## **Molds in Finished Basements**

# **APPENDIX 1-4**

#### Prepared for:

Technical Policy and Research Division
Canada Mortgage and Housing Corporation
700 Montreal Road,
Ottawa, Ontario
K1A 0P7

CMHC Project Manager: Don Fugler

Prepared by:

Scanada Consultants Limited 436 MacLaren Street Ottawa, Ontario K2P 0M8

Scanada Consultants Limited Project Manager: Ken Ruest

**April 1996** 

Molds in Finished Bo	usements				
		4 11 40	14.9. 1.44		PENDIX
	Forms for a	ata collection	, details about th	ne study and	disclaimer
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436 MacLaren Street Ottawa, Ontario K2P 0M8 Tel: (613) 236-7179 Fax: (613) 236-7202

## Brief Descripton of Canada and Mortgage and Housing Corporation's Finished Basements, Phase Two Research Project

Scanada Consultants with the Phase 1 researchers, Cate Soroczan and Rosemary Spencer, have been retained by Canada Mortgage and Housing Corporation (CMHC) to do the second phase of the research into finished basements. CMHC's project officer is Don Fugler (tel:748-2658) and Scanada's project manager is Ken Ruest (236-7179).

The next phase of the research has been launched and further testing is to be done in a few houses out of the 405 houses surveyed. You had expressed some interest in some follow-up studies and this is why you have been approached for this phase. Only 24 houses out of the 405 houses surveyed will have the opportunity to participate in this phase. Tests performed during this phase will help identify if there are moisture problems and/or molds growing in the finished wall cavities (and floor cavities if applicable).

Selected wall cavities will be looked at with an optical fibrescope to determine if there are any signs of moisture or mold growth. A half inch hole will need to be drilled into the interior finish to allow this inspection. These holes would be drilled close to the floor (just above the baseboard or about 3 inches above the floor. As much as possible, these will be in inconspicuous places (corners, behind furniture, closets etc.) if there are no localized spots indicating potential moisture trouble in the wall.

If there are visible signs of molds, some sampling will be done to identify the molds found in the wall or floor cavity. At this time, we anticipate that the hole required to take this sample will not need to be any bigger than that of an electrical outlet cover plate. Once we have received the results from the mold analysis, you will be informed if any of the molds found in your house are known to cause health problems.

Wood moisture readings will be taken to see if there is possible wood structure deterioration. These tests will require two holes of about 1/8" each, 1" apart from each other. These would be done in the same wall cavity as for the viewing with the optical fibrescope. Other information that will be gathered will include room air temperatures and relative humidity. The basement wall construction will be determined, so if you would like to know how well insulated your basement walls are, and how the wall is framed, we will be able to tell you.

Testing should not take more than 3.5 hours overall.

If you have any questions with regards to this project, you may call Don Fugler of CMHC or Ken Ruest at Scanada Consultants Limited. Please sign the attached form to confirm your participation in this project and return it to: Scanada Consultants Limited, 436 MacLaren Street, Ottawa, Ontario, K2P 0M8 or Fax it at 236-7202

Phone Ouestionnaire: CMHC Basement Study: Phase II House ID # \_\_\_\_\_ Age:(or yr built) \_\_\_\_ Foundation type\_\_\_\_\_
Year basement finished \_\_\_\_\_ Other year finished \_\_\_\_\_ Apparent signs of moisture? Yes \_\_\_ No \_\_\_ (9 houses max with no signs of moisture) Full height finish? Yes No (2 houses max with half height insulation/finish only) Built between fall 1993 and July 1994? Yes No (1 or 2 only) Sleepered floor? Yes \_\_\_\_\_ No \_\_\_\_ (1 or 2 only) Removable suspended ceiling? Yes \_\_\_\_ No \_\_\_ or No finished ceiling? Yes \_\_\_\_ No\_\_\_\_ Type of ceiling Use of basement (Finished Area) Daily use (part of living space) Yes \_\_\_\_\_ No \_\_\_\_ Storage \_\_\_\_ Family/Recreation room \_\_\_\_ Bedrooms \_\_\_\_ Office \_\_\_\_ Other \_\_\_\_ Any signs of dampness/moisture in basement? Yes No \_\_\_\_\_ Any history of water leakage in the basement from outside? Yes \_\_\_\_ No \_\_\_\_ Recurring? Yes \_\_\_\_ No \_\_\_\_ (Single occurrence or not? Yes \_\_\_\_ No \_\_\_\_) Comments Any known area of problems hidden by interior basement finish now? Yes No Comments Quality of interior finish (for patching): Interior finish (type) Baseboards Quarter round Patching options: Cover plate \_\_\_ Plastic plugs \_\_\_ Drywall patching compound \_\_\_\_ Clear thermoplastic caulking \_\_\_ Matched caulking colour \_\_\_\_ Are owners interested in participating in this stage of the study with some disruption to the interior finish Yes \_\_\_ No \_\_\_ If yes, can the form be faxed for signature? Yes No (FAX #) House accessible during daytime, week days? Yes \_\_\_\_ No \_ Best day and time for access? Day \_\_\_\_\_ Time \_\_\_\_ Best time to call Work phone number(s)

Best time to call



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CMHC Research Pro	ject: Finished Basements	s and Potential Health Effects	Due to Molds
Date:	, 1995	House I.D.#:	,
Due to Molds. We understand that some successful completion	s research project on Fini have read the disclaime disruption to the interior f	ished Basements and Potential or below and agree to this continish in the basment will be newless made to gain access to the ed.	ondition. We cessary for the
Disclaimer			·
that molds that are kn in the basement wall Scanada Consultants' in your house. Corre remain the home own	own to affect human healt cavitites. Canada Mortga responsibility is limited to ctive measures which may	and mold testing in your house th could be found in your house age and Housing Corporation informing you of the presence be required as a result of thes as any other costs which may be	se basement or (CMHC) and of such molds e findings will
Home owner's signat	ıres		
During the course of that molds that are kn in the basement wall Scanada Consultants' in your house. Correremain the home owner to these findings.	own to affect human healt cavitites. Canada Mortgaresponsibility is limited to ctive measures which may ers' responsibility as well a	th could be found in your hous age and Housing Corporation informing you of the presence be required as a result of thes	se basement (CMHC) a of such mole findings w

# CMHC Finished Basements and Health Problems Due to Mold House I.D.#: Data collection forms Date:\_\_\_\_\_ Exterior Observations Checklist: (sketch on back of this page) Grading $\square$ , Eaves troughing $\square$ , Downspouts $\square$ , Trees near house or foundation $\square$ , Buildings near house $\square$ , Cracks in foundation wall $\square$ , Type of foundation $\square$ . Comments: **Exterior Conditions at Time of Inspection:** On site Temperature: \_\_\_\_\_°C, Relative Humidity: \_\_\_\_\_%, Time: \_\_\_\_\_ Comments: **Interior Conditions:** Main floor - Temperature:\_\_\_\_°C, Relative Humidity:\_\_\_\_%, Room:\_\_\_\_\_ Basement Finished Area - Temp.:\_\_\_\_°C, RH:\_\_\_\_\_%, Room:\_\_\_\_\_ Basement Unfinished Area - Temp.:\_\_\_\_°C, RH:\_\_\_\_\_%, Room:\_\_\_\_\_ Wood Moisture Readings: (for correlation with long term RH) Readings taken in: finished basement□, unfinished basement□ Location 1: WMR: \_\_\_\_, Temperature: \_\_\_\_°C, Component: \_\_\_\_\_\_ Location 2: WMR: \_\_\_, Temperature: \_\_\_\_°C, Component: \_\_\_\_\_\_ Location 3: WMR: \_\_\_, Temperature: \_\_\_°C, Component: \_\_\_\_\_\_ Location 4: WMR: \_\_\_, Temperature: \_\_\_°C, Component: \_\_\_\_\_\_ Location 5: WMR: \_\_\_, Temperature: \_\_\_°C, Component: \_\_\_\_\_\_ Basement Wall Composition: (Interior Finish/Insulation/Framing/Foundation) From inside to outside (include AVB, air spaces, moisture barriers, exterior membranes on foundation): Finished area type 1 Finished area type 2 (or floor detail) Comments: Basement Ceiling: (type of finish) Connection of wall cavity to room air:

n of House and Site Sketch:				House I.D.#:
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ement Sketch:	<del>,</del>			 
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Mold	sam	plin	g

Location	Sample I.D.#	Swab	Tape	Comment
ļ				
Description	of access to the	cavity•(	general i	procedure or specific details if needed)

Description of access to the	cavity:(general procedure	e or specific details if n	leeded)

#### Wood Moisture and Temperature in Wall or Floor cavities:

Location	corresponds to sample #	Wood Moisture Reading	Wood temp. (°C)	Comments
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Comments Observations:	 	 <del></del>	 

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Fax: (613) 236-7202

Date:	, 1995	House I.D.#:
Release Form		
inspected the lo	cations tested in the basen	nent. We accept the conditions of ment wall(s) or floor as seen.
Home owner's s	signature	

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APPENDIX
Results of cellophane tape and swab samp

House ID	Mold - Cellophane Tape	Quantity	Mold - Swabs	Quantity
P1-1A			Acremonium kiliense	
			Arthrobotrys oligospora	
	•		Aspergillus sydowii	
			Aspergillus versicolor	abundant
			Exophiala jeanselmii	
			Gliomastix luzulae	very abundant
			Penicillium brevicompactum	
			Penicillium glabrum	
			Phialophora verrucosa	abundant
			Verticillium lecanii	
P1-1B			Acremonium kiliense	
			Aspergillus versicolor	abundant
			Myxotrichum ochraceum	
			Oidiodendron cereale	abundant
			Oidiodendron griseum	abundant
ļ			Penicillium chrysogenum	
			Stachybotrys atra	7
Į			Verticillium lecanii	
P1-1C	Oidiodendron cereale	abundant	Myxotrichum ochraceum	
			Oidiodendron cereale	abundant
			Stachybotrys atra	
P1-1D	Trichocladium opacum	not abundant		
P1-1D	Trichocladium opacum	abundant		
P2-1	Chaetomium cochlioides		Aspergillus sydowii	
	Scopulariopsis fusca		Aspergillus versicolor	
			Chaetomium cochlioides	very abundant
•		<u> </u>	Malbranchia arcuata	
			Penicillium chrysogenum	
			Penicillium glabrum	
1			Penicillium variabile	abundant
			Scopulariopsis fusca	abundant
			Verticillium lecanii	

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House ID	Moid - Cellophane Tape	Quantity	Mold - Swabs	Quantity
P2-2	Aspergillus versicolor		Aspergillus ochraceus	<u> </u>
	Malbranchia arcuata		Aspergillus versicolor	very abundant
	Myxotrichum ochraceum	•	Malbranchia arcuata	
	Scopulariopsis fusca		Myxotrichum ochraceum	very abundant
			Scopulariopsis fusca	very abundant
P2-3	Ascotricha chartarum			
	Aspergillus versicolor			
	Exophiala sp.	very abundant		
	Malbranchia arcuata			
	Scopulariopsis fusca			
M1-1	No fungi		Aspergillus versicolor	
		,	Cladosporium sphaerospermum	
			Eurotium herbariorum	
			Penicillium chrysogenum	
M1-2	unidentifiable fungal cells		Cladosporium sphaerospermum	
			Penicillium glabrum	
M-7	Stud & Joist: fungus a species of Oph	iostoma		
	rarely, turn up in air sample			
M4-4	Penicillium sp.	small amount	Penicillium corylophilum	very abundant
			Penicillium commune	not very abundant
	,		Penicillium glabrum	uncommon
			Trichoderma viride	uncommon
			Some pink yeast	
M9-1			Mucor hiemalis	moderately abundant
	<u> </u>		Penicillium simplissimum	moderately abundant
M9-2	unidentifiable		Penicillium commune	abundant
			Penicillium hirsutum	abundant
M11-1	Gliomastix murorum	abundant	Acremonium kiliense	not abundant
	Microascus cinereus	not abundant	Blastobotrys nivea	moderately abundant
	Myxotrichum ochraceum	moderately abund	Gliomastix murorum	very abundant
	Oidiodendron cereale	moderately abund	Malbranchia arcuata	moderately abundant
	Stachybotrys atra	abundant	Penicillium chrysogenum	not abundant

House ID	Mold - Cellophane Tape	Quantity	Mold - Swabs	Quantity
M11-2			Acremonium psaliotae	moderately abundant
			Aspergillus versicolor	exceedingly abundant
M12-1			Aspergillus versicolor	infrequent
			Cladosporium cladosporioides	infrequent
			Pink yeast	
M-13	Aspergillus sp. possibly A. candidus	abundant		
	Aspergillus sp. possibly A. herbariorum	common		
	Aspergillus sp. possibly A. versicolor	abundant		
	Microascus cirrosus	abundant		
	Petriella setifera	very abundant		
M14-1A			Penicillium chrysogenum	common
			Penicillium variabile	very abundant
			* P. variabile/P. chrysogenum = ca. 4/	
M14-1B			Penicillium chrysogenum	very abundant
			Penicillium variabile	common
			Ulocladium botrytis	common
M14-1C	Malbranchia arcuata	common	Malbranchia arcuata	very abundant
	Microascus cirrosus	very abundant	Oidiodendron cereale	not abundant
			Penicillium chrysogenum	not abundant
M14-2			Aspergillus versicolor	common
			Blastobotrys nivea	not abundant
			Malbranchia arcuata	very abundant
			Oidiodendron cereale	not abundant
M15-1	Stachybotrys atra	very abundant	Chaetomium cochlioides	very abundant
	Sterigmatobotrys macrocarpa	very abundant		
M16-1	Penicillium species	abundant	Aspergillus versicolor	common
			Penicillium canescens	not abundant
			Penicillium chrysogenum	very abundant
M20-1A	Paecilomyces varioti	very abundant		
			Aspergillus sydowi	not abundant
			Blastobotrys nivea	common
			Gliomastix murorum	not abundant
	1		Penicillium corylophilum	not abundant
			Penicillium duclauxii	abundant
			Penicillium rugulosum	very abundant
			Torulomyces lagena	not abundant

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House ID	Mold - Cellophane Tape	Quantity	Mold - Swabs	Quantity
M20-1B			Blastobotrys nivea	common
			Penicillium corylophilum	not abundant
			Penicillium duclauxii	very abundant
M20-2	Aspergillus sp. possibly A. herbariorum	abundant	Aspergillus versicolor	common
			Penicillium chrysogenum	not abundant
			Penicillium corylophilum	not abundant
M20-3	Aspergillus versicolor	very abundant	Aspergillus versicolor	not abundant
	Cladosporium sphaerospermum	common	Cladosporium sphaerospermum	abundant
	Stachybotrys atra	very abundant	Cylindrocladium?	abundant
			Penicillium chrysogenum	not abundant
			Stachybotrys atra	common
M20-4	Aspergillus sp. possibly A. cervinus	abundant	unidentified, possibly a basidiomycete	1 colony
M21-4	Cladosporium cladosporioides	common	Blastobotrys nivea	common
	some dark hyphal masses		Microsphaeropsis olivacea	abundant
	abundant insect frass		Cladosporium sphaerospermum	not common
			Penicillium waksmanii	very abundant
			Yeast	abundant
M21-5	Aspergillus sp. possibly A. cervinus	very abundant	Penicillium aurantiogriseum	uncommon
M22-2A	Cladosporium sphaerospermum	very abundant	Cladosporium sphaerospermum	very abundant
			Penicillium chrysogenum	abundant
M22-2B	a few unidentifiable fungal hypae		Cladosporium sphaerospermum	not common
	abundant crystalline material		Penicillium chrysogenum	very abundant
			Penicillium variabile	abundant
M22-2C	Aspergillus sp. possibly A. candidus	abundant	Aspergillus candidus	abundant
	Scopulariopsis brevicaulis	not abundant	Aspergillus sydowi	abundant
			Aspergillus versicolor	not abundant
			Penicillium chrysogenum	very abundant
			Penicillium crustosum	abundant
			Scopulariopsis brevicaulis	very abundant
			Sporothrix schenckii	abundant

House ID	Mold - Cellophane Tape	Quantity	Mold - Swabs	Quantity
M23-1A	Alternaria alternata	very abundant	Acremonium strictum	very abundant
	Gliocladium sp.	very abundant	Alternaria alternata	very abundant
	Scopulariopsis brevicaulis	common	Penicillium chrysogenum	very abundant
	Stachybotrys atra	very abundant		
M23-1B	Acremonium sp.	abundant	Geomyces pannorus	very abundant
	Aspergillus sp. possibly A. herbariorum	common	Penicillium chrysogenum	abundant
	Chaetomium murorum	very abundant	Phoma herbarum	abundant
M23-1C			Aspergillus versicolor	very abundant
			Penicillium chrysogenum	not abundant
			Pink yeast	common
M23-1D	Aspergillus sp.	common	Cladosporium cladosporioides	not abundant
	Geomyces pannorus	abundant	Geomyces pannorus	very abundant
	Scopulariopsis brevicaulis	common	Penicillium chrysogenum	very abundant
	Ulocladium botrytis	common	Ulocladium botrytis	not abundant
M23-1E	Aspergillus versicolor	very abundant		
	Geomyces pannorus	very abundant		
	Scopulariopsis brevicaulis	common		
M23-2A	Acremonium kiliense	common	Acremonium kiliense	very abundant
	Scopulariopsis brevicaulis	abundant	Cladosporium sphaerospermum	common
	Scopulariopsis fusca	abundant	Geomyces pannorus	very abundant
			Penicillium chrysogenum	not abundant
			Scopulariopsis brevicaulis	very abundant
M23-2B	Alternaria alternata	not abundant	Acremonium strictum	very abundant
	abundant plant fibre		Aspergillus versicolor	not abundant
			Cladosporium sphaerospermum	not abundant
			Penicillium chrysogenum	not abundant
M24-1	very little mould		Aspergillus versicolor	not abundant
1	some <i>Penicillium</i> sp.	not abundant	Cladosporium cladosporioides	not abundant
	plant fibres		* NB only 6 colonies on 2 plates	
M24-2	abundant plant fibres		Aspergillus versicolor	not abundant
	some dark fungal cells in the plant fibres		Cladosporium cladosporioides	very abundant
	possibly <i>Aureobasidium</i>		Penicillium commune	not abundant
l			Penicillium waksmanii	not abundant
			Rhizopus nigricans	not abundant

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		APPENDIX	ζ,
		Temperature, Relative Humidity a	m
		Wood Moisture Reading Summari	es

House ID	P1		House ID	P3	
		Basement Exposed Wood Moisture Readings			Basement Exposed Wood Moisture Readings
Date of Visit	Oct. 11/95	Area Component Temp WMR	Date of Visit	Oct, 18/95	Area Component Temp WMR
Year Built	1959	1. unfin joist 19.2 8.50	Year Built	1986	1. unfin joist 20,6 7.00
Year Basement Finished	1979	2. unfin joist 19:3 9:00	Year Basement Finished	1989	2. unfin joist 21,1 7.00
	•	3. unfin joist 20.0 9.00			3. unfin joist 20,8 7.25
Exterior Cond's		4. unfin joist 20,0 9.00	Exterior Cond's		4. unfin joist 22.4 6.50
Time of Day	10:00 AM	5. unfin joist 19.8 8.50	Time of Day	5:35 PM	5. unfin joist 21.1 7.25
Temperature, °C	14.0		Temperature, °C	18.8	er werden werden er
Rel. Humidity, %	74.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	34.5	Basement Wall/Floor Cavity Conditions
•		Location W/F Cavity Temp WMR Corrected MC			Location W/F Cavity Temp WMR Corrected MC
Interior Cond's		1 wall 18.0 11.75 16.5	Interior Cond's		1 wall 20.9 6.75 approx 9.0
Main Fir Temp, °C	18.8	2 wall 18.5 11.75 16.5	Main Fir Temp, °C	20.1	2 wall 20.8 6.75 approx 9.0
Main Fir RH. %	61.3	3 wall 18.6 14.50 20.7	Main Fir RH, %	44.3	
Room data taken	living room	A service of the property of the service of the ser	Room data taken	living room	
Bsmt Finished Area		Takining Wallet Hillia Plant Cariffa. 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	. Bsmt Finished Area		
Temperature, °C	17.5	Molds Found	Temperature, °C	20.9	Molds Found
Rel. Humidity, %	60.2			44.0	# of Species Identified: none
Room data taken	workroom	# of Species Identified: 16 # Considered Toxigenic 3	• • • • • • • • • • • • • • • • • • • •	rec room	# Considered Toxigenic n/a
Bsmt Unfinished Area			Bsmt Unfinished Area		
Temperature, °C	19.0		Temperature, °C	21.0	
Rel. Humidity, %	60.0		Rel. Humidity, %	44.4	
Room data taken	furnace area		Room data taken	furnace room	
House ID	P2				
		Basement Exposed Wood Moisture Readings			
Date of Visit	Oct. 12/95	Area Component Temp WMR			
Year Built	1920s	1. untin joist 16.2 10.75			
Year Basement Finished	1966	2. unfin joist 16.0 11.00	1		
		3. unfin joist 16.0 10.75			
Exterior Cond's		4. unfin joist 15.8 12.50			
Time of Day	9:30 AM	5. unfin joist 16.0 9.25			
Temperature, °C	14,5				
1	1 11 1 1 1 1				
Rel. Humidity, %	63.7	Basement Wall/Floor Cavity Conditions			
Rel. Humidity, %	63.7	Location W/F Cavity Temp WMR Corrected MC			
Rel. Humidity, % Interior Cond's	,	Location W/F Cavity Temp WMR Corrected MC 1 wall 14.8 28.00 above 28			
Rel. Humidity, %  Interior Cond's  Main Fir Temp, °C	ii 16.7∙,	Location         W/F Cavity         Temp         WMR         Corrected MC           1         wall         14.8         28.00         above 28           2         wall         14.7         29.00         above 28			
Rel. Humidity, %  Interior Cond's  Main Fir Temp, °C  Main Fir RH, %	16.7 57.3	Location         W/F Cavity         Temp         WMR         Corrected MC           1         wall         14.8         28.00         above 28           2         wall         14.7         29.00         above 28           3         wall         14.4         28.00         above 28			
Rel. Humidity, %  Interior Cond's  Main Fir Temp, °C	ii 16.7∙,	Location         W/F Cavity         Temp         WMR         Corrected MC           1         wall         14.8         28.00         above 28           2         wall         14.7         29.00         above 28           3         wall         14.4         28.00         above 28           4         -         -         -         -			
Rei. Humidity, %  Interior Cond's  Main FIr Temp, °C  Main FIr RH, %  Room data taken	16.7 57.3	Location         W/F Cavity         Temp         WMR         Corrected MC           1         wall         14.8         28.00         above 28           2         wall         14.7         29.00         above 28           3         wall         14.4         28.00         above 28			
Rei. Humidity, %  Interior Cond's Main Fir Temp, °C Main Fir RH, % Room data taken  Bsmt Finished Area	16.7 57.3 living room	Location W/F Cavity Temp WMR Corrected MC  1 wall 14.8 28.00 above 28  2 wall 14.7 29.00 above 28  3 wall 14.4 28.00 above 28  4			
Rel. Humidity, %  Interior Cond's  Main Fir Temp, °C  Main Fir RH, %  Room data taken  Bsmt Finished Area  Temperature, °C	16.7 57.3 living room	Location W/F Cavity Temp WMR Corrected MC  1 wall 14.8 28.00 above 28  2 wall 14.7 29.00 above 28  3 wall 14.4 28.00 above 28  4 -  5 -  Molds Found			
Rel. Humidity, %  Interior Cond's Main Fir Temp, °C Main Fir RH, % Room data taken  Bsmt Finished Area	16.7 57.3 living room	Location W/F Cavity Temp WMR Corrected MC  1 wall 14.8 28.00 above 28  2 wall 14.7 29.00 above 28  3 wall 14.4 28.00 above 28  4			
Rel. Humidity, %  Interior Cond's  Main Fir Temp, °C  Main Fir RH, %  Room data taken  Bsmt Finished Area  Temperature, °C  Rel. Humidity, %	16.7 57.3 living room	Location   W/F Cavity   Temp   WMR   Corrected MC			
Rel. Humidity, %  Interior Cond's Main FIr Temp, °C Main FIr RH, % Room data taken  Bsmt Finished Area Temperature, °C Rel. Humidity, % Room data taken  Bsmt Unfinished Area	16.7 57.3 living room 16.5 64.5	Location   W/F Cavity   Temp   WMR   Corrected MC			
Rel. Humidity, %  Interior Cond's  Main Fir Temp, °C  Main Fir RH, %  Room data taken  Bsmt Finished Area  Temperature, °C  Rel. Humidity, %  Room data taken	16.7 57.3 living room	Location   W/F Cavity   Temp   WMR   Corrected MC			

House ID	M1		House ID	M3	
	******	Basement Exposed Wood Moisture Readings			Basement Exposed Wood Moisture Readings
Date of Visit	Nov. 8/95	Area Component Temp WMR	Date of Visit	Nov. 15/95	Area Component Temp WMR
Year Built	1946	1. unfin joist 19.7 7.50	Year Built	1962	1. unfin joist - 6.50
ear Basement Finished	1983 & 1992	2. unfin joist 20.5 6.50	Year Basement Finished	1962, 1968	2. unfin joist - 6.50
		3. unfin joist 21.1 6.50			3 fin stud 17.5 6.00
Exterior Cond's		4. unfin stud 20.4 7.25	Exterior Cond's		4. fin joist 17.2 7.75
Time of Day	9:45 AM	5. fin stud 21.1 7.00	Time of Day	9:00 AM	5. fin stud 18.8 6.00
emperature, °C	6,5	The same of the sa	Temperature, °C	2.6	And the second of the second o
Rel. Humidity, %	58,0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	90.7	Basement Wall/Floor Cavity Conditions
,		Location W/F Cavity Temp WMR Corrected MC	,	denia - 2	Location W/F Cavity Temp WMR Corrected MC
nterior Cond's		1 wall 18.6 8.25 11.3	Interior Cond's		1 wall 19.2 7.00 9.2
lain Fir Temp, °C	22.8	2 wail 19.6 11.20 15.4	Main Fir Temp, °C	18:9	2 wall 18.2 9.00 12.4
lain Fir RH, %	38.1	3 wall 19.3 8.75 11.8	Main Fir RH, %	48.0	3
com data taken	hallway	4 wall 19.6 9.50 12.9	Room data taken	living room	4
toom adia takon	inanivay	<b>5</b>	1100111 4212 (3)(6)1		5 wall 17.7 8.25 11.4
Ismt Finished Area		₹	Bsmt Finished Area		6 wall 19.5 7.25 9.6
emperature, °C	23.5	Moids Found	Temperature, °C	15.0	
Rel. Humidity, %	23.5 37.0	# of Species Identified:	Rel. Humidity, %	36.0	Molds Found
Room data taken	living space	# Considered Toxigenic	Room data taken	rec room	# of Species Identified:
Coom data taken	nan R'shace	# Considered Toxigenio	Noon data taken	red inquii	# Considered Toxigenic n/a
Ssmt Unfinished Area			Bsmt Unfinished Area		# Considered Toxigenic
emperature, °C	23.5		Temperature, °C	18.9	
el. Humidity, %	37.0		Rel. Humidity, %	44.0	
Room data taken	tiving space		Room data taken	furnace room	
Com data takon	inanigiapaoc		TOOM GALL TAKEN	iamaça room	
louse ID	M2		House ID	M4	
	***	Basement Exposed Wood Moisture Readings			Basement Exposed Wood Moisture Readings
Date of Visit	Nov. 9/95	Area Component Temp WMR	Date of Visit	Nov. 15/95	Area Component Temp WMR
∕ear Built	1950	1. unfin joist 15.9 8.50	Year Built	1962	1. unfin joist 21.1 < 6
ear Basement Finished	1970s	2. unfin joist 16.0 8.00	Year Basement Finished	1989	2. unfin joist 21.7 < 6
		3. unfin stud 15.9 < 6	1		3. unfin stud 21.1 < 6
exterior Cond's		4, unfin stud 15.9 6.50	Exterior Cond's		4. fin stud 20.8 < 6
ime of Day	9:00 AM	5, unfin stud 16.1 7.50	Time of Day	1:45 PM	5. fin trim 21.0 6.00
emperature, °C	-8.3		Temperature, °C	4.2	William Control of the State of
Rel. Humidity, %	67.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	76.6	Basement Wall/Floor Cavity Conditions
•	dans /	Location W/F Cavity Temp WMR Corrected MC	1 -	•	Location W/F Cavity Temp WMR Corrected MC
nterior Cond's		1 wall 15.8 8.00 11.4	Interior Cond's		1 wall 20.4 7.50 9.8
fain Fir Temp, °C	<sup>1</sup> 19.1	2 floor 15.7 12.50 18.1	Main Fir Temp, °C	21.4	2 wall 17:1 7.50 10.4
lain Fir RH. %	39.6	3 wall 15.7 7.50 10.5	Main Fir RH, %	35.1	3 wall 14.8 8.50 12.2
Room data taken	kitchen	4	Room data taken	living room	4 wall 14.9 7.00 9.9
		5	1		5 wall 16.8 7.75 10.8
Ssmt Finished Area			Bsmt Finished Area		TO THE RESEARCH STOCKERS WITH TOTAL STREET AND THE CONTRACT OF
remperature, °C	16.2	Molds Found	Temperature, °C	19.5	Moulds Found
el. Humidity, %	43.4	# of Species Identified: none	Rel. Humidity, %	39.0	# of Species Identified: 4
Room data taken	rec room	# Considered Toxigenic n/a	Room data taken	rec room	# Considered Toxigenic 1
Ssmt Unfinished Area			Bsmt Unfinished Area		
	. Tr 47 5 02		Temperature, °C	20.7	
emperature, °C	17.2			* * * * * * * * * * * * * * * * * * * *	
Rel. Humidity, % Room data taken	43.0	•	Rel. Humidity, %	37.5	
	furnace room		Room data taken	fumace m	

House ID	M5		House ID	M7	
		Basement Exposed Wood Moisture Readings			Basement Exposed Wood Moisture Readings
ate of Visit	Nov. 16/95	Area Component Temp WMR	Date of Visit	Nov. 23/95	Area Component Temp WMR
ear Built	1968	1. furnace joist 17.6 - 6.75	Year Built	Aug 1993	1: untinjoist21.4 < 6
ear Basement Finished	1970, 1994	2. furnace joist 17.4 6.50	Year Basement Finished		2. unfin joist 21.3 < 6
		3. office joist 19.2 6.00	1	,	3. unfin stud 21,5 < 6
xterior Cond's		4. office dr-imb 20.0 6.50	Exterior Cond's		4. furn   joist 21,6 < 6
ime of Day	9:05 AM	5. rec rm joist 19.7 6.00	Time of Day	- 10:00 AM	5. unfin joist 21.8 <6
emperature, °C	0.7		Temperature, °C	0.0	The state of the same of the state of the st
tel. Humidity, %	75.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	90.0	Basement Wall/Floor Cavity Conditions
ici, i raimany, 70	111, A. A. 1, A. 1,	Location W/F Cavity Temp WMR Corrected MC	rton riamany, 70		Location W/F Cavity Temp WMR Corrected MC
nterior Cond's		15.0 10.50 15.0	Interior Cond's		1a. wall 16.5 8.00 11.3
flain Fir Temp, °C	19.3	2 wall 14.2 7.00 10.0	Main Fir Temp, °C	20.2	1b. wall 16.8 14.50 21.4
lain Fir RH, %	37.6	3 wall 15.8 6.75 approx 9.0	Main Fir RH. %	26.3	
	hallway	4 15.8 11.50 16.5	Room data taken	living room	2a. wall 8.7 16.00 25.6 2b. wall 9.1 9.00 13.8
footii data taketi	il cilway ,	a distribution of the contract	100111 data taken	uaui@:ioour.	The company of the co
3smt Finished Area		5 4 wall 2 17.6 7.00 9.5	Bsmt Finished Area		
	19.6	Molds Found	1	20.9	TIVE A SUBSEMBLE CONTROL OF SUBSECTION OF THE SU
	aller and a second		Temperature, °C		the paragraphment of the control of
Rel. Humidity, %	36,5		Rel. Humidity, %	26.9	5 wall 18.2 7.50 10.2
Room data taken	rec room	# Considered Toxigenicn/a	Room data taken	rec room	Aduldo Pound
			B444		Molds Found
Ismt Unfinished Area	DESCRIPTION AND ADDRESS.		Bsmt Unfinished Area	4 % 24 2	# of Species Identified: none
	19.7		Temperature, °C	21.9	# Considered Toxigenic n/a
Rel. Humidity, %	36.3		Rel. Humidity, %	26.7	÷.
Room data taken	fumace room	•	Room data taken	furnace room	
iouse ID	M6.		House ID	M8	
	of March 4-4 Comm 1991	Basement Exposed Wood Moisture Readings		Pers THE	Basement Exposed Wood Moisture Readings
Date of Visit	Nov. 20/95	Area Component Temp WMR	Date of Visit	Nov. 23/95	Area Component Temp WMR
rear Built	Jul-94	1. wkshp joist 17.8 7.50	Year Built	1994	1-fin backing 17.0 7.00
rear Basement Finished		2. wkshp joist 16.5 6.50	Year Basement Finished		1. fin   loist   17.0   9.00
Car Dagement i inionea	1004. Net	3. living are joist 18.6 7.00	.ca basement manea	100401000	1. fin plate 17.8 7.50
Exterior Cond's		4. fum stud 18.9 6.50	Exterior Cond's		1. fin: stud 19.8 < 6
ime of Day	. 11:00 AM	5. fum stud 19.3 7.50	Time of Day	2:30 PM	1. fin stud 19.6 6.50
emperature, °C	entral de <u>de la seconda</u>	A MILLION DIVINITY AND PHILLIPPE LAND OF LAND OF	Temperature, °C	2.8	J. 1987 Suu 15.0 15.0
Rel. Humidity, %	55.6	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	91.3	Basement Wall/Floor Cavity Conditions
Cel. Mutilially, 70	51. 33.0 FT	Location W/F Cavity Temp WMR Corrected MC	Rei. Huillidity, 76	· # 41.3	
nterior Cond's		1 wall 17.3 11.50 16.22	Interior Cond's		Location W/F Cavity Temp WMR Corrected MC
	10.00	2 wall 16.2 10.00 14.11		19.9	「 はいされば、 m かららいがけることが am はないことが Memoria Tall Tallida apple できる可能は
Main Fir Temp, °C	19.9	That the fill of the stable full be called a limit to the stable for the stable of the	Main Fir Temp, °C	material and the second	2 wall 13.5 7.00 10.1
Main Fir RH, %	32.5	ETCHER THE AND THE STATE OF THE	Main Fir RH, %	38.6	3 wall 15.0 9.50 13.6
Room data taken	living room	4 wall 15.0 9.50 13.59	Room data taken	living room	4 wall 11.9 9.00 13.3
Bsmt Finished Area			Bsmt Finished Area		Service of the servic
remperature, ºC	18.6	Molds Found		19.7	Molds found
Rel. Humidity, %	35.8	# of Species Identified: none	Rel. Humidity, %	19.7 37.9	# of Species Identified:
Room data taken	workshop	# Considered Toxigenic n/a	Room data taken	rec room	# Considered Toxigenic n/a
7			Powel Infinished Associated	•	
Ssmt Unfinished Area	THOSE ALASES		Bsmt Unfinished Area	18 24	
l'emperature, °C	n/a		Temperature, ⁰C	n/a	
Rel. Humidity, %	n/a		Rel. Humidity, %	n/a	•
Room data taken	n/a		Room data taken	n/a	

House ID	M9		House ID	M11	<del></del>
		Basement Exposed Wood Moisture Readings		1 77.7	Basement Exposed Wood Moisture Readings
ate of Visit	Nov. 27/95	Area Component Temp WMR	Date of Visit	Nov. 28/95	Area Component Temp WMR
ear Built	1987	1 unfin joist 18.2 7.00	Year Built	1921	1. fin strap 24.0 < 6
ear Basement Finished	1987	2. unfin joist 18.8 7.00	Year Basement Finished		2. fin stud 21.0 7.00
•	And the Frank	3. unfin stair 18.8 7.00			3 unfin stud 20:3 7.00
xterior Cond's		4, unfin stud 18.8 5.00	Exterior Cond's		4. fin bkng 19.9 6.50
ime of Day	2:00 PM	5. unfin joist 19.8 7.50	Time of Day	3:00 PM	5. fin joist 24.6 7.00
emperature, °C	-8.0		Temperature, °C	-8.0	St. William Co. Tolog. The Parish Mode.
tel. Humidity, %	79.0	Basement Wall/Floor Cavity Conditions	1 ' '	61.0	Basement Wall/Floor Cavity Conditions
,,,,,,	· · · · · · · · · · · · · · · · · · ·	Location W/F Cavity Temp WMR Corrected MC	TOD Flattings, 70		Location W/F Cavity Temp WMR Corrected MC
nterior Cond's		1 wall 14.2 < 6 approx 10.0	Interior Cond's		1a wall 9,5 11,50 17,82
fain Fir Temp, °C	19.4	2 wall 15.0 < 6 approx 10.0		20.7	1b floor 8.6 15.50 24.74
fain Fir RH, %	35.2	3 wall 14.5 7.00 9.93	Main Fir RH, %	30.0	2 wall 10.9 10.50 15.82
loom data taken	dining room	4 wall 19.1 < 6 approx 10.0		dining room	3 wall 11.3 8.00 12.01
ioom data takon	duming rooms		100iii data takeii	dining room.	4
smt Finished Area		5 Apr. 10 Apr.	Bsmt Finished Area		
emperature, °C	17.2	Molds Found	Temperature, °C	20.6	
tel. Humidity, %	39.2			20.6 32.2	Molds Found
Room data taken	suite	# of Species Identified: 4 # Considered Toxigenic 0	Room data taken		
vooni data taktii	· outro	# Considered Toxigenic	Nooni data taken	rec room	# of Species Identified: 11 # Considered Toxigenic 2:
Ssmt Unfinished Area			Bsmt Unfinished Area		# Considered Toxigenic Lana, 2:
emperature, °C	18.3		Temperature, °C	20.0	
Rel. Humidity, %	18.3 34.8		1 .		*
Room data taken	furnace room		Rel. Humidity, % Room data taken	34.2	
Coolii dala lakeli	iuitiace toom		Room data taken	furnace room	
louse ID	. M10		House ID	M12	
		Basement Exposed Wood Moisture Readings			Basement Exposed Wood Moisture Readings
Date of Visit	Nov. 28/95	Area Component Temp WMR	Date of Visit	Nov. 29/95	Area Component Temp WMR
ear Built	1970	1. fin stud 17.6 <6	Year Built	1984	1. unfin joist 18.8 8.50
ear Basement Finished'	1975	2 fin trim 18.9 ≤6	Year Basement Finished	1985, 1986	2 unfin stud 18.0 8,00
		3. untin joist 20.1 < 6			3. lant-rm stud 25.7 10.00
Exterior Cond's		4. unfin stud 19.9 < 6	Exterior Cond's		4. plant-rm strap 22.4 10.00
ime of Day	9:00 AM	5. unfin stud 19.9 < 6	Time of Day	6:00 PM	5. fum joist 23.6 7.50
emperature, °C	<b>-8.0</b>	in a stand flaten manner of the same	Temperature, °C	-12.0	of the first of the state of t
Rel. Humidity, %	-8.0 73.0	Basement Wall/FloorCavity Conditions	Rel. Humidity, %	66.0	Basement Wall/Floor Cavity Conditions
•		Location W/F Cavity Temp WMR Corrected MC	1		Location W/F Cavity Temp WMR Corrected MC
nterior Cond's		1 wall 15.1 8.00 11.5	Interior Cond's		1a wall 14.5 9.00 13.0
fain Fir Temp, °C	20.1	2 wall 17.2 7.00 9.5	Main Fir Temp, °C	19.0	1b wall 16.6 9.00 12.6
fain Fir RH, %	31.5	3a wall 18.5 7.50 10:1	Main Fir RH, %	31,5	2a wall 16.6 7.50 10.4
Room data taken	living room	3b wall 15.5 8.00 11.4	Room data taken	living	2b wall 17.2 7.50 10.3
	• .	4 wall 17.0 9.00 12.6			3a wall 14.7 9.00 12.9
Ssmt Finished Area		5 wall 15.7 8.5 12.1	Bsmt Finished Area		3b wall 16.1 9.00 12.7
emperature, °C	18.6	Construe of the manifestation of the construction of the construct		18.3	4
tel. Humidity, %	34.2	Molds Found	Rel. Humidity, %	38.3	5 wall 16.8 8.00 11.2
toom data taken	rec room	# of Species Identified: none	Room data taken	rec room	
	*	# Considered Toxigenic n/a		,,	Molds Found
Ssmt Unfinished Area			Bsmt Unfinished Area		# of Species Identified: 2
emperature, °C	19.5		Temperature, °C	18.0	# Considered Toxigenic 1
Rel. Humidity, %	31.6		Rel. Humidity, %	38.5	" Gallerange Lavidous Library L.
Room data taken	fumace		-	furnace room	

House ID	M13		House ID	M15	
		Basement Exposed Wood Moisture Readings			Basement Exposed Wood Moisture Readings
Date of Visit	Dec. 4/95	Area Component Temp WMR	Date of Visit	Dec. 5/95	Area Component Temp WMR
Year Built	1969	1. unfin joist 20.1 6.50	Year Built	1988	1. fin joist 14:2 <6
Year Basement Finished	1985	2. unfin joist 19.8 6.75	Year Basement Finished	1988	2. unfin joist 15:0 < 6
		3. fin bamboard 19.8 6.75			3. fin joist 15.7 < 6
Exterior Cond's		4. finbamboard 20:16:50	Exterior Cond's		4. fin step 15.9 7.75
Time of Day	9:00 AM	5. unfin stud 19.8 6.75	Time of Day	9:00 AM	5. unfin strap 18.8 7.00
Temperature, °C	-4.0	• Specific Alic • • 100 • sering value cont	Temperature, ºC	-14.0	and the second control of the second
Rel. Humidity, %	-4.0 84.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	80.0	Basement Wall/Floor Cavity Conditions
	147	Location W/F Cavity Temp WMR Corrected MC	1		Location W/F Cavity Temp WMR Corrected MC
Interior Cond's		1a wall 18.4 6.50 approx, 9.0	Interior Cond's		1 wall 14.2 >30 above 28
Main Fir Temp, °C	20.4	1b wall 19.2 6.50 approx 9.0	Main Fir Temp, °C	17.8	2 wall 11.7 7.00 10.3
Main Fir RH. %	32.2		Main Fir RH, %	33.0	3 wall 2.0 6.00 approx 11.0
Room data taken	living room	3 wall 14.2 11.50 16.8	Room data taken	living room	4 wall 8.6 11.00 17.1
	- m	4 wall 17.0 9.00 13.4			
Bsmt Finished Area		5	Bsmt Finished Area		HOLE METERS AND
Temperature, °C	19.9	and the second s	Temperature, °C	17.4	Molds Found
Rel. Humidity, %	32.0	Molds Found	Rel. Humidity, %	31.4	# of Species Identified: # Margania 3
Room data taken	rec room	# of Species Identified: 5	Room data taken	rec room	# Considered Toxigenic 1
		# Considered Toxigenic	1	5424	
Bsmt Unfinished Area			Bsmt Unfinished Area		
Temperature, °C	20,1	<i>t</i> -	Temperature, °C	17.5	
Rel. Humidity, %	30.0		Rel. Humidity, %	30.1	·
Room data taken	furnace rm	·	Room data taken	furnace room	The state of the s
	1777			7 IAMA 17 - 1945	
House ID	M14		House ID	M16	
		Basement Exposed Wood Moisture Readings			Basement Exposed Wood Moisture Readings
Date of Visit	Dec. 4/95	Area Component Temp WMR	Date of Visit	Dec. 5/95	Area Component Temp WMR
Year Built	1970	1. fin joist 24.7 ≤6	Year Built	1957	1. unfin joist 16.4 8.25
Year Basement Finished	1 1995	2. fin strap 24.6 < 6	Year Basement Finished	1960, 1995	2. unfin stud 16.4 7.25
		3. fin dr-jamb 23.8 < 6	1		3 unfin backing 16:0 7:50
Exterior Cond's		4fin 2 trim 2 23.4 ≤ 6	Exterior Cond's		4. unfin joist beam 16.7 6.50
Time of Day	4:00 PM	5. fin trim 24.4 < 6	Time of Day	1:30 AM	5. fin shelf leg 16.0 < 6
Temperature, °C	-2.0		Temperature, °C	-9,0	
Rel. Humidity, %	70.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	-9.0 65.0	Basement Wall/Floor Cavity Conditions
		Location W/F Cavity Temp WMR Corrected MC	l l		Location W/F Cavity Temp WMR Corrected MC
Interior Cond's		1 wall 16.6 < 6 approx 9.0	Interior Cond's		1 wall 9.2 7.50 11.5
Main Fir Temp, °C	20.7	2 wall 19.1 10.00 13.7	Main Fir Temp, °C	19.1 44.6	2 wall 6.3 8.00 12.8
Main Fir RH, %	28.6	3a wall 13.1 8.50 12.5	Main Flr RH, %	44.6	3 wall 15.2 13.00 19.0
Room data taken	living	3b wall 13.1 8.00 11.8	Room data taken	living room	
		4 11.50 15.8			
Bsmt Finished Area	•	5 wall 16.0 0.52 20.7/above	Bsmt Finished Area		The second secon
Temperature, °C	20.8	•	Temperature, °C	15.0	Molds Found
Rel. Humidity, %	31.9	Molds Found	Rel. Humidity, %	49.0	# of Species Identified: 3
Room data taken	bedroom	# of Species Identified: 8	Room data taken	rec room	# Considered Toxigenic 1
		# Considered Toxigenic 1			
I		•	Bsmt Unfinished Area		
Bsmt Unfinished Area			Temperature, °C	17.5	•
Temperature, °C	n/a				
	n/a n/a n/a		Rel. Humidity, % Room data taken	49.0	

House ID	M17		House ID	M19	
		Basement Exposed Wood Moisture Readings	İ		Basement Exposed Wood Moisture Readings
Date of Visit	Dec. 6/95	Area Component Temp WMR	Date of Visit	Dec. 12/95	Area Component Temp WMR
Year Built	1987	1, unfin stud 18.4 6.75	Year Built	1983	1. unfin stud 21.1 < 6
Year Basement Finished	1987, 1990	2. unfin joist 19.5 < 6	Year Basement Finished	1989	2. unfin stud 20.0 < 6
		3. unfin stud 18.5 < 6			3. unfin joist 25.2 < 6
Exterior Cond's		4. unfin joist 20.3 6.50	Exterior Cond's		4. unfin stud 21.2 < 6
Time of Day	11:00 AM	5. unfin strap 19.6 < 6	Time of Day	6:00 PM	5. unfin stud 21,0 < 6
Temperature, °C	-4.0		Temperature, °C	-16.0	
Rel. Humidity, %	50.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	54.0	Basement Wall/Floor Cavity Conditions
		Location W/F Cavity Temp WMR Corrected MC			Location W/F Cavity Temp WMR Corrected MC
nterior Cond's		1 wall 10.9 < 6 approx 10.0	Interior Cond's		1 wall 16.1 < 6 approx 9.0
⁄lain Fir Temp, °C	18.4	2 wall 14.6 6,25 approx 9.0	Main Fir Temp, °C	25.6	2 walt 12.5 < 6 approx 10.0
Main Fir RH, %	34.0	.3 wall 18.8 < 6 approx 9.0	Main Fir RH, %	24.0	3 wall 14.1 < 6 approx 10.0
Room data taken	living room	4 wall 18.8 6.50 approx 9.0	Room data taken	living room	4 wall 18.4 < 6 approx 9.0
		5			5 7
3smt Finished Area			Bsmt Finished Area		
remperature, °C	16.9	Molds Found	Temperatùre, °C	18.9	Molds Found
Rel. Humidity, %	35.5	# of Species Identified: none	Rel. Humidity, %	29.0	# of Species Identified: Imnone
Room data taken	rec room	# Considered Toxigenic n/a	Room data taken	rec room	# Considered Toxigenicn/a
Ssmt Unfinished Area			Bsmt Unfinished Area		
Femperature, ºC	18.0		Temperature, °C	20.6	
Rel. Humidity, %	30.7		Rel. Humidity, %	28.0	•
Room data taken	furnace room		Room data taken	fumace room	
House iD	M18		House ID	M20	· · ·
		Basement Exposed Wood Moisture Readings		graphs and the control of the contro	Basement Exposed Wood Moisture Readings
Date of Visit	Dec. 12/95	Area Component Temp WMR	Date of Visit	Dec. 13/95	Area Component Temp WMR
Year Built	1970	1. unfin stud 21.1 < 6	Year Built	1960	1. unfin joist 17.3 < 6
Year Basement Finished	. P. 21	2. unfin stud 22.1 < 6	Year Basement Finished	prediction in Landau and	2. unfin stud 17.5 <6
	17	3. fin joist 26.2 < 6		mane	3. unfin post 17.4 6.50
Exterior Cond's		4. fin stud 22.5 < 6	Exterior Cond's		4. unfin joist 27.7* <6
Time of Day	9:00 AM	5. unfin joist 24.0 < 6	Time of Day	5:00 PM	5. unfin stud 21.0 < 6
remperature, °C	-19.0	a growing Table Table	Temperature, °C	-16.0	A NATIONAL ASSESSMENT OF TAXABLE ASSESSMENT OF A
Rel. Humidity, %	55.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	51.0	Basement Wall/Floor Cavity Conditions
<del>-</del> ·		Location W/F Cavity Temp WMR Corrected MC		7.77% 7.466	Location W/F Cavity Temp WMR Corrected MC
nterior Cond's		1 wall 15.1 10.50 15.0	Interior Cond's		1 wall 11.8 10.50 15.6
Main Fir Temp, °C	20,7	2 wall 18.1 10.00 13.8		20.6	2 wall 3.5 < 6 approx 11.0
Main Fir RH, %	25.9	3 wall 15.9 9.50 13.5	Main Fir RH, %	24.0	3 wall 10.4 < 6 approx 10.0
Room data taken	living room	4 wall 16.8 8.00 11.2	Room data taken	living room	
Bsmt Finished Area		5 (1)	Bsmt Finished Area		
Temperature, °C	18.9	Molds Found	Temperature, °C	17.8	Molds Found
Rel. Humidity, %	30.8	# of Species Identified:none	Rel. Humidity, %	28.0	# of Species Identified:
Room data taken	rec room	# Considered Toxigenic n/a	Room data taken	bedroom	# Or Species Identified. # Considered Toxigenic 3
Bsmt Unfinished Area			Bsmt Unfinished Area		· .
Ssmt Onlinisned Area Femperature, °C	. II oo o≒				
•	22.0		Temperature, °C	19.4	
Rel. Humidity, % Room data taken	23.0		Rel. Humidity, %	30.0	
AUUITI QALA IAKEN	furnace room		Room data taken	furnace room	

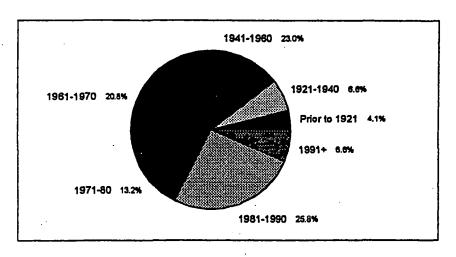
House ID	M21		House ID	M23	
	· · · · · · · · · · · · · · · · · · ·	Basement Exposed Wood Moisture Readings		7 to 1 to 12 f 10 ff	Basement Exposed Wood Moisture Readings
Date of Visit	Dec. 14/95	Area Component Temp WMR	Date of Visit	Dec. 18/95	Area Component Temp WMR
Year Built	1962	1 fin stud 14.2 7.50	Year Built	1992	1. fin joist 17.9 8.00
Year Basement Finished	1970, 1993	2. fin. stud 14.2 7.50	Year Basement Finished	1992	2. fin joist 18.6 6.50
	my (= em)	3 unfin joist 21.5 < 6		:- <del></del>	3. fin joist 18.2 7.00
Exterior Cond's		4 unfin ioist 21.2 < 6	Exterior Cond's		4. fin joist 17.8 7.00
Time of Day	9:00 AM	5. fin closet 14.4 9.50	Time of Day	7:00 PM	5. fin joist 18.2 7.00
Temperature, °C	-14.0	The state of the s	Temperature, °C	-13.0	
Rel. Humidity, %	64.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	72.0	Basement Wall/Floor Cavity Conditions
ice. Harriary, 70		Location W/F Cavity Temp WMR Corrected MC	rec. Hamary, 70	3" IIII E.W"	Location W/F Cavity Temp WMR Corrected MC
Interior Cond's		1 wall 13.8 10.50 15.3	Interior Cond's		The constitution of the state o
	16.1	2 wall 6.9 9.00 14.2	Main Fir Temp, °C	20.0	wall 9.6 < 6 approx 10.0
Main Fir Temp, °C		3 wall 11.0 10.40 16.7		20.0 38.0	2 wall 10.1 10.00 15.2
Main Fir RH, %	49.0	all of the first of the Market of Market and College a	Main Fir RH, %		3 wall 9.5 10.00 15:3
Room data taken	living room	The state of the s	Room data taken	living room	
=:		4b wall -2.1 11.50 20.6	B		5
Bsmt Finished Area	Autoria	5a wall 11.7 9.00 13.4	Bsmt Finished Area	Commission of Commission	
Temperature, °C	15.6	5b wall 13.2 9.50 13.9	Temperature, °C	17.2 37.0	Molds Found
Rel. Humidity, %	43.0		Rel. Humidity, %		# of Species Identified:16
Room data taken	rec room		Room data taken	rec room	# Considered Toxigenic 3
		Molds Found			
Bsmt Unfinished Area		# of Species Identified: 7	Bsmt Unfinished Area		•
Temperature, °C	16,7	# Considered Toxigenic 1	Temperature, °C	15.0	
Rel. Humidity, %	41.0		Rel. Humidity, %	42.0	; <del>.</del>
Room data taken	furnace room		Room data taken	cold room	•
	Zinaatam			e to to finant	
House ID	M22	December 5 and 146 and 146 interm Boordings	House ID	M24	B
- 4 416 11	A.S. Sande	Basement Exposed Wood Moisture Readings	0-4	F1	Basement Exposed Wood Moisture Readings
Date of Visit	Dec. 15/95	Area Component Temp WMR	Date of Visit	Dec. 19/95	Area Component Temp WMR
Year Built	1982	1, fin stud 20.2 < 6	Year Built	1971	1. unfin joist 20.2 < 6
Year Basement Finished	1982, 1986	2. fin stud 20.3 <6	Year Basement Finished	1975, 1993	2. unfin stud 19.7 8.00
		3. unfinloist20.1<6			3. unfin joist 20.5 < 6
Exterior Cond's		4. unfin joist 20.4 <6	Exterior Cond's		4. unfin stud 18.7 7.00
Time of Day	10:00 AM	5. fin closet 19.4 9.00	Time of Day	10:00 AM	5. unfin stud 18.9 6.50
Temperature, °C	-8.0	,	Temperature, °C	-17.0	
Rel. Humidity, %	75.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	59.0	Basement Wall/Floor Cavity Conditions
		Location W/F Cavity Temp WMR Corrected MC			Location W/F Cavity Temp WMR Corrected MC
Interior Cond's		1 wall 14.1 7.50 10.8	Interior Cond's		1 wall 16.8 8.50 11.89
Main Flr Temp, °C	19.4	2 wall 12,5 9.50 14.0	Main Fir Temp, °C	21,1	2 wall 17:2 < 6 approx 8.0
Main Fir RH, %	33.0	3 walt 17.5 6.50 approx 9.0	Main Fir RH, %	44.0	
Room data taken	living room	4 wall 13.4 <6 approx 10.0	Room data taken	living room	4 wall 30.0 <6 approx 7.0
Bsmt Finished Area		5	Bsmt Finished Area		5 wall 13.6 < 6 approx 9.0
	45.40.4.553	Molds Found		18.9	Molds Found
Temperature, °C	19.4	# of Species Identified:	Temperature, °C	18.9 44.0	ar motors .
Rel. Humidity, % Room data taken	33,0 rec & bdrm	# or Species Identified: 9 # Considered Toxigenic 2	Rel. Humidity, % Room data taken	rec room	# of Species Identified: 5 # Considered Toxigenic 1
				and the transfer	on the second of
Bsmt Unfinished Area			Bsmt Unfinished Area		
Temperature, °C	n/a		Temperature, °C	19,4	
Rel. Humidity, %	n/a		Rel. Humidity, %	41.0	
inter, traininging, 70			Room data taken		

4 B

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					APPENDL
St	atistical S	ummary of	Inspections	of 405 F	inished Basem

#### STATISTICAL SUMMARY OF INSPECTIONS OF 405 FINISHED BASEMENTS

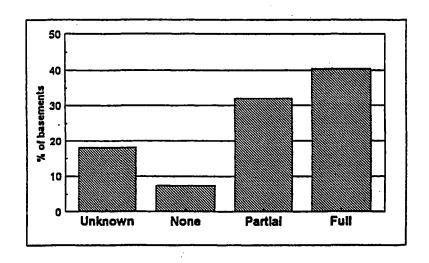
#### Year of house construction



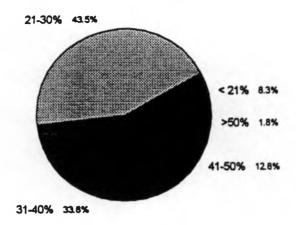
#### Other characteristics

- 83 % poured foundations
- 42 % have 100% wall coverage: others usually exceed 50% coverage
- Mostly drywall or wood panels for finishing: 7% still with exposed plastic or insulation
- Few basements with exterior insulation/drainage layer

#### Extent of wall insulation



#### **Basement relative humidity**



#### Are there moisture problems?

- Roughly 75% say there are no moisture problems
- Roughly 50% have some obvious evidence of past problems: spalling concrete, efflorescence, stains, mould
- About 35% have basement smell identified as "musty", "mouldy", or "earthy"

#### Preliminary analysis

- No real correlation of basement RH and moisture problems, evidence of problems, outdoor temperature, etc.; however, dampest basements tended to show up when outside temperatures moderate (rather than very cold)
- Older basements more apt to show problems
- Smells unrelated to type of floor covering (eg. rugs)

## **Molds in Finished Basements**

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# **APPENDIX 1-4**

#### Prepared for:

Technical Policy and Research Division
Canada Mortgage and Housing Corporation
700 Montreal Road,
Ottawa, Ontario
K1A 0P7

CMHC Project Manager: Don Fugler

Prepared by:

Scanada Consultants Limited 436 MacLaren Street Ottawa, Ontario K2P 0M8

Scanada Consultants Limited Project Manager: Ken Ruest

**April 1996** 

Iolds in Finished I	Casements	
	Forms for data collection, details about	APPENDIX the study and disclaimer
		•
	•	



436 MacLaren Street Ottawa, Ontario K2P 0M8 Tel: (613) 236-7179 Fax: (613) 236-7202

## Brief Descripton of Canada and Mortgage and Housing Corporation's Finished Basements, Phase Two Research Project

Scanada Consultants with the Phase 1 researchers, Cate Soroczan and Rosemary Spencer, have been retained by Canada Mortgage and Housing Corporation (CMHC) to do the second phase of the research into finished basements. CMHC's project officer is Don Fugler (tel:748-2658) and Scanada's project manager is Ken Ruest (236-7179).

The next phase of the research has been launched and further testing is to be done in a few houses out of the 405 houses surveyed. You had expressed some interest in some follow-up studies and this is why you have been approached for this phase. Only 24 houses out of the 405 houses surveyed will have the opportunity to participate in this phase. Tests performed during this phase will help identify if there are moisture problems and/or molds growing in the finished wall cavities (and floor cavities if applicable).

Selected wall cavities will be looked at with an optical fibrescope to determine if there are any signs of moisture or mold growth. A half inch hole will need to be drilled into the interior finish to allow this inspection. These holes would be drilled close to the floor (just above the baseboard or about 3 inches above the floor. As much as possible, these will be in inconspicuous places (corners, behind furniture, closets etc.) if there are no localized spots indicating potential moisture trouble in the wall.

If there are visible signs of molds, some sampling will be done to identify the molds found in the wall or floor cavity. At this time, we anticipate that the hole required to take this sample will not need to be any bigger than that of an electrical outlet cover plate. Once we have received the results from the mold analysis, you will be informed if any of the molds found in your house are known to cause health problems.

Wood moisture readings will be taken to see if there is possible wood structure deterioration. These tests will require two holes of about 1/8" each, 1" apart from each other. These would be done in the same wall cavity as for the viewing with the optical fibrescope. Other information that will be gathered will include room air temperatures and relative humidity. The basement wall construction will be determined, so if you would like to know how well insulated your basement walls are, and how the wall is framed, we will be able to tell you.

Testing should not take more than 3.5 hours overall.

If you have any questions with regards to this project, you may call Don Fugler of CMHC or Ken Ruest at Scanada Consultants Limited. Please sign the attached form to confirm your participation in this project and return it to: Scanada Consultants Limited, 436 MacLaren Street, Ottawa, Ontario, K2P 0M8 or Fax it at 236-7202

Phone Questionnaire: CMHC Basement Study: Phase II House ID # \_\_\_\_\_ Age:(or yr built) \_\_\_\_ Foundation type\_\_\_\_\_ Year basement finished \_\_\_\_\_ Other year finished \_\_\_\_\_ Apparent signs of moisture? Yes \_\_\_ No \_\_\_ (9 houses max with no signs of moisture) Full height finish? Yes \_\_\_ No \_\_\_ (2 houses max with half height insulation/finish only) Built between fall 1993 and July 1994? Yes \_\_\_\_\_ No\_\_\_\_ (1 or 2 only) Sleepered floor? Yes \_\_\_\_ No \_\_\_\_ (1 or 2 only) Removable suspended ceiling? Yes \_\_\_\_ No \_\_\_ or No finished ceiling? Yes \_\_\_\_ No\_\_\_\_ Type of ceiling Use of basement (Finished Area) Daily use (part of living space) Yes \_\_\_\_ No \_\_\_ Storage \_\_\_\_ Family/Recreation room \_\_\_\_ Bedrooms \_\_\_\_ Office \_\_\_\_ Other \_\_\_\_ Any signs of dampness/moisture in basement? Yes \_\_\_\_\_ No \_\_\_\_ Any history of water leakage in the basement from outside? Yes \_\_\_\_\_ No \_\_\_\_ Recurring? Yes No (Single occurrence or not? Yes No \_\_\_\_) Comments Any known area of problems hidden by interior basement finish now? Yes \_\_\_\_ No \_\_\_\_ Comments Quality of interior finish (for patching): Interior finish (type) Baseboards \_\_\_\_\_ Quarter round Patching options: Cover plate \_\_\_ Plastic plugs \_\_\_ Drywall patching compound \_\_\_\_ Clear thermoplastic caulking \_\_\_ Matched caulking colour \_\_\_\_ Are owners interested in participating in this stage of the study with some disruption to the interior finish Yes No If yes, can the form be faxed for signature? Yes \_\_\_\_ No \_\_\_ (FAX # House accessible during daytime, week days? Yes \_\_\_ No Best day and time for access? Day \_\_\_\_\_ Time Best time to call Work phone number(s) Best time to call



436 MacLaren Street Ottawa, Ontario K2P 0M8 Tel: (613) 236-7179 Fax: (613) 236-7202

CMHC Research Pro	oject: Finished Basements	and Potential Health Effects Due to	Molds
Date:	, 1995	House I.D.#:	
participate in CMHC Due to Molds. We understand that some successful completion	's research project on Finishave read the disclaimed disruption to the interior fi	shed Basements and Potential Health lar below and agree to this condition inish in the basement will be necessary les made to gain access to the basement d.	Effects . We for the
Disclaimer			
that molds that are kn in the basement wall Scanada Consultants' in your house. Corre	nown to affect human healt cavitites. Canada Mortga responsibility is limited to active measures which may	and mold testing in your house, it is per the could be found in your house basen age and Housing Corporation (CMHO informing you of the presence of such be required as a result of these finding as any other costs which may be incurr	nent or C) and molds gs will
Home owner's signat	ures		

# CMHC Finished Basements and Health Problems Due to Mold House I.D.#: Data collection forms Date:\_\_\_\_ **Exterior Observations Checklist:**(sketch on back of this page) Grading $\square$ , Eaves troughing $\square$ , Downspouts $\square$ , Trees near house or foundation $\square$ , Buildings near house $\square$ , Cracks in foundation wall $\square$ , Type of foundation $\square$ . Comments: **Exterior Conditions at Time of Inspection:** On site Temperature: \_\_\_\_\_ °C, Relative Humidity: \_\_\_\_\_ %, Time: \_\_\_\_\_ Comments: \_\_\_\_ **Interior Conditions:** Main floor - Temperature: \_\_\_\_ °C, Relative Humidity: \_\_\_\_ %, Room: \_\_\_\_\_ Basement Finished Area - Temp.:\_\_\_\_°C, RH:\_\_\_\_\_%, Room:\_\_\_\_\_ Basement Unfinished Area - Temp.:\_\_\_\_°C, RH:\_\_\_\_\_%, Room:\_\_\_\_ Wood Moisture Readings: (for correlation with long term RH) Readings taken in: finished basement□, unfinished basement□ Location 1: WMR: \_\_\_\_, Temperature: \_\_\_\_°C, Component: \_\_\_\_\_\_ Location 2: WMR: \_\_\_\_, Temperature: \_\_\_\_°C, Component: \_\_\_\_\_\_ Location 3: WMR: \_\_\_\_, Temperature: \_\_\_\_°C, Component: \_\_\_\_\_\_ Location 4: WMR: \_\_\_\_, Temperature: \_\_\_\_°C, Component: \_\_\_\_\_\_ Location 5: WMR: \_\_\_\_, Temperature: \_\_\_\_°C, Component: \_\_\_\_\_\_ **Basement Wall Composition:** (Interior Finish/Insulation/Framing/Foundation) From inside to outside (include AVB, air spaces, moisture barriers, exterior membranes on foundation): Finished area type 1 Finished area type 2 (or floor detail) Comments: Basement Ceiling: (type of finish) Connection of wall cavity to room air:

Plan of House and Site Sketch:	House I.D.#:			
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Basement Sketch:				
Substitution.				
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	1			

Mold	sam	pling	9
IVECTOR	Detti	PILLL	-

Location	Sample I.D.#	Swab	Tape	Comment
				procedure or specific details if needed)

Description of	access t	o the	cuvicy.	(80110141	Procedure	O.	Specific	acuilib	II IIOOGOG	,

#### Wood Moisture and Temperature in Wall or Floor cavities:

Location	corresponds to sample #	Wood Moisture Reading	Wood temp. (°C)	Comments
[.				

Comments Observation	ons:		
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Scanada Consultants Limited 436 MacLaren Street Ottawa, Ontario K2P 0M8

Tel: (613) 236-7179 Fax: (613) 236-7202

CMHC Research Project: Finished Basements and Potential Health Effects Due to Molds

Date:	, 1995	House I.D.#:
Release Form		
inspected the locatio	ns tested in the basen	nent. We accept the conditions of ment wall(s) or floor as seen.
Home owner's signa	ture	
	<u> </u>	

Molds in Finished Basements			
	Results of ce	llophane tape	APPENDIX 2 and swab samples
		_	
		•	
	 <del></del>		

House ID	Mold - Cellophane Tape	Quantity	Mold - Swabs	Quantity
P1-1A			Acremonium kiliense	
			Arthrobotrys oligospora	
			Aspergillus sydowii	
 			Aspergillus versicolor	abundant\
			Exophiala jeanselmii	
			Gliomastix luzulae	very abundant
			Penicillium brevicompactum	
			Penicillium glabrum	
			Phialophora verrucosa	abundant
Ì			Verticillium lecanii	
P1-1B			Acremonium kiliense	
			Aspergillus Versicolor	abundant
			Myxotrichum ochraceum	
			Oidiodendron cereale	abundant
			Oidiodendron griseum	abundant
			Penicillium chrysogenum	
ļ			Stachybotrys atra	
			Verticillium lecanii	
P1-1C	Oidiodendron cereale	abundant	Myxotrichum ochraceum	
1			Oidiodendron cereale	abundant
			Stachybotrys atra	
P1-1D	Trichocladium opacum	not abundant		
P1-1D	Trichocladium opacum	abundant		
P2-1	Chaetomium cochlioides		Aspergillus sydowii	
İ	Scopulariopsis fusca		Aspergillus versicolor	1. No. 1.
1			Chaetomium cochlioides	very abundant
			Malbranchia arcuata	
			Penicillium chrysogenum	
			Penicillium glabrum	
			Penicillium variabile	abundant
			Scopulariopsis fusca	abundant
			Verticillium lecanii	

House ID	Mold - Cellophane Tape	Quantity	Mold - Swabs	Quantity
P2-2	Asologillos versicolor		Aspergillus ochraceus	
	Malbranchia arcuata		Aspergillus versicelor	very abundant
	Myxotrichum ochraceum		Malbranchia arcuata	
	Scopulariopsis fusca		Myxotrichum ochraceum	very abundant
			Scopulariopsis fusca	very abundant
P2-3	Ascotricha chartarum			
	Aspergillus versicolor			
	Exophiala sp.	very abundant		
	Malbranchia arcuata			
	Scopulariopsis fusca			
M1-1	No fungi		Ascergillus versiculor	
			Cladosporium sphaerospermum	
			Eurotium herbariorum	
			Penicillium chrysogenum	
M1-2	unidentifiable fungal cells		Cladosporium sphaerospermum	
			Penicillium glabrum	
<b>M</b> -7	Stud & Joist: fungus a species of Oph	niostoma		
	rarely, turn up in air sample			
M4-4	Penicillium sp.	small amount	Penicillium corylophilum	very abundant
			Penicillium commune	not very abundant
			Penicillium glabrum	uncommon
			Trichoderma Vinde	rueou uon
			Some pink yeast	
M9-1			Mucor hiemalis	moderately abundant
			Penicillium simplissimum	moderately abundant
M9-2	unidentifiable		Penicillium commune	abundant
			Penicillium hirsutum	abundant
M11-1	Gliomastix murorum	abundant	Acremonium kiliense	not abundant
	Microascus cinereus	not abundant	Blastobotrys nivea	moderately abundant
	Myxotrichum ochraceum		Gliomastix murorum	very abundant
	Oidiodendron cereale	moderately abund	Malbranchia arcuata	moderately abundant
	Stachybornys atra	abundant	Penicillium chrysogenum	not abundant

9539MOLD.XLS 2

House ID	Mold - Cellophane Tape	Quantity	Mold - Swabs	Quantity
M11-2			Acremonium psaliotae	moderately abundant
			Aspergillus versicolor	exceedingly abundant
M12-1			Aspergillus versicolor	infrequent
			Cladosporium cladosporioides	infrequent
			Pink yeast	
M-13	Aspergillus sp. possibly A. candidus	abundant		
	Aspergillus sp. possibly A. herbariorum	common		
	Aspergillus sp. possibly A. versicolor	abundant		
	Microascus cirrosus	abundant		
	Petriella setifera	very abundant		
M14-1A			Penicillium chrysogenum	common
			Penicillium variabile	very abundant
			* P. variabile/P. chrysogenum = ca. 4	/1
M14-1B			Penicillium chrysogenum	very abundant
			Penicillium variabile	common
			Ulocladium botrytis	common
M14-1C	Malbranchia arcuata	common	Malbranchia arcuata	very abundant
	Microascus cirrosus	very abundant	Oidiodendron cereale	not abundant
			Penicillium chrysogenum	not abundant
M14-2			Aspergillus versicolor	common
			Blastobotrys nivea	not abundant
			Malbranchia arcuata	very abundant
			Oidiodendron cereale	not abundant
M15-1	Stachybotrys atra	very abundant	Chaetomium cochlioides	very abundant
	Sterigmatobotrys macrocarpa	very abundant		
M16-1	Penicillium species	abundant	Aspergillus versicolor	common
			Penicillium canescens	not abundant
			Penicillium chrysogenum	very abundant
M20-1A	Paecilomyce's varioti	very abundant		
			Aspergillus sydowi	not abundant
}			Blastobotrys nivea	common
			Gliomastix murorum	not abundant
			Penicillium corylophilum	not abundant
			Penicillium duclauxii	abundant
			Penicillium rugulosum	very abundant
			Torulomyces lagena	not abundant

House ID	Mold - Cellophane Tape	Quantity	Mold - Swabs	Quantity
M20-1B			Blastobotrys nivea	common
			Penicillium corylophilum	not abundant
			Penicillium duclauxii	very abundant
M20-2	Aspergillus sp. possibly A. herbariorum	abundant	Aspergillus versicolor	common
			Penicillium chrysogenum	not abundant
			Penicillium corylophilum	not abundant
M20-3	Asperoillis versicalor	very abundant	Aspergillus Veisicolor	not abundant
	Cladosporium sphaerospermum	common	Cladosporium sphaerospermum	abundant
	Stachybotry's atra	very abundant	Cylindrocladium?	abundant
			Penicillium chrysogenum	not abundant
			Stachybotry's atra	COMMINION
M20-4	Aspergillus sp. possibly A. cervinus	abundant	unidentified, possibly a basidiomycete	1 colony
M21-4	Cladosporium cladosporioides	common	Blastobotrys nivea	common
	some dark hyphal masses		Microsphaeropsis olivacea	abundant
	abundant insect frass		Cladosporium sphaerospermum	not common
			Penicillium waksmanii	very abundant
			Yeast	abundant
M21-5	Aspergillus sp. possibly A. cervinus	very abundant	Penicillium aurantiogriseum	uncommon
M22-2A	Cladosporium sphaerospermum	very abundant	Cladosporium sphaerospermum	very abundant
			Penicillium chrysogenum	abundant
M22-2B	a few unidentifiable fungal hypae		Cladosporium sphaerospermum	not common
	abundant crystalline material		Penicillium chrysogenum	very abundant
			Penicillium variabile	abundant
M22-2C	Aspergillus sp. possibly A. candidus	abundant	Aspergillus candidus	abundant
	Scopulariopsis brevicaulis	not abundant	Aspergillus sydowi	abundant
			Aspenditus versicolor	ne Labundani
			Penicillium chrysogenum	very abundant
			Penicilium crustosum	abundant
			Scopulariopsis brevicaulis	very abundant
			Sporothrix schenckii	abundant

9539MOLD.XLS

House ID	Mold - Cellophane Tape	Quantity	Mold - Swabs	Quantity
M23-1A	Alternaria alternata	very abundant	Acremonium strictum	very abundant
	Gliocladium sp.	very abundant	Alternaria alternata	very abundant
	Scopulariopsis brevicaulis	common	Penicillium chrysogenum	very abundant
	Stachybotrys atra	very abundant		
M23-1B	Acremonium sp.	abundant	Geomyces pannorus	very abundant
	Aspergillus sp. possibly A. herbariorum	common	Penicillium chrysogenum	abundant
	Chaetomium murorum	very abundant	Phoma herbarum	abundant
M23-1C			Aspergillus versicolor	very abundant
			Penicillium chrysogenum	not abundant
			Pink yeast	common
M23-1D	Aspergillus sp.	common	Cladosporium cladosporioides	not abundant
	Geomyces pannorus	abundant	Geomyces pannorus	very abundant
	Scopulariopsis brevicaulis	common	Penicillium chrysogenum	very abundant
	Ulocladium botrytis	common	Ulocladium botrytis	not abundant
M23-1E	Aspergillus versicolor	very abundant		
	Geomyces pannorus	very abundant		
	Scopulariopsis brevicaulis	common		
M23-2A	Acremonium kiliense	common	Acremonium kiliense	very abundant
	Scopulariopsis brevicaulis	abundant	Cladosporium sphaerospermum	common
	Scopulariopsis fusca	abundant	Geomyces pannorus	very abundant
			Penicillium chrysogenum	not abundant
			Scopulariopsis brevicaulis	very abundant
M23-2B	Alternaria alternata	not abundant	Acremonium strictum	very abundant
	abundant plant fibre		Aspergillus versicolor	not abundant
			Cladosporium sphaerospermum	not abundant
			Penicillium chrysogenum	not abundant
M24-1	very little mould		Aspergillus versicolor	not abundant
	some <i>Penicillium</i> sp.	not abundant	Cladosporium cladosporioides	not abundant
	plant fibres		* NB only 6 colonies on 2 plates	
M24-2	abundant plant fibres		Aspergillus versicolor	not abundant
1	some dark fungal cells in the plant fibres		Cladosporium cladosporioides	very abundant
	possibly Aureobasidium		Penicillium commune	not abundant
ŀ			Penicillium waksmanii	not abundant
			Rhizopus nigricans	not abundant

		APPEND
	Temperature,	Relative Humidity re Reading Summa
	AA OOG TATOTZEG	te Keauing Summa

House ID	, (P1 🚎		House ID	Р3	
		Basement Exposed Wood Moisture Readings		- Annu Californitis and	Basement Exposed Wood Moisture Readings
Date of Visit	Oct. 11/95	Area Component Temp WMR	Date of Visit	Oct. 18/95	Area Component Temp WMR
Year Built	1959	1, unfin joist 19.2 8.50	Year Built	1986	1. unfin joist 20,6 7.00
Year Basement Finished	1 1979	2. unfin joist 219.3 29.00	Year Basement Finishe	ed 1989	2 unfin joist 21.1 7.00
	100	3. unfin joist 20.0 9.00		t non-contract termina	3. unfin joist 20,8 7,25
Exterior Cond's		4. unfin joist 20,0 9 00	Exterior Cond's		4. unfin joist 22.4 6.50
Time of Day	10:00 AM	5, unfin joist 19.8 8.50	Time of Day	5:35 PM	5 unfin joist 21.1 7.25
Temperature, °C	14.0	LIGHT DESCRIPTION OF THE PARTY OF A CHESTAGE BASE BASE AND BASE OF THE CONTRACT OF THE CONTRAC	Temperature, °C	18,8	
Rel. Humidity, %	74.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	34.5	Basement Wall/Floor Cavity Conditions
rion riannany, 70		Location W/F Cavity Temp WMR Corrected MC	i ton translatty, 70	- 1- 1- 10 - 10 - 10 - 10 - 10 - 10 - 1	Location W/F Cavity Temp WMR Corrected MC
Interior Cond's		1 wall 18.0 11.75 16.5	Interior Cond's		
Main Fir Temp, °C	18.8	2 wall 18.5 11.75 16.5	Main Fir Temp, °C	20.1	
Main Fir RH, %	61.3	3 wall 18.6 14.50 20.7	Main Fir RH, %	44:3	2 wall 20.8 6.75 approx 9.0
Room data taken	. Terra (1990-1971) - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4	Room data taken	territoria della distributa	eficial in the company of the proposition of the company of the co
Room data taken	living room		Room data taken	living room	
Daniel Sinished Anna			Boot Finished Ave a		5
Bsmt Finished Area	Sin 29 Audio	Meld- Farmed	Bsmt Finished Area	1 272125m5s-	
Temperature, °C	17.5	Molds Found	Temperature, °C	20.9	Molds Found
Rel. Humidity, %	60.2	# of Species Identified: 16 # Considered Toxigenic 3	Rel. Humidity, %	44,0	# of Species Identified: none
Room data taken	workroom	# Considered Toxigenic 3	Room data taken	rec room	# Considered Toxigenic n/a
Description of Association			De-111-5-1-1-1		
Bsmt Unfinished Area	i Birth Seren		Bsmt Unfinished Area	and a supplication of the co	
Temperature, °C	19.0		Temperature, °C	21.0	
Rel. Humidity, %	60.0		Rel. Humidity, %	44,4	•
Room data taken	furnace area		Room data taken	furnace room	
House ID	P2				
1 10000 12		Basement Exposed Wood Moisture Readings		•	
Date of Visit	Oct. 12/95	Area Component Temp WMR			
Year Built	1920s∵	1, unfin joist 16,2 10,75			
Year Basement Finished	"Therease is "The talking"	2. unfin joist 16.0 11.00			
, our Buconneill , milenet	*	3. unfin joist 16.0 10.75			
Exterior Cond's		4. unfin joist 15.8 12.50			
Time of Day	9:30 AM	5. unfin joist 16.0 9.25			
Temperature, °C	14.5				
Rel. Humidity, %	63.7	Basement Wall/Floor Cavity Conditions			
itel. Humany, 70	·	Location W/F Cavity Temp WMR Corrected MC			
Interior Cond's		1 wall 14.8 28.00 above 28			
Interior Cond's	16,7	1 wall 14.8 28.00 above 28 2 wall 14.7 29.00 above 28			
Main Fir Temp, °C					
Main Fir RH, %	57.3	3 wall 14.4 28.00 above 28			
Room data taken	living room	4			
Bsmt Finished Area		51-170-10-10-10-12-20-20-20-20-20-20-20-20-20-20-20-20-20			
Temperature, °C	16.5	Molds Found			
	64.5	# of Species Identified:			
Rel. Humidity, % Room data taken	rec room	# or Species identified. # Considered Toxigenic 1			
1,00m data takon	"- Log Logist	" Settotagrad Louidania - 1 T T A			
			1		
Bsmt Unfinished Area					
Bsmt Unfinished Area Temperature, °C	15.5				
Bsmt Unfinished Area Temperature, °C Rel. Humidity, %	15.5 64				

storage

Room data taken

43.0						Rel. Humidity, %	37.5					
17.2							20.7					
						Bsmt Unfinished Area						
rec room	# Consider	ea i oxigenic	n/	а		Room data taken	rec room	# Consider	red Toxigenic		ı	
								•			•	
				_		' '					_	
40.0	54-14: <del>*</del>											
	5	-	•	-	•			5	wall	16.8	7.75	10.8
kitchen		-		•	•	Room data taken	living room	4	wall	14.9	7.00	9.9
	3	wall	15.7	7.50	10.5	Main Fir RH, %	35.1	3	wall	14.8	8.50	12.2
		floor				Main Flr Temp, ℃	21.4	2	wall	17.1	7.50	10.4
	1	wall				Interior Cond's		1	wall	20.4	7.50	9.8
	Location	W/F Cavity			Corrected MC			Location			WMR	Corrected MC
67.0						Rel. Humidity, %	76.6					
-8.3						Temperature, °C	4.2					
9:00 AM	5, unfin =	stud	16.1	7.50		Time of Day	1:45 PM	5. fin =	trim	21.0	6.00	
	4. unfin	stud	15.9	6.50		Exterior Cond's		4. fin	stud	20.8	< 6	
	3. unfin	stud	15.9	< 6				3. unfin	stud	21.1	< 6	
d 1970s	2. unfin	joist	16.0	8.00		Year Basement Finished	1989	2. unfin	joist	21.7	< 6	
1950	1. unfin	joist	15.9	8.50		Year Built	1962	1. unfin	joist	21.1	< 6	
Nov. 9/95	Area	Component	Temp	WMR		Date of Visit	Nov. 15/95	Area	•		WMR	-
	Basement :	Exposed Wood	Moisture	Reading	s			Basement	Exposed Woo	d Moistu	re Readi	ngs
M2						House ID	M4					
living space						· ·						
37.0						Rel. Humidity, %	44.0					
23.5						Temperature, °C	18.9					
						Bsmt Unfinished Area		001101001	gorno			
,		3						•				
living space	•					Room data taken				none		
37.0	# of Specie	s Identified:		5		Rel. Humidity, %	36.0	Molds Fou	nd			
23.5	Molds Four	nd				Temperature, ºC	15.0					
						Bsmt Finished Area		6	wall	19.5	7.25	9.6
	5	- 4,10	-				•	5	wall	17.7	8.25	11.4
hallway	4	wall	19.6	9.50	12.9	Room data taken		4	e e e e e e e e e e e e e e e e e e e			
38.1	3	wall	19.3	8.75	11.8	Main Flr RH, %	48.0	3		*		*
22.8	2	wall	19.6	11.20	15,4	Main Flr Temp, °C	18.9	•	wall			12.4
	1	wall	18.6	8.25	11.3	Interior Cond's		1		,		9.2
	Location	W/F Cavity	Temp	WMR	Corrected MC					-		Corrected MC
58.0	Basement	Wall/Floor Cavit	y Conditi	ons		•		Basement	Wall/Floor Car	vity Cond	litions	
6.5						-	2.6					
9:45 AM	5. fin	stud	21.1	7.00		Time of Day	9:00 AM	5. fin				
	4. unfin	stud	20.4	7.25		Exterior Cond's		4. fin				
	40.	ioist	21.1	6.50			,502, ,500		•			
		•	20.5	6.50								
1946		•										
Nov. 8/95		•				Date of Visit	Nov 15/95		Exposed Woo			193
		Exposed Wood										
	9:45 AM 6.5 58.0  22.8 38.1 hallway  23.5 37.0 living space  M2  Nov. 9/95 1950 d 1970s  9:00 AM -8.3 67.0  19.1 39.6 kitchen  16.2 43.4 rec room	1946 1. unfin d 1983 & 1992 2. unfin 3. unfin 4. unfin 9:45 AM 6.5 58.0 Basement Location 1 22.8 2 38.1 3 hallway 4 5 5 23.5 Molds Four 37.0 # of Specie living space # Consider 23.5 37.0 living space # Consider 23.5 37.0 living space # Consider 23.5 37.0 living space # Consider 23.5 37.0 living space # Consider 23.5 37.0 living space # Consider 23.5 37.0 living space # Consider 23.5 37.0 living space # Consider 23.5 37.0 living space # Consider 23.5 37.0 living space # Consider 23.5 37.0 living space # Consider 23.5 37.0 living space # Consider 23.5 37.0 living space # Consider 23.5 37.0 living space # Consider 23.5 4.2 4.3 4 # of Specie 7.5 4.3 4 # of Specie 7.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5	1946 d 1983 & 1992 d 1983 & 19	1946 d 1983 & 1992 2. unfin joist 20.5 3. unfin joist 21.1 4. unfin stud 20.4 9:45 AM 5. fin stud 21.1 6.5 58.0  Basement Wall/Floor Cavity Condition Location W/F Cavity Temp 1 wall 18.6 22.8 2 wall 19.6 38.1 3 wall 19.6 5 23.5 Molds Found 37.0 # of Species Identified: living space # Considered Toxigenic  M2  Basement Exposed Wood Moisture Area Component Temp 1 unfin joist 15.9 4 unfin stud 15.9 4 unfin stud 15.9 9:00 AM 5, unfin stud 15.9 4 unfin stud 15.9 4 unfin stud 15.9 5 16.2 Basement Wall/Floor Cavity Condition Location W/F Cavity Temp 1 wall 15.8 19.1 2 floor 15.7 39.6 3 wall 15.7 kitchen 4 5  16.2 Molds Found 43.4 # of Species Identified: non rec room # Considered Toxigenic n//	1946 d 1983 & 1992 l 2. unfin joist 20.5 6.50 3. unfin joist 21.1 6.50 4. unfin stud 20.4 7.25 9:45 AM 5. fin stud 21.1 7.00 6.5 58.0 Basement Wall/Floor Cavity Conditions Location W/F Cavity Temp WMR 1 wall 18.6 8.25 22.8 2 wall 19.6 11.20 38.1 3 wall 19.6 11.20 38.1 3 wall 19.6 9.50 5	1946	1946   1. unfin	1946   1. unfin   joist   19.7   7.50   2. unfin   joist   20.5   6.50   3. unfin   joist   21.1   6.50   3. unfin   joist   21.1   6.50   4. unfin   stud   20.4   7.25   7.50	1946	1946	1946 1. unfin joist 19.7 7.50	1946 1. unfin   polst   19.7   7.50   Vear Built   1962   1. unfin   polst   6.50   3. unfin   polst   20.5   6.50   3. unfin   polst   20.1   6.50   4. unfin   stud   20.4   7.25   5.50   5.

House ID	M5		House ID	₩7.**	
	***	Basement Exposed Wood Moisture Readings			Basement Exposed Wood Moisture Readings
ate of Visit	Nov. 16/95	Area Component Temp WMR	Date of Visit	Nov: 23/95	Area Component Temp WMR
ear Built	1968	1. furnace joist 17.6 6.75	Year Built	Aug 1993	1. untin joist 21.4 < 6
ear Basement Finished	1970, 1994	2. furnace joist 17.4 6.50	Year Basement Finished	1993	2. unfin joist 21.3 <6
		3. office joist 19.2 6.00		r. and	3. unfin stud 21.5 <6
xterior Cond's		4. office dr-jmb 20.0 6.50	Exterior Cond's		4 fum joist 21,6 <6
ime of Day	9:05 AM	5. rec m joist 19.7 6.00	Time of Day	10:00 AM	5. unfin joist 21.8 < 6
emperature, °C	0:7	TANKAN MANAMATAN MENERALA MENERA	Temperature, °C	0.0	
el. Humidity, %	75.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	90.0	Basement Wall/Floor Cavity Conditions
on Hammany, 70	### Y ####	Location W/F Cavity Temp WMR Corrected MC	red. Frantiaky, 70		
terior Cond's		15.0 10.50 15.0	Interior Cond's		
	19.3	2 wall 14.2 7.00 10.0	Main Fir Temp. °C	20.2	anta 19 februaria anta anta di manda d
		3 wall 15.8 6.75 approx 9.0		and the segment of th	1b. wall 16.8 14.50 21.4
lain Fir RH, %	37.6		Main Fir RH, %	26.3	2a. wall 8.7 16.00 25.6
oom data taken	hallway	4 wall 15.8 11.50 16.5	Room data taken	living room	25. wall 9.1 9.00 13.8
		5 wall 17.6 7.00 9.5			2c. wall 16.4 9.50 13.4
smt Finished Area	mm 42.2×.1/-	M 11: 5: - J	Bsmt Finished Area	in Table 2011	3 wall 15.5 10.00 14.2
•	19.6	Molds Found	Temperature, ºC	20.9	4 wall 16.3 7.50 10.5
tel. Humidity, %	36,5	# of Species Identified: none	Rel. Humidity, %	26.9	5 wall 18.2 7.50 10.2
loom data taken	rec room	# Considered Toxigenic n/a	Room data taken	rec room	
			1		Molds Found
smt Unfinished Area			Bsmt Unfinished Area		# of Species Identified: none
emperature, °C	19.7		Temperature, °C	21.9	# Considered Toxigenic n/a
Rel. Humidity, %	36.3		Ref. Humidity, %	26.7	70 W WO
Room data taken	fumace room		Room data taken	furnace room	
	neter and hints			THE PROPERTY OF STATE	
louse ID	M6	December 5 and 14/2 and Maintenan December 5	House ID	M8	
	ich in <u>Stage w</u> ke	Basement Exposed Wood Moisture Readings		.1.L.M.SPLESSRULKEST 1	Basement Exposed Wood Moisture Readings
	Nov. 20/95	Area Component Temp WMR	Date of Visit	Nov. 23/95	Area Component Temp WMR
ear Built	Jul-94	1. wkshp joist 17.8 7.50	Year Built	1994	1. fin backing 17.0 7.00
'ear Basement Finished	1994	2. wkshp joist 16.5 6.50	Year Basement Finished	1994, 1995	1. fin joist 17.0 9.00
		3. Iving are joist 18.6 7.00			1. fin plate 17.8 7.50
xterior Cond's		4. fum stud 18.9 6.50	Exterior Cond's		1. fin stud 19.8 < 6
ime of Day	11:00 AM	5. fum stud 19:3 7:50	Time of Day	2:30 PM	1. fin stud 19.6 6.50
emperature, °C	0.4		Temperature, °C	2,8	Southern State Comment of the Commen
tel. Humidity, %	55.6	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	91.3	Basement Wall/Floor Cavity Conditions
	a 50 7-7 E	Location W/F Cavity Temp WMR Corrected MC		тины тт 4. дарын	Location W/F Cavity Temp WMR Corrected MC
nterior Cond's		1 wall 17.3 11.50 16.22	Interior Cond's		1 wall 15.1 8.50 12.2
lain Fir Temp, ⁰C	19.9	2 wall 16.2 10.00 14.11	Main Fir Temp, °C	19.9	2 wall 13.5 7.00 10.1
fain Fir RH, %	32.5	3 wall 17:1 10.00 13:98	Main Flr RH, %	38.6	3 wall 15.0 9.50 13.6
Room data taken	living room	4 wall 15:0 9:50 13:59	Room data taken	living room	
		5	, to the date taken		
smt Finished Area		mander transfer in states in the second of the second state of the second secon	Bsmt Finished Area		
emperature, °C	18.6	Molds Found	Temperature, °C	-19:7	Molds found
Rel. Humidity, %	35.8	# of Species Identified:	Rel. Humidity, %	37.9	Ask at
tei. Humidity, 76 toom data taken	workshop	# Considered Toxigenic n/a	Room data taken	rec room	# of Species Identified: none # Considered Toxigenic n/a
				en en promotion de la companya de la	and 188
Ssmt Unfinished Area			Bsmt Unfinished Area		
emperature, °C	n/a		Temperature, °C	n/a	
Rel. Humidity, %	n/a		Rel. Humidity, %	ar a law report of the	
Room data taken	n/a		Room data taken	n/a	

House ID	M9		House ID	M11	
	direct to be .	Basement Exposed Wood Moisture Readings		. 18. G17538947	Basement Exposed Wood Moisture Readings
Date of Visit	Nov. 27/95	Area Component Temp WMR	Date of Visit	Nov. 28/95	Area Component Temp WMR
ear Built	1987	1. unfin joist 18.2 7.00	Year Built	1921	1, fin strap 24,0 ≤6
ear Basement Finished		2. unfin joist 18.8 7.00	Year Basement Finished		2. fin stud 21.0 7.00
	Marini - da -	3. unfin stair 18.8 7.00		२०२० च्याच्याच्याच्याच्याः -	3. unfin stud 20.3 7,00
Exterior Cond's		4. unfin stud : 18.8 8.00	Exterior Cond's		4. fin bkrig 19.9 6.50
ime of Day	2:00 PM	5. unfin joist 19.8 7.50	Time of Day	3:00 PM	5. fin joist 24.6 7.00
emperature, °C	-8.0	The Mark to Pier Teach Sections 1997 Teach 1997 Teach	Temperature, °C	-8.0	
tel. Humidity, %	79.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	61.0	Basement Wall/Floor Cavity Conditions
,, ,,		Location W/F Cavity Temp WMR Corrected MC	real Hallhaity, 70		Location W/F Cavity Temp WMR Corrected MC
nterior Cond's		1 wall 14.2 <6 approx 10.0	Interior Cond's		1a wall 9.5 11.50 17.82
fain FIr Temp, °C	19.4	2 wall 15.0 < 6 approx 10.0	Main Fir Temp, °C	20.7	1b floor 8.6 15.50 24.74
fain Fir RH, %	35.2	_ DIN TELL TO LED & DAMANYO THANK , BRESHARD PLATED & WYSCHER CO.	Main Fir RH, %	30.0	2 wall 10.9 10.50 15.82
Room data taken	dining room	3 wall 14.5 7.00 9.93 4 wall 19.1 < 6 approx 10.0	Room data taken	tito His Joseph Land	2 wall 14:3 8:00 12:01
toom data tatom	during tooili		100m data taken	dining room	4
Ssmt Finished Area			Bsmt Finished Area		5
emperature, °C	17.2	Molds Found	Temperature, °C	_ 20.6	
Rel. Humidity, %	39.2	and the state of t	Rel. Humidity, %	32.2	Molds Found
Room data taken	suite	# of Species Identified: 4 # Considered Toxigenic 0	Room data taken	HITTE TENT	
Notifi dala lakeji	. Suite	# Considered Toxigenic	Room data taken	rec room	
Ssmt Unfinished Area			Bsmt Unfinished Area		# Considered Toxigenic 2
emperature, °C	18.3		Temperature, °C	∵ · 20:0	
Rel. Humidity, %	34.8		Rel. Humidity, %	34.2	
•	furnace room		Room data taken	APPL A CLASSICAL CONTRACTOR	•
(OOII) qata takeii	Turria Ce TOUT		Nooili data takeli	fumace room	
louse ID	M10		House ID	M12	
	4 ***	Basement Exposed Wood Moisture Readings	1.0200.2	maa yeeryaaa	Basement Exposed Wood Moisture Readings
Date of Visit	Nov. 28/95	Area Component Temp WMR	Date of Visit	Nov. 29/95	Area Component Temp WMR
rear Built	1970	1. fin stud 17.6 <6	Year Built	1984	1 unfin joist 18.8 8.50
Year Basement Finished		2. fin trim 18.9 ≤6	Year Basement Finished	1. 2. 3. 1. 9. 1. 1. 2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	2 unfin stud 18.0 8.00
	WHITE 27.1 - 1.	3: unfin joist 20.1 < 6	Total Bedoment Interior	***************************************	3. lant-rm stud 25.7 10.00
Exterior Cond's		4. unfin stud 19.9 < 6	Exterior Cond's		4. plant-m strap 22.4 10.00
ime of Day	9:00 AM	5. unfin stud 19.9 < 6	Time of Day	6:00 PM	5. turn. joist 23.6 7.50
		har soft gen intelliging a confession of a con-	Temperature, °C	-12.0	
Rel. Humidity, %	-8.0 73.0	Basement Wall/FloorCavity Conditions	Rel. Humidity, %	66.0	Basement Wall/Floor Cavity Conditions
	WASHER P.E.	Location W/F Cavity Temp WMR Corrected MC	7	linda Alexandra	Location W/F Cavity Temp WMR Corrected MC
nterior Cond's		1. wall 151 8.00 11.5	Interior Cond's		1a wall 14,5 9.00 13.0
	20.1	2 wall 17.2 7.00 9.5	Main Fir Temp, °C	19.0	1b wall 16.6 9.00 12.6
lain Fir RH, %	31.5	3a wall 18.5 7.50 10.1	Main Fir RH, %	31.5	2a wall 16.6 7.50 10.4
Room data taken	living room	3b wall 15.5 8.00 11.4	Room data taken	living:	2b wall 17.2 7.50 10.3
	<i>₩</i>	4 wall 47.0 9.00 12.6		mmmai (3.177 €2 1.4	3a wall 14.7 9.00 12.9
Bsmt Finished Area		5 wall 15.7 8.5 12.1	Bsmt Finished Area		3b wall 16.1 9.00 12.7
remperature, °C	18.6	Annania distribitation of the Article of the Articl	Temperature, °C	18,3	
Rel. Humidity, %	34.2	Molds Found	Rel, Humidity, %	38.3	5 wall 16.8 8.00 11.2
Room data taken	rec room	# of Species Identified: none	Room data taken	rec room	Manus VIII II II II II II II II MAANAA MAANAA MAANAA MAANAA MAANAA MAANAA MAANAA MAANAA MAANAA MAANAA MAANAA M
	The sale beauty 12. F	# Considered Toxigenic n/a		e 1.7ap:1.122	Molds Found
Ssmt Unfinished Area		and to	Bsmt Unfinished Area		# of Species Identified:
emperature, °C	19:5		Temperature, °C	18.0	# Considered Toxigenic 1
Rel. Humidity, %	31.6		Rel. Humidity, %	38.5	
Room data taken	fumace		Room data taken	furnace room	
			- 100111		

House ID	M13		House ID	M15	
	s in a Magazina (+g	Basement Exposed Wood Moisture Readings		BR As S. Samerammen, 1	Basement Exposed Wood Moisture Readings
ate of Visit	Dec. 4/95	Area Component Temp WMR	Date of Visit	Dec. 5/95	Area Component Temp WMR
'ear Built	1969	1. untin joist 20.1 6.50	Year Built	1988	1. fin
ear Basement Finished	1985	2. unfin joist 19.8 6.75	Year Basement Finished	1988	2. unfin joist 15.0 < 6
	a. april literation i	3. fin bamboard 19.8 6.75	'		3, fin joist 15.7 < 6
Exterior Cond's		4. finbamboard 20:1 8:50	Exterior Cond's		4. fin step 15.9 7.75
Time of Day	9:00 AM	5. unfin stud 19.8 6.75	Time of Day	9:00 AM	5: unfin strap 18.8 7.00
remperature, ºC	-4.0		Temperature, °C	-14,0	MANAGEMENT TO SEE THE SECOND S
Rel, Humidity, %	84.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	80.0	Basement Wall/Floor Cavity Conditions
Rei, Hullidity, 76	04.0	Location W/F Cavity Temp WMR Corrected MC	real Harmany, 70		Location W/F Cavity Temp WMR Corrected MC
		1a wall 18.4 6.50 approx. 9.0	Interior Cond's		1 wall 14.2 >30 above 28
nterior Cond's	20.4		Main Fir Temp, °C	17.8	2 wall 11.7 7.00 10.3
Main Fir Temp, °C	" ""	16 wall 19.2 6.50 approx 9.0	Main Fir RH, %	33.0	3 wall 2.0 6.00 approx 11.0
Main Flr RH, %	32.2		Room data taken	TO US OF SHIP STATE OF STATE O	Could be the term of the control of
Room data taken	living room		Room data taken	living room,	11/11/19 - 19/11/19 11/19 14/16/16/16/16/16/16/16/16/16/16/16/16/16/
		4 wal 17.0 9.00 13.4	Boot Sinister & Acces		5
Bsmt Finished Area			Bsmt Finished Area	tre e saciali. La	Male 5
· • · · · · · · · · · · · · · · · · · ·	. 19.9		Temperature, °C	17.4	Molds Found
Rel. Humidity, %	32,0	Molds Found	Rel. Humidity, %	31,4	# of Species Identified: 3
Room data taken	rec room.	# of Species Identified: 5	Room data taken	rec room	# Considered Toxigenic 1
		# Considered Toxigenic	t		
Bsmt Unfinished Area			Bsmt Unfinished Area		
Temperature, °C	20,1		Temperature, °C	17.5	
Rel. Humidity, %	30.0		Rel. Humidity, %	30.1	
Room data taken	fumace m		Room data taken	furnace room	
House ID	M14		House ID	M16	
	State of the state	Basement Exposed Wood Moisture Readings		a february	Basement Exposed Wood Moisture Readings
Date of Visit	Dec. 4/95	Area Component Temp WMR	Date of Visit	Dec. 5/95	Area Component Temp WMR
Year Built	1970	1, fin	Year Built	1957	1) unfin joist 16.4 8.25
Year Basement Finished	1995	2, fin strap 24.6 <6	Year Basement Finished	1960, 1995	2. unfin stud 16.4 7.25
	te a transmit	3, fin dr-jamb 23.8 ≤6			3. unfin backing 16.0 7.50
Exterior Cond's		4, fin trim 23.4 <6	Exterior Cond's		4. unfin joist beam 16:7 6:50
Time of Day	4:00 PM	5. fin trim 24.4 <6	Time of Day	1:30 AM	5. fin shelf leg 16.0 < 6
Temperature, °C	-2.0	TAMENAAMANIN TEENE ETT ATALAMANINETEELI JAMIN 124 WAA	Temperature, °C	-9,0	semintalstock : MV Transford 中華PP med whell signed April 12000年 1200年 1200年
Rel. Humidity, %	70.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	65.0	Basement Wall/Floor Cavity Conditions
Rei. Humany, 70	page 10.04	Location W/F Cavity Temp WMR Corrected MC	1 (0 ) [ ]		Location W/F Cavity Temp WMR Corrected MC
Interior Cond's		1 wall 16.6 < 6 ∴ approx 9.0	Interior Cond's		1 wall 9.2 7.50 11.5
	20.7	Name of the state		-101	2 wall 6.3 8.00 12.8
Main Fir Temp, °C	20,7 28.6	2 wall 19:1 10:00 13.7 3a wall 13.1 8,50 12:5	Main Fir RH, %	19.1 44.6	3 wall 15.2 13,00 19,0
Main Fir RH, %	11 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3a wall 13.1 8.00 11.8		living room	the same and the s
Room data taken	living :		Room data taken	HALLIGHTOUTH	4 5
			Romt Einiched A		
Bsmt Finished Area		5 wall 16:0 0.52 20.7/above	Bsmt Finished Area	. DETWO 1275 A. SHIP	Madda Count
Temperature, ºC	20.8		Temperature, °C	15.0	Molds Found
Rel. Humidity, %	31.9	Molds Found	Rel. Humidity, %	49.0	# of Species Identified: 3
Room data taken	bedroom	# of Species Identified:	Room data taken	rec room	# Considered Toxigenic
		# Considered Toxigenic 1			
Bsmt Unfinished Area			Bsmt Unfinished Area		
Temperature, °C	n/a		Temperature, °C	17.5	
Rel. Humidity, %	n/a		Rel. Humidity, %	49,0	
Room data taken	n/a		Room data taken	furnace room	

Scanada Consultants Limited Page 5

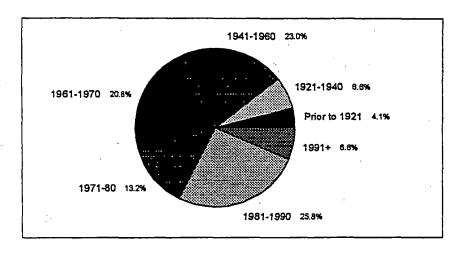
House ID	M17		House ID	M19 <u></u>	<del></del>
TIOUGE ID	** : *** 18/444	Basement Exposed Wood Moisture Readings	1.0030.12	WIIO.	Basement Exposed Wood Moisture Readings
Date of Visit	Dec. 6/95	Area Component Temp WMR	Date of Visit	Dec. 12/95	Area Component Temp WMR
Year Built	1987	1, unfin stud 18.4 6.75	Year Built	1983	1 unfin stud 21:1 < 6
Year Basement Finished	mercan of all the party of the con-	2. unfin joist 19.5 < 6	Year Basement Finished	and the same of th	2, unfin stud 20.0 <6
7-02. 2500///0/// / //////	HWARM I 4	3. unfin stud 18.5 < 6	. our Budoment i misriet	, , , , , , , , , , , , , , , , , , , ,	3. unfin ioist 25.2 <6
Exterior Cond's		4. untin joist 20.3 6.50	Exterior Cond's		4-unfin stud 21.2 < 6
Time of Day	≝ 11:00 AM	-5, unfin strap 19.6 <6	Time of Day	6:00 PM	5 unfin stud 21.0 < 6
Temperature, °C	-4.0	19 at any minimal at an indication of the second	Temperature, °C	-16.0	Table Carati a hillimit hare of the at the caratina and
Rel. Humidity, %	50.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	54.0	Basement Wall/Floor Cavity Conditions
, , , ,	· Tell ST. Josefe *	Location W/F Cavity Temp WMR Corrected MC	,, ,,	17 M. 4712 . 15	Location W/F Cavity Temp WMR Corrected MC
Interior Cond's		1 wall 10.9 < 6 approx 10.0	Interior Cond's		1 wal( 16.1 < 6 approx 9.0
Main Flr Temp, °C	18.4	2 wall 14.6 6,25 approx 9.0	Main Fir Temp, °C	25.6	2 wall 12.5 < 6 approx 10.0
Main Fir RH, %	34.0	3 wall 18.8 <6 approx 9.0	Main Flr RH, %	24.0	3 wall 14.1 < 6 approx 10.0
Room data taken	living room	4 wall 18.8 6.50 approx 9.0	Room data taken	living room	4 wall 18.4 <6 approx 9.0
1		67		dema (1999)	5
Bsmt Finished Area		er's from samely as well as the second and second controlled full form	Bsmt Finished Area		NEXT OF CHARLES AND COMMISSION OF THE STATE OF CHARLES AND COMMISSION OF THE STATE
Temperature, ºC	16,9	Molds Found	Temperature, °C	18.9	Molds Found
Rel. Humidity, %	35,5	# of Species Identified: none	Rel. Humidity, %	29.0	# of Species Identified: Frone
Room data taken	rec room	# Considered Toxigenic n/a	Room data taken	rec room	# Considered Toxigenic n/a
	· · · · · · · ·			2	the strain of th
Bsmt Unfinished Area			Bsmt Unfinished Area		
Temperature, °C	18.0		Temperature, °C	20,6	
Rel. Humidity, %	30.7		Rel. Humidity, %	28.0	
Room data taken	furnace room		Room data taken	fumace room	
· — — — — — — — — — — — — — — — — — — —					
House ID	√, M18		House ID	M20	
		Basement Exposed Wood Moisture Readings	ì		Basement Exposed Wood Moisture Readings
Date of Visit	Dec. 12/95	Area Component Temp WMR	Date of Visit	Dec. 13/95	Area Component Temp WMR
Year Built	1970	1. unfinstud	Year Built	1960	1: unfin joist 17.3 < 8
Year Basement Finished	1980	2. unfin stud 22.1 <6	Year Basement Finished	d 1986	2. unfin
L <u>.</u> .		3. fin Joist 26.2 <6			3. unfin post 17.4 6.50
Exterior Cond's		4. fin stud 22.5 <6	Exterior Cond's		4. unfin joist 27.7* < 6
Time of Day	9:00 AM	5. unfin joist 24.0 <6	Time of Day	5:00 PM	5. unfin stud 21.0 < 6
Temperature, °C	-19.0		Temperature, °C	-16.0	
Rel. Humidity, %	55.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	51.0	Basement Wall/Floor Cavity Conditions
		Location W/F Cavity Temp WMR Corrected MC			Location W/F Cavity Temp WMR Corrected MC
Interior Cond's	`	1 wall 15.1 10.50 15.0	Interior Cond's	80 80 Labor 160	1 wall 11.8 10.50 15.6
Main Fir Temp, °C	20.7 25.9	2 wall 18.1 10:00 13.8 wall 15.9 9:50 13.5	Main Fir Temp, °C	20.6	2 wall 3.5 <6 approx 11.0
Main Flr RH, % Room data taken		3.	Main Flr RH, %	24.0	3 wall 10.4 <6 approx 10.0
Room data taken	living room		Room data taken	living room	<b>4</b> <b>5</b>
Bsmt Finished Area		5 Company of the second	Bsmt Finished Area		
Temperature, °C	18.9	Molds Found		17.8	Molds Found
Rel. Humidity, %	30.8	# of Species Identified:	Temperature, °C Rel. Humidity, %	17.8 26.0	# of Species Identified: 16
Room data taken	rec room	# Considered Toxigenicn/a	Room data taken	bedroom	# Considered Toxigenic 3
TOOM data taken	ICO IOOH	# Couplesed Loyificule #######	TOOM data taken	" nealoom	# Considered Toxidediic 환전실하다
Bsmt Unfinished Area			Bsmt Unfinished Area		
Temperature, °C	22.0		Temperature, °C	19.4	
Rel. Humidity, %	23.0		Rel. Humidity, %	19,4 30.0	
· · · · · · · · · · · · · · · · · · ·	Committee Committee or				
Room data taken	furnace room		Room data taken	furnace room	

House ID	M21		House ID	M23	
	tuse -MARTHER	Basement Exposed Wood Moisture Readings			Basement Exposed Wood Moisture Readings
Date of Visit	Dec. 14/95	Area Component Temp WMR	Date of Visit	Dec. 18/95	Area Component Temp WMR
Year Built	1962	1. fin stud 14.2 7.50	Year Built	1992	1. fin joist 17.9 8.00
Year Basement Finished	Contract of the contract of	2. fin stud 14.2 7.50	Year Basement Finished	ACT TO SECRETARIAN AND AND AND AND AND AND AND AND AND A	2. fin joist 18.6 6.50
Tea Dascinent insinca		3. unfin joist 21.5 < 6	Tear Basement I manes	introduced Margin 19	3. fin   joist   18.2   7.00
Exterior Cond's		4. unfin joist 21.2 < 6	Exterior Cond's		4. fin joist 17.8 7.00
Time of Day	9:00 AM	5. fin closet 14.4 9.50	Time of Day	7:00 PM	5. fin joist 18.2 7.00
Temperature, °C	-14:0	The Militarian and to Propose in the Commence of the Commence	Temperature, °C	-13.0	MAS AND PROPERTY OF A PROPERTY OF THE PROPERTY
Rel. Humidity, %	64.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	72.0	Basement Wall/Floor Cavity Conditions
iton Hannany, 70	: · · · <b>727</b>	Location W/F Cavity Temp WMR Corrected MC	real reality, 70		Location W/F Cavity Temp WMR Corrected MC
Interior Cond's		1 wall 13.8 10,50 15.3	Interior Cond's		1 wall 9.6 < 6 approx 10.0
Main Fir Temp, °C	16/1	2 wall 5.9 9.00 14.2	Main Fir Temp, °C	20.0	2 wall 10.1 10.00 15.2
Main Fir RH, %	49.0	3 wall 11.0 10.40 16.7	Main Fir RH, %	38.0	3 wall 9.5 10.00 15.3
Room data taken	living room	4a wall 1.9 11.50 19.6	Room data taken	living room	4
Toom data taken		4b wall -2.1 11.50 20.6	i toom data takon	PARTIES - PERE	5
Bsmt Finished Area		5a wall 11.7 9.00 13.4	Bsmt Finished Area		Marie (New York) and Grand (Marie VEAC) - 40 (Phillippe Marie )
Temperature, °C	15.6	5b wall 13.2 9.50 13.9	Temperature, °C	17.2	Molds Found
Rel. Humidity, %	43.0		Rel. Humidity, %	37.0	# of Species Identified: 16
Room data taken	tec tootti		Room data taken	rec room	# Considered Toxigenic 3
TOOM data taken		Molds Found	Troom data takon		W Cottsidered Toxigetiic
Bsmt Unfinished Area		# of Species Identified: 7	Bsmt Unfinished Area		
Temperature, °C	16.7	# Considered Toxigenic 1	Temperature, °C	15.0	
Rel. Humidity, %	41.0	# Considered Toxigenio and Table	Rel. Humidity, %	42.0	
Room data taken	furnace room		Room data taken	cold room	
Nooni data taken	idinaco room		TOOM data taken	Toole 100th	
House ID	M22		House ID	M24	
	and make the same	Basement Exposed Wood Moisture Readings	ļ	et. Makees, Aut. 2000	Basement Exposed Wood Moisture Readings
Date of Visit	Dec, 15/95	Area Component Temp WMR	Date of Visit	Dec. 19/95	Area Component Temp WMR
Year Built	1982	1. fin stud 20,2 <6	Year Built	1971	1. unfin joist 20.2 < 6
Year Basement Finished	1982, 1986	2. fin stud 20.3 ≤6	Year Basement Finished	1 1975, 1993	2: unfin stud 19.7 8.00
		3. unfin joist 20.1 ≤6			3. unfin joist 20:5 <6
Exterior Cond's		4. unfin joist 20.4 < 6	Exterior Cond's	1.53	4. unfin stud 18.7 7.00
Time of Day	10:00 AM	5. fin closet 19.4 9.00	Time of Day	10:00 AM	5. unfin stud 18.9 6,50
Temperature, °C	-8.0		Temperature, °C	17.0	
Rel. Humidity, %	75.0	Basement Wall/Floor Cavity Conditions	Rel. Humidity, %	59.0	Basement Wall/Floor Cavity Conditions
		Location W/F Cavity Temp WMR Corrected MC	ł		Location W/F Cavity Temp WMR Corrected MC
Interior Cond's	The same of the sa	1 wall 14:1 7:50 10.8	Interior Cond's	A consistency of the constant	1 wall 16.8 8.50 11.89
Main Flr Temp, ℃	19.4	2 wall 12.5 9.50 14.0	Main Fir Temp, °C	21,1	2 wall 17.2 < 6 approx 8.0
Main Flr RH, %	33.0	3 wall 17.5 6.50 approx 9.0	Main Fir RH, %	44.0	3
Room data taken	living room	4 wall 13.4 < 6 approx 10.0	Room data taken	living room	4 wall 30.0 ≤6 approx 7.0
		5			5 wall 13:6 ≤6 approx 9.0
Bsmt Finished Area			Bsmt Finished Area		
Temperature, °C	19,4	Molds Found	Temperature, °C	18.9	Molds Found
Rel. Humidity, %	33.0	# of Species Identified: 9	Rel. Humidity, %	44.0	# of Species Identified: 5
Room data taken	rec & bdrm	# Considered Toxigenic 2	Room data taken	rec room	# Considered Toxigenic 1
Bsmt Unfinished Area			Bsmt Unfinished Area		
Temperature, °C	n/a		Temperature, °C	19.4	
	and the second s		1 '	Control of the Contro	
	n/a		IRel. Humidity. %	410	
Rel. Humidity, %	n/a n/a		Rel. Humidity, % Room data taken	41.0 furnace room	

Molds in Finished Baser	nents		· · · · · · · · · · · · · · · · · · ·
	Statistical Summary	y of Inspections of 405	APPENDIX
			· Impieu pasement
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### STATISTICAL SUMMARY OF INSPECTIONS OF 405 FINISHED BASEMENTS

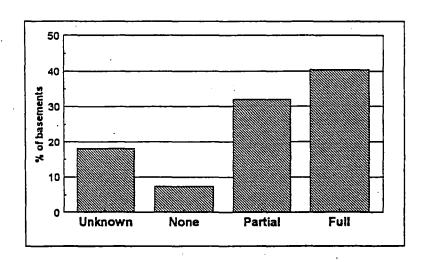
#### Year of house construction



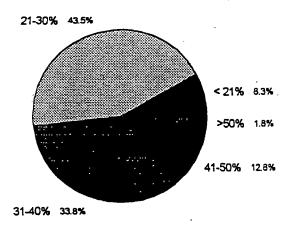
#### Other characteristics

- 83 % poured foundations
- 42 % have 100% wall coverage; others usually exceed 50% coverage
- Mostly drywall or wood panels for finishing: 7% still with exposed plastic or insulation
- Few basements with exterior insulation/drainage layer

#### Extent of wall insulation



#### **Basement relative humidity**



#### Are there moisture problems?

- Roughly 75% say there are no moisture problems
- Roughly 50% have some obvious evidence of past problems: spalling concrete, efflorescence, stains, mould
- About 35% have basement smell identified as "musty", "mouldy", or "earthy"

#### Preliminary analysis

- No real correlation of basement RH and moisture problems, evidence of problems, outdoor temperature, etc.; however, dampest basements tended to show up when outside temperatures moderate (rather than very cold)
- Older basements more apt to show problems
- Smells unrelated to type of floor covering (eg. rugs)