e Detected	1					0
3	C2	C4A	0	0.00	0.0	00	None	e Detected	1					0
4	C2	C4C	0	0.00	0.	00	None	e Detected	1					0
		Total Fib	e <b>rs:</b> 0										Total Ma	<b>ss:</b> 0
					TE	M Micr	oscope	Documer	itation					
		Instrumen	t	*Magnifi	cation	Voltag	ge C	Calibration	n Date					
	Г	TEM 1/D67	'5	14590	)x	100 Ke	eV	11/8/20	12					



		Client: O	CCU-TEC	INC.										
Client F	Referen	ce No.: 92	084.04 Bu	ilding 102	2 D									
Wo	rk Ord	er No.: Al	211211								Da	te: 04-De	c-12	
Anal	lytical M	Iethod: TH	EM AHER	4						Filtra	tion Fil	ter: MCE	Filter, .45u	n
	Sample	e Type: Ai	r						Eff	ective F	Filter Ar	rea: 38	85 mm²	
]	Date Re	ceived: 11	/27/2012 4	:11:53 PN	Л				G	rid Ope	ening Si	ze: 0.01	12 mm²	
	Repor	rt Date: 12	/4/2012 4::	59:53 PM										
Lab S N	Sample No.		Client Sam Identificati	ple on	Sa	Date mpled	Pre Dat	p e V	Air Vol. (L)	Dilut Fact	tion tor	Analysis Date	Analyst	Grid Box Identificatio
A12112	11-004	A 04-21	nd Floor No	orth End	11 @1	/20/12 2:00 am	12/04 @8:50	/12 ) am	1729	1	(	12/04/12 @4:19 pm	KRP	12-04-12B-
		Grid	Reporting	Total	Stru	ctures Cou	nted			Total As	bestos			
А	analysis	Openings Counted	Limit (s/mm²)	Asbestos (s/mm <sup>2</sup> )	Chry- sotile	Amph- ibole	Total	Chrysoti (s/cc)	le Ampl (s/	nibole cc)	Total (s/cc)	Sensitivit (s/cc)	ty 95 % C Low	Confidence Limit High
Asbestos	8	4	22	< 22	0	0	0	< 0.005	0 < 0.0	0050	< 0.0050	0.0050	0	< 0.022
						ТЕ	M Cou	nt Detai	ls					
		Grid		Length	n Wi	dth	S	tructure		Stru	icture			Mass
Rec	Grid	Opening II	D Count	(um)	(u	m)		ID		Т	уре		EDS	(ng)
1	D1	C4A	0	0.00	0.	00	Non	e Detect	ed					0
2	D1	C4C	0	0.00	0.	00	Non	e Detect	ed					0
3	D2	C4A	0	0.00	0.	00	Non	e Detect	ed					0
4	D2	C4C	0	0.00	0.	00	Non	e Detect	ed					0
		Total Fiber	s: 0										Total Ma	ass: 0
					TE	M Micr Accelera	oscope ting	Docume	entation					
	]	Instrument		*Magnifi	cation	Voltag	ge (	Calibratio	on Date					
	т	EM 1/D675		1/1500	)v	100 V	W	11/0/7	012					



		Client: O	CCU-TEC	INC.										
Client F	Referen	ce No.: 92	084.04 Bu	ilding 102	2 D									
Wo	rk Ord	er No.: A	1211211								Dat	<b>e:</b> 04-Dec	<i>:-12</i>	
Anal	lytical N	Aethod: TI	EM AHER	A						Filtrat	ion Filte	er: MCE F	Filter, .45un	n
	Sample	e Type: Ai	r						Eff	ective F	ilter Are	ea: 38	35 mm <sup>2</sup>	
]	Date Re	ceived: 11	/27/2012 4	:11:53 PN	Л				G	rid Ope	ning Siz	ze: 0.011	2 mm <sup>2</sup>	
	Repor	rt Date: 12	/4/2012 4::	59:53 PM						_	-			
Lab S	Sample		Client Sam	ple		Date	Pre	D	Air	Dilut	ion A	Analysis		Grid Box
Ν	No.		Identificati	on	Sa	mpled	Dat	e Vo	ol. (L)	Fact	or	Date	Analyst	Identificatio
A12112	11-005	A 05-2	nd Floor So	outh End	11 @1	/20/12 2:00 am	12/04 @8:50	/12 1 am	729	1	1 @	2/04/12 24:19 pm	KRP	12-04-12B-
		Grid	Reporting	Total	Stru	ictures Cou	nted			Total Ast	oestos			
A	analysis	Openings Counted	Limit (s/mm²)	Asbestos (s/mm²)	Chry- sotile	Amph- ibole	Total	Chrysotile (s/cc)	e Ampl (s/c	nibole cc)	Total (s/cc)	Sensitivity (s/cc)	y 95 % C Low	onfidence Limit High
Asbestos	8	4	22	< 22	0	0	0	< 0.0050	< 0.0	050	< 0.0050	0.0050	0	< 0.022
						TE	M Cour	nt Details	3					
		Grid		Length	n Wi	idth	St	ructure	,	Stru	cture			Mass
Rec	Grid	Opening I	D Count	(um)	(u	m)		ID		Ту	/pe		EDS	(ng)
1	E1	C4A	0	0.00	0.	00	None	e Detecte	d					0
2	E1	C4C	0	0.00	0.	00	None	e Detecte	d					0
3	E2	C4A	0	0.00	0.	00	None	e Detecte	d					0
4	E2	C4C	0	0.00	0.	00	None	e Detecte	d					0
		Total Fiber	s: 0										Total Ma	ass: 0
					TE	M Micr Accelera	oscope ting	Documer	ntation					
	]	Instrument		*Magnifi	cation	Voltag	ge C	Calibratio	n Date					
	Т	EM 1/D675		14590	)x	100 Ke	eV	11/8/20	)12					



		Client:	000	CU-TEC	INC.										
Client <b>F</b>	Referei	nce No.:	9208	4.04 Bu	ilding 102	2 D									
Wo	rk Oro	ler No.:	A12	11211								Date:	04-Dec	-12	
Ana	ytical	Method:	TEM	I AHERA	4						Filtration	Filter:	MCE F	ilter, .45um	
	Samp	le Type:	Air							Effe	ective Filter	Area:	38	5 mm²	
	Date R	eceived:	11/2	7/2012 4	:11:53 PN	1				G	rid Opening	Size:	0.011	2 mm²	
	Repo	ort Date:	12/4/	/2012 4:5	59:53 PM										
Lab S N	Sample No.	:	Cli Ide	ent Sam entificati	ple on	Sa	Date ampled	Prej Dat	p A e Vol	Air . (L)	Dilution Factor	Ana D	alysis ate	Analyst	Grid Box Identification
A12112	11-006	5A	06	5- Outdo	or	11 @1	/20/12 2:00 am	12/04 @8:50	/12 12 am	220	1	12/0 @4:1	)4/12 19 pm	KRP	12-04-12B-1
A	analysis	Gr Oper Cou	id l iings nted	Reporting Limit (s/mm <sup>2</sup> )	Total Asbestos (s/mm²)	Stru Chry- sotile	actures Cou Amph- ibole	nted Total	Chrysotile (s/cc)	Amph (s/c	Total Asbestos ibole Tot c) (s/c	al c)	Sensitivity (s/cc)	/ 95 % Co Low	nfidence Limit High
Asbesto	8	6	j	15	< 15	0	0	0	< 0.0047	< 0.0	047 < 0.0	047	0.0047	0	< 0.021
							TE	M Cour	nt Details						
Rec	Grid	Gric Openin	l g ID	Count	Length (um)	n Wi (u	idth m)	St	ructure ID		Structure Type	e	I	EDS	Mass (ng)
1	A6	C4A	A	0	0.00	0.	.00	Non	e Detected						0
2	A6	C40	2	0	0.00	0.	.00	Non	e Detected						0
3	A6	E4A	4	0	0.00	0.	.00	Non	e Detected						0
4	A7	C40	2	0	0.00	0.	.00	Non	e Detected						0
5	A7	E4A	4	0	0.00	0.	.00	Non	e Detected						0
6	A7	E40	2	0	0.00	0.	.00	Non	e Detected						0
		Total Fi	bers:	0										Total Mas	s: 0
		Instrume	nt		*Magnifi	TE cation	C <b>M Micr</b> Accelera Voltag	oscope ting ge C	<b>Document</b> Calibration	t <b>ation</b> Date					
	-	FEM 1/De	575		14590	)x	100 Ke	eV	11/8/201	12					

\*Magnification = Calibrated screen magnification at 15,000X. For ISO Method 10312 the calibrated screen magnification is at 20,000X

(b) (6)

•	.04		4:13 PM	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	P.O. No. PJ2F0054 artland Bannister Road Kansas City, MO 64197	e are these from? Groundwater	ANALYSIS REQUESTED steach analytes on the lines below, multiple analytes per line) Leg by TEM Air Alturua Alturua Date/Time IIIZEIIZ Date/Time IIIZEIIZ Canadian Clients (Explain) Canadian Clients Vindsor, ON NBX 121 Visit our Website: Wow us, bureauvertias, conn/hse	
I <u>MPORTANT</u> Date results required Rush charges authonized? Yes Fax or E-ma E-mail Address:	A     Send invoice to:       Name     David He       Name     Company       Company     GSA Hee       Address     1500 E. I       City, State, Zip	Soil samples only: Which stat Water samples are: Drinking water Wastewater	Air Volume # of (Liters) Jars (Li (Liters) Jars AS (1932 1932 1932 1932 1932 1929 1929 Collector's Signature (Collector's Signature)) (Collector's Signature)) (	
t for Laboratory cal Services rica, Inc.	Client Project Number: 9 20 8 <sup>th</sup> berry, Suite 275 , MO 64116 21 Fax No. 816-231-56	ry requirements: stos Aur Testing Services	Date     Time       Sampled     Sampled     Matrix/Media       11/20/19     9:13     11/7       11/20/19     9:30     11/2       11/20/19     9:30     11/2       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:00       11/20/19     10:00     10:01       11/20/10     10:00     10:01       11/20/10     10:00     10:01       11/20/10     10:00     10:01       11/20/10     10:0	-
Reques Analytic Manatica Bureau Veritas North Amer	Report results to:NameJeff SmithCompanyJeff SmithCompanyOCCU-TECMailing Address4151 N. MuCity, State, ZipKansas CityTelephone No.816-994-34	Special instructions and/or specific regulato (method, limit of detection, etc.) ASES	Client Sample Identification CU - 15 FeL SOUTH TAVA D2 - 15 FeL MARK ROOM D3 - 14 FL M. OFFICU O4 - 24 FL N. OFFICU O5 - 24 FL SOUTH LAVA O5 - 24 FL SOUTH LAVA O5 - 24 FL SOUTH LAVA Collected by: Relinquished by: Relinquished by: Relinquished by: Method of Shipment: UAPS Authorized by: Detroit Lab Ship 22345 Roethel Drive to: Novi, MI 48375 248.344.2652 800.806.5887 Fax: 248.344.2655	