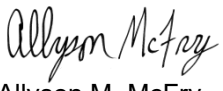
FIELD SAMPLING TEST REPORT	
Customer Information	UL ENVIRONMENT INC. caresults@ul.com 2211 Newmarket Parkway Suite 106 Marietta GA 30067
HB Project Number	2009049NY
Date Received	October 2, 2020
Testing Laboratory Location	UL Environment - Marietta, 2211 Newmarket Parkway, Marietta, GA 30067-9399 USA
Authorized by	 Allyson M. McFry Chemistry Laboratory Director

Reported data were obtained from samples and sampling information as provided by the on-site investigator. These data and general information are provided to assist the investigator in an overall IAQ assessment. UL Environment employees did not collect samples nor visit the site where samples were collected. Interpretation of data is left to the client or persons who conducted the field work.

Sources of additional information are also available from:

1. Molhave, L., "Volatile Organic Compounds, Indoor Air Quality and Health," The 5th International Conference on Indoor Air Quality and Climate, Toronto, Canada, 1990.
2. State of California Air Resources Board, Indoor Air Quality Guideline for Formaldehyde in the Home, August, 2004. http://www.arb.ca.gov/research/indoor/formaldGL08-04.pdf
3. Morey, P. R., Horner, W. E., Epstien, B. L., Worthan, A. G., and Black, M. S. (2000). Indoor Air Quality in Nonindustrial Occupational Environments, in R.L. Harris (Ed.) Patty's Industrial Hygiene (5th ed., pp. 3149-3241). John Wiley & Sons.

Date Prepared: October 15, 2020
Product #: 1001053392-3363197
Report #: 1001053392-3363197

UL ID:	FLD01 (V)
Sample Date:	September 29, 2020
Volume (L):	18.2

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description	Ex1_BR4_Pre
Total Volatile Organic Compounds	34.7 µg/m³

CAS Number	Compound	Concentration	
		µg/m³	ppb
71-43-2	Benzene	BQL	BQL
100-41-4	Benzene, ethyl	BQL	BQL
108-88-3	Toluene (Methylbenzene)	BQL	BQL
1330-20-7	Xylenes (Total)	BQL	BQL

Date Prepared: October 12, 2020
Product #: 1001053392-3363197
Report #: 1001053392-3363197

UL ID:	FLD01F (V)
Sample Date:	September 29, 2020
Volume (L):	18.0

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description	Field Blank
Total Volatile Organic Compounds	BQL

CAS Number	Compound	Concentration	
		µg/m³	ppb
71-43-2	Benzene	BQL	BQL
100-41-4	Benzene, ethyl	BQL	BQL
108-88-3	Toluene (Methylbenzene)	BQL	BQL
1330-20-7	Xylenes (Total)	BQL	BQL

Date Prepared: October 12, 2020
Product #: 1001053392-3363197
Report #: 1001053392-3363197

UL ID:	FLD02 (V)
Sample Date:	September 29, 2020
Volume (L):	18.0

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description	Ex1_BR4_Post
Total Volatile Organic Compounds	31.7 µg/m³

CAS Number	Compound	Concentration	
		µg/m³	ppb
71-43-2	Benzene	7.0	2.2
100-41-4	Benzene, ethyl	BQL	BQL
108-88-3	Toluene (Methylbenzene)	2.1	0.6
1330-20-7	Xylenes (Total)	BQL	BQL

Date Prepared: October 12, 2020
Product #: 1001053392-3363197
Report #: 1001053392-3363197

UL ID:	FLD03 (V)
Sample Date:	September 29, 2020
Volume (L):	18.0

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description	Blank
Total Volatile Organic Compounds	BQL

CAS Number	Compound	Concentration	
		µg/m³	ppb
71-43-2	Benzene	BQL	BQL
100-41-4	Benzene, ethyl	BQL	BQL
108-88-3	Toluene (Methylbenzene)	BQL	BQL
1330-20-7	Xylenes (Total)	BQL	BQL

Date Prepared: October 12, 2020
Product #: 1001053392-3363197
Report #: 1001053392-3363197

UL ID:	FLD04 (V)
Sample Date:	September 29, 2020
Volume (L):	18.1

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description	EX2_LR_Hall_Pre
Total Volatile Organic Compounds	40.4 µg/m³

CAS Number	Compound	Concentration	
		µg/m³	ppb
71-43-2	Benzene	BQL	BQL
100-41-4	Benzene, ethyl	BQL	BQL
108-88-3	Toluene (Methylbenzene)	4.3	1.1
1330-20-7	Xylenes (Total)	BQL	BQL

Date Prepared: October 12, 2020
Product #: 1001053392-3363197
Report #: 1001053392-3363197

UL ID:	FLD05 (V)
Sample Date:	September 29, 2020
Volume (L):	18.1

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description	Ex2_LR_Hall_Post
Total Volatile Organic Compounds	1,050 µg/m³

CAS Number	Compound	Concentration	
		µg/m³	ppb
71-43-2	Benzene	89.4	28.0
100-41-4	Benzene, ethyl	9.1	2.1
108-88-3	Toluene (Methylbenzene)	26.8	7.1
1330-20-7	Xylenes (Total)	13.1	3.0

VOC samples analyzed by thermal desorption/mass spectrometry according to UL Environment Method 55-CH-W0866 (based on USEPA Compendium Method TO-17 and ASTM 6196).

Individual compounds and TVOC (total volatile organic compounds) are calibrated relative to toluene.

UL Environment's quality assurance program monitors blank sorbent media to ensure that the residual background does not exceed UL Environment's quality objective of ≤ 36 ng of total VOC.

*Indicates best NIST/EPA/NIH library match only.

BQL denotes below quantifiable level of 2 µg/m³ (instrument calibration using authentic standard).

Field Blanks: Reported concentrations based on 18.0 L of volume sampled for VOCs. Actual field blanks are not intended to have a measurable amount of air sampled.

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Date Prepared: October 12, 2020
Product #: 1001053392-3363197
Report #: 1001053392-3363197

Project #_2009049NY

1001053392 - 3363197

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ACTIVE CHEMICAL SAMPLING CHAIN OF CUSTODY

Company: ULVS (Healthy Buildings)	Contact: CARESULTS@UL.COM	Project/P.O./Job Number: 2009049NY ~~-EXP 1~~ SN
Address: 3251 Old Lee Highway #100 Fairfax, VA 22030	Phone: 571.655.7919	Sample Date: 29SEP2020
	Fax: 703.323.4440	Investigator: SAM.HORNER

Please check the appropriate fields; Use separate COC for each sample method.

VOLATILE ORGANICS: IVOC SCAN: _____ TOP 20 IVOC _____ TVOC ONLY _____ OTHER B.T.E.X.

ALDEHYDE SCAN: _____ FORMALDEHYDE ONLY _____ | **ANALYSIS: LEED V4 ___ LEED V4.1 ___ OTHER B.T.E.X.**

TAT: Standard __X__ Next Day Rush*_____ * Rush charges apply; please call in advance to confirm availability

Comments:

UL ID	SAMPLE ID/ TUBE ID	SAMPLE LOCATION/ DESCRIPTION	START TIME	STOP TIME	TIME SAMPLED (MIN)	PUMP ID #	FLOW RATE (L/MIN)	VOLUME (L)
F01V	2009049NY-01A/ s/n B26560	Ex1_BR4_Pre	12:19	13:19	60	2018	0.303 L	18.19 L
F02V	2009049NY-01B/ s/n B26593	Ex1_BR4_Post	12:19	13:19	60	2018	0.300 L	18.00 L
F03V	2009049NY-01C/ s/n B27049	Field Blank	12:19	13:19	60	2018		n/a

Released By: SAM.HORNER (Print/Sign)	Date/Time: 01OCT2020	Method of Shipment: UPS NEXT D 1Z F82 417 25 9340 9128
Received By: Dan Benton	Date/Time: 10/2/20 10: AM	Sample Condition: Acceptable

3363197

3363197

Description: VOC Tubes and DNPH Cartridges

Customer: UL Environment Inc.

Received Date: 2020-OCT-02 12:31:03 PM

Aurora Project No.: 1001053392
Order No.:
Oracle Project No.:

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Date Prepared: October 12, 2020
Product #: 1001053392-3363197
Report #: 1001053392-3363197

Project # 2009049NY

1001053392-3363197

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ACTIVE CHEMICAL SAMPLING CHAIN OF CUSTODY

Company: ULVS (Healthy Buildings)	Contact: CARESULTS@UL.COM	Project/P.O./Job Number: 2009049NY
Address: 3251 Old Lee Highway #100 Fairfax, VA 22030	Phone: 571.655.7919 Fax: 703.323.4440	Sample Date: 30SEP2020
		Investigator: SAM.HORNER

Please check the appropriate fields; Use separate COC for each sample method.

VOLATILE ORGANICS: IVOC SCAN: _____ TOP 20 IVOC _____ TVOC ONLY _____ OTHER ___B.T.E.X.

ALDEHYDE SCAN: _____ FORMALDEHYDE ONLY _____ | **ANALYSIS: LEED V4 ___ LEED V4.1 ___ OTHER _B.T.E.X.**

TAT: Standard __X__ Next Day Rush*_____ * Rush charges apply; please call in advance to confirm availability

Comments:

UL ID	SAMPLE ID/ TUBE ID	SAMPLE LOCATION/ DESCRIPTION	START TIME	STOP TIME	TIME SAMPLED (MIN)	PUMP ID #	FLOW RATE (L/MIN)	VOLUME (L)
FotV	2009049NY-02A/ s/n B26473	Ex2_LR_Hall_Pre	08:25	09:25	60	2018	0.302 L	18.14 L
FosV	2009049NY-02B/ s/n B26422	Ex2_LR_Hall_Post	12:52	13:52	60	2018	0.302 L	18.09 L
FolFV	2009049NY-02C/ s/n B26882	Field Blank						n/a 18

Released By: SAM.HORNER (Print/Sign)	Date/Time: 01OCT2020	Method of Shipment: UPS 1Z F82 417 25 9340 9128
Received By: Dan Boxton	Date/Time: 10/2/20 10:30 AM	Sample Condition: Acceptable

3363197

3363197

Description: VOC Tubes and DNPH Cartridges

Customer: UL Environment Inc.

Received Date: 2020-OCT-02 12:31:03 PM

Aurora Project No.: 1001053392
Order No.:
Oracle Project No.:

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Date Prepared: October 12, 2020
Product #: 1001053392-3363197
Report #: 1001053392-3363197