FIELD SAMPLING TEST REPORT	
Customer Information	UL VERIFICATION SERVICES, INC. LST.FAI.HBDCResults@ul.com 3251 Old Lee Highway, Suite 100 Fairfax VA 22030 USA
HB Project Number	2011006NY_B13
Date Received	November 11, 2020
Testing Laboratory Location	UL Environment - Marietta, 2211 Newmarket Parkway, Marietta, GA 30067-9399 USA
Method	USEPA Compendium Method TO-17 ; ASTM 6196
Authorized by	 Allyson M. McFry Chemistry Laboratory Director

Sampling: 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. Interpretation of data is left to the client or persons who conducted the field work.

This test is accredited and meets the requirements of ISO/IEC 17025 as verified by ANSI National Accreditation Board. Refer to certificate and scope of accreditation AT-1297.

Date Issued: November 23, 2020
Product #: 1001079085-3456401
Report #: 1001079085-3456401

UL ID:	SV1TFDF
Sample Date:	November 10, 2020
Volume (L):	18.0

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description	B13_BR_04_Field Blank
Total Volatile Organic Compounds	BQL

CAS Number	Compound	Concentration	
		µg/m³	ppb
109-67-1	1-Pentene	4.4	1.5

Date Issued: November 23, 2020
Product #: 1001079085-3456401
Report #: 1001079085-3456401

UL ID:	SV1TFD
Sample Date:	November 10, 2020
Volume (L):	19.6

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description	B13_BR_04_Pre
Total Volatile Organic Compounds	569 µg/m³

CAS Number	Compound	Concentration	
		µg/m³	ppb
541-02-6	Cyclopentasiloxane, decamethyl	91.6	6.0
77-68-9	Propanoic acid, 2-methyl-, 3-hydroxy-2,2,4-trimethylpentyl ester (component of Texanol)	84.7	9.6
25265-77-4	2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate	71.1	8.0
80-56-8	Pinene, alpha (2,6,6-Trimethyl-bicyclo[3.1.1]hept-2-ene)	24.5	4.4
66-25-1	Hexanal	23.2	5.7
64-19-7	Acetic acid	20.0	8.1
5989-27-5	D-Limonene*	14.5	2.6
540-97-6	Cyclohexasiloxane, dodecamethyl	14.3	0.8
107-50-6	Cycloheptasiloxane, tetradecamethyl-*	13.1	0.6
78-93-3	2-Butanone (Methyl ethyl ketone, MEK)	11.6	3.9
127-91-3	Pinene, beta (6,6-Dimethyl-2-methylene-bicyclo[3.1.1]heptane)	10.8	1.9
91-20-3	Naphthalene	9.8	1.9
112-41-4	1-Dodecene	9.6	1.4
111-76-2	Ethanol, 2-butoxy	9.4	2.0
58175-57-8	2-Propyl-1-pentanol*	8.8	1.7
124-19-6	Nonyl aldehyde (Nonanal)	8.8	1.5
142-96-1	n-Butyl ether	8.7	1.6
244074-78-0	Pentanoic acid, 2,2,4-trimethyl-3-hydroxy-, isobutyl ester*	7.3	0.8
141-63-9	Pentasiloxane, dodecamethyl	7.1	0.4
98-56-6	Benzene, 1-chloro-4-(trifluoromethyl)-*	6.9	0.9
110-62-3	Pentanal	6.9	2.0
108-88-3	Toluene (Methylbenzene)	6.8	1.8
5444-75-7	Benzoic acid, 2-ethylhexyl ester*	6.7	0.7
67-64-1	Acetone	6.4	2.7
98-01-1	Furfural (2-Furaldehyde)	6.3	1.6
108-95-2	Phenol	6.2	1.6
112-40-3	Dodecane	5.9	0.9
71-36-3	1-Butanol (N-Butyl alcohol)	5.8	1.9
144-19-4	1,3-Pentanediol, 2,2,4-trimethyl	5.7	0.9
71-41-0	1-Pentanol (N-Pentyl alcohol)	5.5	1.5
287-92-3	Cyclopentane	5.2	1.8
124-13-0	Octanal	5.2	1.0
112445-69-9	Hexanoic acid, 2-ethyl-, nonyl ester*	4.2	0.4

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UL ID:	SV1TFD
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Volume (L):	19.6

CAS Number	Compound	Concentration	
		µg/m³	ppb
79-41-4	2-Propenoic acid, 2-methyl*	4.1	1.2
813-58-1	Butanoic acid, 2,2-diethyl-*	3.9	0.7
100-52-7	Benzaldehyde	3.7	0.9
110-12-3	2-Hexanone, 5-methyl	3.7	0.8
140-67-0	Estragole (4-Allylanisole)	3.5	0.6
89-79-2	Cyclohexanol, 5-methyl-2-(1-methylethenyl)-, [1R-(1a,2a,5a)]-*	3.2	0.5
100-42-5	Styrene	3.2	0.8
111-87-5	1-Octanol	3.2	0.6
91-57-6	Naphthalene, 2-methyl	3.0	0.5
99172-18-6	3,5-Heptadienal, 2-ethylidene-6-methyl-*	2.8	0.5
123-86-4	Acetate, butyl	2.8	0.6
1330-20-7	Xylenes (Total)	2.8	0.6
1000163-57-0	1,3-Cyclopentadiene, 5,5-dimethyl-2-propyl-*	2.7	0.5
1000191-08-0	1-Hydroxy-4,4-dimethylcyclohexanecarbonitrile*	2.7	0.4
106-44-5	Phenol, 4-methyl (p-Cresol)*	2.6	0.6
142-62-1	Hexanoic acid	2.5	0.5
103-11-7	2-Propenoic acid, 2-ethylhexyl ester (2-Ethylhexyl acrylate)	2.5	0.3
112-31-2	Decanal*	2.5	0.4
20324-33-8	2-Propanol, 1-[2-(2-methoxy-1-methylethoxy)-1-methylethoxy]-*	2.3	0.3
1000099-98-7	1-Ethylpropyl 2-ethylhexanoate*	2.3	0.3
25551-13-7	Trimethylbenzene (All Isomers)	2.2	0.4
57-55-6	1,2-Propanediol (Propylene glycol)	2.1	0.7
620-02-0	2-Furancarboxaldehyde, 5-methyl*	2.1	0.5
115-95-7	Linalyl acetate (1,6-Octadien-3-ol, 3,7-dimethyl-, acetate)*	2.1	0.3

UL ID:	SV2TFD
Sample Date:	November 10, 2020
Volume (L):	18.3

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description	B12_BR_04_Post
Total Volatile Organic Compounds	55.4 µg/m³

CAS Number	**Compound**	**Concentration**	
		µg/m³	**ppb**
100-42-5	Styrene	10.9	2.6
91-20-3	Naphthalene	5.7	1.1
71-43-2	Benzene	4.4	1.4
80-62-6	Methyl methacrylate (2-Propenoic acid, 2-methyl-, methyl ester)	4.3	1.1
98-01-1	Furfural (2-Furaldehyde)	3.2	0.8
108-95-2	Phenol	3.2	0.8
100-52-7	Benzaldehyde	2.7	0.6
19549-87-2	1-Heptene, 2,4-dimethyl*	2.7	0.5
108-88-3	Toluene (Methylbenzene)	2.6	0.7
98-86-2	Acetophenone (Ethanone, 1-phenyl)*	2.6	0.5
42781-12-4	2-Propanone, 1-(1-methylethoxy)-*	2.4	0.5
91-57-6	Naphthalene, 2-methyl	2.4	0.4
90-05-1	Phenol, 2-methoxy*	2.2	0.4
614-16-4	Benzenepropanenitrile, a-oxo-*	2.2	0.4
64-19-7	Acetic acid	2.1	0.9
92-52-4	1,1'-Biphenyl*	2.0	0.3
141-32-2	Butyl acrylate (2-Propenoic Acid, butyl ester)	2.0	0.4

UL ID:	SV3TFD
Sample Date:	November 10, 2020
Volume (L):	17.9

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description	B12_BR_04_HZA
Total Volatile Organic Compounds	1,850 µg/m³

CAS Number	Compound	Concentration	
		µg/m³	ppb
100-42-5	Styrene	72.9	17.1
91-20-3	Naphthalene	69.8	13.3
64-19-7	Acetic acid	64.8	26.4
91-57-6	Naphthalene, 2-methyl	59.5	10.2
92-52-4	1,1'-Biphenyl*	48.8	7.7
208-96-8	Acenaphthylene*	45.7	7.3
108-95-2	Phenol	42.9	11.1
106-44-5	Phenol, 4-methyl (p-Cresol)*	36.9	8.4
80-71-7	2-Cyclopenten-1-one, 2-hydroxy-3-methyl-*	36.6	8.0
105-67-9	Phenol, 2,4-dimethyl	36.5	7.3
71-43-2	Benzene	34.8	10.9
19784-98-6	Phenol, 2-methoxy-5-(1-propenyl)-, (E)-*	33.5	5.0
621-58-9	Phenol, 5-ethenyl-2-methoxy-*	32.7	5.3
90-05-1	Phenol, 2-methoxy*	32.2	6.3
98-83-9	a-Methylstyrene (iso-Propenylbenzene; (1-Methylethenyl)benzene)	29.5	6.1
98-86-2	Acetophenone (Ethanone, 1-phenyl)*	29.4	6.0
93-51-6	Phenol, 2-methoxy-4-methyl*	28.2	5.0
110-98-5	2-Propanol, 1,1'-oxybis- (Dipropylene glycol)	26.5	4.8
91-10-1	Phenol, 2,6-dimethoxy*	26.3	4.2
614-16-4	Benzenepropanenitrile, a-oxo-*	25.2	4.2
95-13-6	Indene*	25.1	5.3
98-00-0	2-Furanmethanol*	24.5	6.1
21835-01-8	2-Cyclopenten-1-one, 3-ethyl-2-hydroxy-*	22.9	4.4
90-00-6	Phenol, 2-ethyl*	22.0	4.4
120-92-3	Cyclopentanone	21.8	6.3
1330-20-7	Xylenes (Total)	19.5	4.5
108-88-3	Toluene (Methylbenzene)	19.4	5.1
95-48-7	Phenol, 2-methyl*	18.9	4.3
827-54-3	Naphthalene, 2-vinyl	18.0	2.9
42781-12-4	2-Propanone, 1-(1-methylethoxy)-*	18.0	3.8
2758-18-1	2-Cyclopenten-1-one, 3-methyl*	17.6	4.5
2785-89-9	Phenol, 4-ethyl-2-methoxy*	17.5	2.8
100-47-0	Benzonitrile	16.9	4.0
19549-87-2	1-Heptene, 2,4-dimethyl*	16.8	3.3
1000383-15-8	Carbonic acid, decyl nonyl ester*	16.8	1.2

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UL ID:	SV3TFD
Sample Date:	November 10, 2020
Volume (L):	17.9

CAS Number	Compound	Concentration	
		µg/m³	ppb
85-01-8	Phenanthrene*	16.4	2.2
498-60-2	3-Furaldehyde*	16.3	4.2
767-60-2	1H-Indene, 3-methyl*	16.3	3.1
698-71-5	Phenol, 3-ethyl-5-methyl*	16.2	2.9
2177-47-1	2-Methylindene*	15.7	3.0
64-00-6	Phenol, 3-(1-methylethyl)-, methylcarbamate*	15.6	2.0
86-73-7	2,2-Metaylenebiphenyl (Fluorene)*	15.2	2.2
100-41-4	Benzene, ethyl	14.2	3.3
50390-78-8	1-Methoxy-2-methyl-4-(methylthio)benzene*	13.8	2.0
1000309-57-5	Oxalic acid, 2-isopropylphenyl pentadecyl ester*	13.8	0.8
2523-37-7	9H-Fluorene, 9-methyl-*	13.5	1.8
130876-99-2	5,8-Decadien-2-one, 5,9-dimethyl-, (E)-*	13.3	1.8
1121-05-7	2-Cyclopenten-1-one, 2,3-dimethyl-*	13.0	2.9
612-17-9	1,4-Dihydronaphthalene*	12.8	2.4
83-33-0	1H-Inden-1-one, 2,3-dihydro-*	12.7	2.3
613-46-7	2-Naphthalenecarbonitrile*	12.6	2.0
300399-34-2	2-Naphthyl N-(4-nitrophenyl)carbamate*	12.5	1.0
25265-77-4	2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate	12.4	1.4
91-22-5	Quinoline*	12.3	2.3
3944-37-4	1-Propanol, 2-(1-methylethoxy)-*	12.1	2.5
1000309-26-0	Oxalic acid, heptyl propyl ester*	11.7	1.2
80-62-6	Methyl methacrylate (2-Propenoic acid, 2-methyl-, methyl ester)	11.5	2.8
18479-57-7	2-Octanol, 2,6-dimethyl-*	11.5	1.8
116-09-6	2-Propanone, 1-hydroxy	11.4	3.8
100-52-7	Benzaldehyde	11.3	2.6
150096-60-9	3H-Benz[e]indene, 2-methyl-*	11.2	1.5
1081-75-0	Benzene, 1,1'-(1,3-propanediyl)bis*	10.8	1.3
135-77-3	1.2.4-Trimethoxybenzene*	10.6	1.5
14374-45-9	1-Phenyl-1-heptyne*	10.6	1.5
573-98-8	Naphthalene, 1,2-dimethyl*	10.5	1.6
591-11-7	2(5H)-Furanone, 5-methyl-*	10.4	2.6
141-32-2	Butyl acrylate (2-Propenoic Acid, butyl ester)	10.2	1.9
91337-07-4	2-Isopropyl-5-methyl-1-heptanol*	10.1	1.4
83-32-9	Acenaphthene	9.9	1.6
1855-47-6	1-Isopropenylnaphthalene*	9.5	1.4
15176-21-3	1,4-Dioxane, 2,5-dimethyl*	9.4	2.0
91-62-3	Quinoline, 6-methyl-*	9.0	1.5
5682-69-9	2-Cyclopenten-1-one, 3-ethyl-*	8.9	2.0
571-61-9	Naphthalene, 1,5-dimethyl-*	8.7	1.4
939-27-5	Naphthalene, 2-ethyl*	8.5	1.3
1192-62-7	Ethanone, 1-(2-furanyl)*	8.0	1.8
18927-21-4	1,2-Butanediol, 1-(2-furyl)-2-methyl-*	7.9	1.1
2438-04-2	Benzoic acid, 2-(1-methylethyl)-*	7.9	1.2
643-58-3	1,1'-Biphenyl, 2-methyl*	7.7	1.1
2785-87-7	Phenol, 2-methoxy-4-propyl-*	7.6	1.1

UL ID:	SV3TFD
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Volume (L):	17.9

CAS Number	Compound	Concentration	
		µg/m³	ppb
541-35-5	Butanamide*	7.3	2.1
61142-62-9	Benzene, 1,1'-[1-(2,2-dimethyl-3-butenyl)-1,3-propanediyl]bis-*	7.0	0.6
644-08-6	1,1'-Biphenyl, 4-methyl*	7.0	1.0
592-20-1	2-Propanone, 1-(acetyloxy)-*	6.8	1.4
692-47-7	3-Hexene, 2,2,5,5-tetramethyl-, (Z)*	6.7	1.2
5077-67-8	1-Hydroxy-2-butanone*	6.7	1.9
107-06-2	Ethane, 1,2-dichloro	6.7	1.7
1120-73-6	2-Cyclopenten-1-one, 2-methyl*	6.4	1.6
82657-04-3	Bifenthrin*	6.2	0.4
4623-04-5	2-Furancarboxylic acid, 2-tetrahydrofurylmethyl ester*	6.2	0.8
1000190-78-4	(2,3-Diphenyl-aziridin-1-yl)-(1-methyl-7-oxa-bicyclo[4.1.0]hept-2-ylidene)-amine*	6.1	0.5
104-67-6	2(3H)-Furanone, 5-heptyldihydro*	6.1	0.8
57-55-6	1,2-Propanediol (Propylene glycol)	6.0	1.9
80-56-8	Pinene, alpha (2,6,6-Trimethyl-bicyclo[3.1.1]hept-2-ene)	5.9	1.0
1901-26-4	3-Buten-2-one, 3-methyl-4-phenyl-*	5.7	0.9
1569-01-3	2-Propanol, 1-propoxy*	5.7	1.2
617-94-7	Benzenemethanol, a,a-dimethyl-*	5.6	1.0
1515-72-6	N-n-Butylphthalimide*	5.5	0.7
3652-91-3	9H-Carbazole, 2-methyl-*	5.5	0.7
17429-04-8	2-Pentanone, 5-methoxy-*	5.5	1.2
1000197-42-8	1-Buten-3-one, 1-(1-acetyl-5,5-dimethylcyclopentyl)-*	5.4	0.6
96-26-4	2-Propanone, 1,3-dihydroxy-*	5.3	1.4
620-00-8	3-Ethyl-2-hexene*	5.3	1.2
1000244-99-6	Nicotinaldehyde 4-allyl-3-thiosemicarbazone*	5.3	0.6
109-08-0	Pyrazine, methyl*	5.3	1.4
29338-49-6	1,1-Diphenyl-2-propanol*	5.2	0.6
530-48-3	Ethylene, 1,1-diphenyl-*	5.2	0.7
824-90-8	1-Phenyl-1-butene*	5.2	1.0
541-05-9	Cyclotrisiloxane, hexamethyl	5.1	0.6
1000431-56-7	Hexyl lactate*	4.8	0.7
109-06-8	Pyridine,2-methyl (2-Picoline)*	4.8	1.3
110-86-1	Pyridine	4.7	1.4
6846-50-0	TXIB (2,2,4-Trimethyl-1,3-pentanediol diisobutyrate)	4.7	0.4
5451-52-5	Formic acid, decyl ester*	4.4	0.6
61142-00-5	Cyclohexane, 1,2,4,5-tetraethyl-*	3.9	0.5
577-16-2	Ethanone, 1-(2-methylphenyl)-*	3.8	0.7
132-64-9	Dibenzofuran*	3.8	0.6
111-15-9	Ethanol, 2-ethoxy-, acetate (Ethylene glycol monoethyl ether acetate)	3.8	0.7
13741-21-4	3,7-Octadiene-2,6-diol, 2,6-dimethyl-*	3.7	0.5

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UL ID:	SV3TFD
Sample Date:	November 10, 2020
Volume (L):	17.9

CAS Number	Compound	Concentration	
		µg/m³	ppb
1193-11-9	1,3-Dioxolane, 2,2,4-trimethyl*	3.4	0.7
4359-46-0	1,3-Dioxolane, 2-ethyl-4-methyl*	3.4	0.7
17902-32-8	p-Cresol, TMS derivative*	3.4	0.5
605-39-0	2,2'-Dimethylbiphenyl*	3.4	0.4
490-65-3	Naphthalene, 1-methyl-7-(1-methylethyl)-*	3.3	0.4
71-36-3	1-Butanol (N-Butyl alcohol)	3.1	1.0
6137-06-0	2-Heptanone, 4-methyl*	3.1	0.6
4170-30-3	2-Butenal	3.1	1.1
5444-75-7	Benzoic acid, 2-ethylhexyl ester*	3.1	0.3
55255-85-1	Cyclopentane, 1,1'-[3-(2-cyclopentylethyl)-1,5-pentanediyl]bis*	2.9	0.2
109-97-7	Pyrrole*	2.8	1.0
110-13-4	2,5-Hexanedione*	2.7	0.6
930-27-8	Furan, 3-methyl*	2.6	0.8
583-61-9	Pyridine, 2,3-dimethyl*	2.6	0.6
3008-40-0	1,2-Cyclopentanedione*	2.6	0.6
2781-01-3	1,3,6-Trioxocane, 2-methyl-*	2.5	0.5
497-26-7	1,3-Dioxolane, 2-methyl*	2.3	0.6
75-12-7	Formamide (Methanamide)	2.0	1.1

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

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.

†Denotes quantified using multipoint authentic standard curve. Other VOCs quantified relative to toluene.

Values below 2.0 µg/m³ are for information purposes only. Chemical was detected, but below the quantifiable level of 0.04 µg based on a standard of 18 L air collection volume.

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.

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Project # 2011006NY_B13

1001079085-3456401

ACTIVE CHEMICAL SAMPLING CHAIN OF CUSTODY

Company: ULVS (Healthy Buildings)	Contact: CARESULTS@UL.COM	Project/P.O./Job Number: 2011006NY_B13
Address: 3251 Old Lee Highway #100 Fairfax, VA 22030	Phone: 571.655.7919 Fax: 703.323.4440	Sample Date: 10 Nov 2020 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: Two (2) Week TAT Please – Looking for results November 25th. Thank you

UL ID	SAMPLE ID/ TUBE ID	SAMPLE LOCATION/ DESCRIPTION	START TIME	STOP TIME	TIME SAMPLED (MIN)	PUMP ID #	FLOW RATE (L/MIN)	VOLUME (L)
V01	2011006NY-13A/ s/n B26919	B13 _BR_04_Pre	07:54	08:54	60	QT30-6	0.3268	19.6101
V02	2011006NY-13B/ s/n B26894	B13_BR_04_Post	11:29	12:29	60	QT30-6	0.3048	18.2907
V03	2011006NY-13C/ s/n B26451	B13_BR_04_HZA	10:54	11:24	30	5516	0.5953	17.8575
V01F	2011006NY-13D/ s/n B26903	B13_BR_04_ Field Blank						n/a

Released By: SAM.HORNER (Print/Sign)	Date/Time: 10Nov2020	Method of Shipment: UPS Ne
Received By:	Date/Time: 11/11/20 10:40 AM	Sample Condition: Acceptable

3456401

3456401

Description
2011006NY_B13

Customer: UL Verification Services, Inc.
Received Date: 2020-NOV-11 01:45:03 PM
Aurora Project No.: 1001079085
Order No.:
Oracle Project No.:

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Date Issued: November 23, 2020
Product #: 1001079085-3456401
Report #: 1001079085-3456401