October 18, 2017

Clemson University
310 Klugh Avenue
Clemson, South Carolina 29634

Attn: Mr. W. Robert Newberry, IV
E-mail: wnewber@clemson.edu

Re: Limited Indoor Air Quality Investigation
Clemson University
P&A Building
Clemson, South Carolina
Terracon Project No. 86127158 Task 98

Dear Mr. Newberry:

Terracon Consultants, Inc. (Terracon) conducted a Limited Indoor Air Quality Investigation in four areas inside the Poole Agricultural Center (also known as the P&A Building) located on Jersey Lane on the main campus of Clemson University in Clemson, South Carolina. This service was conducted in general accordance with our Master Service Agreement with Clemson University.

Project Information and Scope of Services

At the request of Clemson University, Terracon representative Mr. Benjamin Hestir conducted a limited indoor air investigation in areas with odor complaints on August 2, 2017. The scope was limited to collecting four samples for volatile organic compound (VOC) analysis to aide in evaluating whether odors reported during a roof replacement were indicative of hazardous levels of VOCs. The samples were collected on the ground floor and second floor of the building. At the time of the sampling events, roof replacement activities were taking place on the section of the roof immediately adjacent to the main fresh air intakes for the building HVAC systems. Although the roofing contractor was scoped to use methods that did not require a hot tar application, odor complaints persisted, especially early in the morning when the office occupants first arrived.

In addition to air samples, at the request of Clemson University, Terracon collected swab samples of dust accumulations adjacent to air supply registers that were causing concern amongst the staff working in the building.

Methods

Stainless steel 1-liter SUMMA canisters were placed in the four (4) locations for an approximate 8-hour period beginning in the morning of August 2nd and ending in the afternoon on August 2nd by Ben Hestir of Terracon.

The sample canisters, regulators and analysis were provided by Pace Analytical Laboratory (Pace) of Minneapolis, MN. The samples were analyzed for volatile organic compounds (VOCs) by EPA Method TO-15. At the end of the sampling period, the sample canisters and regulators were shipped to Pace via overnight courier under standard chain of custody.

Dust swabs were collected in ten (10) different locations within the P&A Building using Healthlink Transporter sterile swabs. The locations were selected in conjunction with the building maintenance manager, Mr. Allan Garrett.

After collection, the dust swabs were delivered by overnight courier under standard chain of custody to EMSL Analytical, Inc. (EMSL) in Cinnaminson, New Jersey. EMSL is accredited by the AIHA Environmental Microbiology Proficiency Analytical Testing (EMPAT) program for microbiological analysis, Accreditation 100194. The dust swabs were analyzed for biological and non-biological particles by optical microscopy with particle types reported as percent of the total sample.

General Site Observations

- The Poole Agricultural Building (also known as the P&A Building) contains a mixture of university offices, classrooms and laboratories. It is possible that some of the VOCs detected were present due to laboratory activities.
- Outside doors on the first floor adjacent to the 1st floor sample locations were propped open upon our arrival in an effort to reduce VOC odors reported by early arrivals that morning
- One of the two 1st floor rooms we sampled for VOCs (Room 106 – Sample P&A-2) appeared to have been recently vacated and painted
- Roofing contractors had attempted to limit odor complaints by covering fresh air intakes with a filter media that reportedly contained activated charcoal but technical details on the product were unavailable
- Dust accumulations in the offices were generally adjacent to HVAC supply registers

Sampling Results

Analytical results from the four indoor air samples collected were compared to OSHA permissible exposure limits. Of the fifty-eight (58) VOCs reported in the TO-15 analyte list, a total of twenty

(20) VOCs were identified in one or more of the four samples collected. The following VOCs were detected:

Table 1: Summary of Total VOC Analyses and
September 2, 2017

Sample #	P&A-1	P&A -2	P&A -3	P&A -4	
Location Description	**Room 111**	**Room 106**	**Room 206**	**Room A-203 Common Area**	**OSHA**
Compound Name	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**PEL**
Acetone	333	489	341	326	2,400,000^{TWA}
Benzene	1.6	3.3	2.5	2.1	3194.68^{TWA}
2-Butanone	ND	10.4	ND	6.6	590,000^{TWA}
Chloroform	ND	ND	1.7	1.8	240,000^{Ceiling}
Chloromethane	1.1	1.8	1.1	1.1	206,503^{TWA}
Cyclohexane	2.1	3.4	1.6	1.8	1,032,638 ^{TWA}
Dichlorodifluoromethane	2.6	4.4	2.9	2.7	4,950,000^{TWA}
Ethyl Acetate	4.1	3.3	2.9	3.4	1,441,472^{TWA}
Ethylbenzene	5.7	4.4	5.4	5.3	434,192^{TWA}
4-Ethyltoluene	20.8	16.3	18.3	17.7	NA
m&p-Xylene	25.2	21.3	22.8	22.2	434,323^{TWA}
Methylene Chloride	37.3	1120	31.1	29.2	86,850^{TWA}
Naphthalene	ND	ND	15.3	ND	52,417^{TWA}
n-Heptane	3.5	3.3	3.1	3.1	2,049,079^{TWA}
n-Hexane	9.0	94.0	11.8	12.5	1,762,167^{TWA}
o-Xylene	12.7	10.5	11.0	11.2	434,323^{TWA}
Toluene	353	179	574	422	753,619^{TWA}
trans-1,2-Dichloroethene	2.3	ND	2.0	ND	792,965^{TWA}
Trichlorofluoromethane	ND	3.0	ND	MD	5,600,000^{TWA}
1,2,4-Trimethylbenzene	64.3	45.9	56.1	61.1	122,894^{TWA}
1,3,5-Trimethylbenzene	19.6	14.5	17.2	18.4	122,904^{TWA}
TVOCs	897.90	2027.80	1106.50	948.20	

NA = not available, TWA = time weighted average, TVOCs = total volatile organic chemicals

None of the chemicals detected exceeded the OSHA PELs.

Attachment B contains the laboratory analytical report for the air samples from Pace Analytical.

Analytical results from the ten swab samples collected are summarized in Table 2. Particle types were identified by direct physical examination and separated into:

- Particles of Plant Origin
- Algae
- Diatoms
- Fungal Matter
- Non-Biological Particles
- Other Particles

Table 2: Summary of Swab Dust Samples
September 2, 2017

Sample #	P&A-5	P&A-6	P&A-7	P&A-8	P&A-9
Location Description	**Room 223 – S Filing cabinet**	**Room 225 – NE Cabinet**	**Room 224 – NW filing cabinet**	**Room 206 – E filing cabinet**	**Room A203 – W side common area bookshelf**
Compound Name	**% Composition**	**% Composition**	**% Composition**	**% Composition**	**% Composition**
Particles of Plant Origin					
Pollen	1	1	1	1	1
Fern/Moss Spores					
Cellulose Fibers	45	50	35	25	20
Starch Particles		1			
Trichomes	5	5	5		5
Other Plant Particles			1	2	
Algae					
Diatoms					
Fungal Matter	10	5	10	30	40
Particles of Animal Origin					
Skin Cells					
Animal Hair	1	1	5	5	
Mites					
Insect Fragments	2				
Non-Biological Particles					
Opaque/Dark Particles	3	1	5	5	5
Glass Fibers					
Synthetic Fibers	25	30	30	25	20
Translucent/Transparent Particles	3	5	3	2	5
Other particles	5	1	5	5	4
Percentage Total	100	100	100	100	100

Table 2: Summary of Swab Dust Samples (continued)
September 2, 2017

Sample #	P&A-10	P&A-11	P&A-12	P&A-13	P&A-14
Location Description	**Room 112A – NE Filing cabinet**	**Room 111 – W Credenza**	**Room 110 – Return air register S Side**	**Room 108 – Top of Refrigerator**	**Room 112A – HVAC Supply Register**
Compound Name	**% Composition**	**% Composition**	**% Composition**	**% Composition**	**% Composition**
Particles of Plant Origin					
Pollen		1	1	1	
Fern/Moss Spores					
Cellulose Fibers	30	35	25	35	1
Starch Particles					
Trichomes	5			10	
Other Plant Particles				1	
Algae					
Diatoms					
Fungal Matter	15	30	4	1	75
Particles of Animal Origin					
Skin Cells					
Animal Hair	10				
Mites					
Insect Fragments	1	1	5	2	
Non-Biological Particles					
Opaque/Dark Particles	5	5	25	5	15
Glass Fibers					
Synthetic Fibers	25	20		35	
Translucent/Transparent Particles	5	5	30	5	7
Other particles	4	3	10	5	2
Percentage Total	100	100	100	100	100

Conclusions

The following conclusions are made based on the sampling:

- None of the VOCs detected the OSHA PELs.
- Total VOC levels in each of the four (4) samples exceed the recommended indoor air standard established by LEED.
- The areas chosen are expected to provide “worst-case” based on reports of VOC odor just prior to our sampling event.
- Since other chemicals are used within the building, some of the detected VOCs may have not originated from the roofing replacement.
- No glass fibers were observed in the dust samples suggesting that fiberglass insulation is not breaking down within the ducts supplying the offices sampled.
- Dust accumulations is likely a function of the age of the building, housekeeping, and the duct systems.

Recommendations

Based on this evaluation, multiple VOCs were detected in the samples collected at levels well below OSHA PELs. This task (the roof replacement) was performed as a maintenance activity and is not routine to the building. To help minimize future complaints from similar projects at the university, it is recommended to have a pre-project discussion with the contractor to minimize the impact of indoor air quality. This items considered may include; using activated carbon filtration in the HVAC system during roofing work, minimizing outdoor air intake into the HVAC system during re-roofing; keeping roof access hatched/doors closed during re-roofing, and effective communication with building occupants. Additionally, it should be noted that some of the VOCs detected may originate from inside the building, not from roof replacement.

Dust observed around HVAC diffusers or on surfaces below may be a combination items such as; housekeeping, poorly seated HVAC filters, or age of the ducts. Increased housekeeping and general HVAC maintenance measures should be reviewed and modified as necessary.

Closing

Terracon appreciates the opportunity to provide this service to Clemson University. If you have any questions regarding this report, please contact the undersigned at 864-292-2901.

Sincerely,
Terracon Consultants, Inc.

Benjamin Hestir, P.E.
Project Industrial Hygienist

Jeffrey A. Gurrie
Senior Industrial Hygienist

Attachment A: Pace Analytical Lab Report for August 2, 2017 VOC samples
Attachment B EMSL Analytical Lab Report for August 2, 2017 Swab samples

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

August 07, 2017

Ben Hestir
Terracon
3534 Rutherford Rd
Taylors, SC 29687

RE: Project: P&A Roof
Pace Project No.: 92350149

Dear Ben Hestir:
Enclosed are the analytical results for sample(s) received by the laboratory on August 03, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Taylor Ezell
taylor.ezell@pacelabs.com
(704)875-9092
Project Manager

Enclosures

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Pace Analytical Services, LLC
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CERTIFICATIONS

Project: P&A Roof
Pace Project No.: 92350149

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: UST-078
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: MN00064
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming via EPA Region 8 Certification #: 8TMS-L

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SAMPLE ANALYTE COUNT

Project: P&A Roof
Pace Project No.: 92350149

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92350149001	**P&A - 1**	TO-15	MJL	58	PASI-M
92350149002	**P&A - 2**	TO-15	MJL	58	PASI-M
92350149003	**P&A - 3**	TO-15	MJL	58	PASI-M
92350149004	**P&A - 4**	TO-15	MJL	58	PASI-M

REPORT OF LABORATORY ANALYSIS

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: P&A Roof
Pace Project No.: 92350149

Sample: P&A - 1 **Lab ID: 92350149001** Collected: 08/02/17 15:58 Received: 08/03/17 09:50 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	**333**	ug/m3	5.1	2.1		08/04/17 16:14	67-64-1	
Benzene	**1.6**	ug/m3	0.68	2.1		08/04/17 16:14	71-43-2	
Bromodichloromethane	ND	ug/m3	2.9	2.1		08/04/17 16:14	75-27-4	
Bromoform	ND	ug/m3	4.4	2.1		08/04/17 16:14	75-25-2	
Bromomethane	ND	ug/m3	1.7	2.1		08/04/17 16:14	74-83-9	
1,3-Butadiene	ND	ug/m3	0.94	2.1		08/04/17 16:14	106-99-0	
2-Butanone (MEK)	ND	ug/m3	6.3	2.1		08/04/17 16:14	78-93-3	
Carbon disulfide	ND	ug/m3	1.3	2.1		08/04/17 16:14	75-15-0	
Carbon tetrachloride	ND	ug/m3	1.3	2.1		08/04/17 16:14	56-23-5	
Chlorobenzene	ND	ug/m3	2.0	2.1		08/04/17 16:14	108-90-7	
Chloroethane	ND	ug/m3	1.1	2.1		08/04/17 16:14	75-00-3	
Chloroform	ND	ug/m3	1.0	2.1		08/04/17 16:14	67-66-3	
Chloromethane	**1.1**	ug/m3	0.88	2.1		08/04/17 16:14	74-87-3	
Cyclohexane	**2.1**	ug/m3	1.5	2.1		08/04/17 16:14	110-82-7	
Dibromochloromethane	ND	ug/m3	3.6	2.1		08/04/17 16:14	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	3.3	2.1		08/04/17 16:14	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	2.6	2.1		08/04/17 16:14	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	2.6	2.1		08/04/17 16:14	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	2.6	2.1		08/04/17 16:14	106-46-7	
Dichlorodifluoromethane	**2.6**	ug/m3	2.1	2.1		08/04/17 16:14	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.7	2.1		08/04/17 16:14	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.86	2.1		08/04/17 16:14	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.7	2.1		08/04/17 16:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.7	2.1		08/04/17 16:14	156-59-2	
trans-1,2-Dichloroethene	**2.3**	ug/m3	1.7	2.1		08/04/17 16:14	156-60-5	
1,2-Dichloropropane	ND	ug/m3	2.0	2.1		08/04/17 16:14	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	1.9	2.1		08/04/17 16:14	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.9	2.1		08/04/17 16:14	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	3.0	2.1		08/04/17 16:14	76-14-2	
Ethyl acetate	**4.1**	ug/m3	1.5	2.1		08/04/17 16:14	141-78-6	
Ethylbenzene	**5.7**	ug/m3	1.8	2.1		08/04/17 16:14	100-41-4	
4-Ethyltoluene	**20.8**	ug/m3	2.1	2.1		08/04/17 16:14	622-96-8	
n-Heptane	**3.5**	ug/m3	1.7	2.1		08/04/17 16:14	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	4.6	2.1		08/04/17 16:14	87-68-3	
n-Hexane	**9.0**	ug/m3	1.5	2.1		08/04/17 16:14	110-54-3	
2-Hexanone	ND	ug/m3	21.9	2.1		08/04/17 16:14	591-78-6	
Methylene Chloride	**37.3**	ug/m3	7.4	2.1		08/04/17 16:14	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	8.7	2.1		08/04/17 16:14	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	7.7	2.1		08/04/17 16:14	1634-04-4	
Naphthalene	ND	ug/m3	5.6	2.1		08/04/17 16:14	91-20-3	
Propylene	ND	ug/m3	0.74	2.1		08/04/17 16:14	115-07-1	
Styrene	ND	ug/m3	1.8	2.1		08/04/17 16:14	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	1.5	2.1		08/04/17 16:14	79-34-5	
Tetrachloroethene	ND	ug/m3	1.4	2.1		08/04/17 16:14	127-18-4	
Tetrahydrofuran	ND	ug/m3	1.3	2.1		08/04/17 16:14	109-99-9	
Toluene	**353**	ug/m3	12.0	15.54		08/06/17 15:14	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.9	2.1		08/04/17 16:14	120-82-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: P&A Roof
Pace Project No.: 92350149

Sample: P&A - 1 **Lab ID: 92350149001** Collected: 08/02/17 15:58 Received: 08/03/17 09:50 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1,1-Trichloroethane	ND	ug/m3	2.3	2.1		08/04/17 16:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.2	2.1		08/04/17 16:14	79-00-5	
Trichloroethene	ND	ug/m3	1.2	2.1		08/04/17 16:14	79-01-6	
Trichlorofluoromethane	ND	ug/m3	2.4	2.1		08/04/17 16:14	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	3.4	2.1		08/04/17 16:14	76-13-1	
1,2,4-Trimethylbenzene	**64.3**	ug/m3	2.1	2.1		08/04/17 16:14	95-63-6	
1,3,5-Trimethylbenzene	**19.6**	ug/m3	2.1	2.1		08/04/17 16:14	108-67-8	
Vinyl acetate	ND	ug/m3	1.5	2.1		08/04/17 16:14	108-05-4	
Vinyl chloride	ND	ug/m3	0.55	2.1		08/04/17 16:14	75-01-4	
m&p-Xylene	**25.2**	ug/m3	3.7	2.1		08/04/17 16:14	179601-23-1	
o-Xylene	**12.7**	ug/m3	1.8	2.1		08/04/17 16:14	95-47-6	

Sample: P&A - 2 **Lab ID: 92350149002** Collected: 08/02/17 16:03 Received: 08/03/17 09:50 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	**489**	ug/m3	5.1	2.1		08/04/17 16:53	67-64-1	
Benzene	**3.3**	ug/m3	0.68	2.1		08/04/17 16:53	71-43-2	
Bromodichloromethane	ND	ug/m3	2.9	2.1		08/04/17 16:53	75-27-4	
Bromoform	ND	ug/m3	4.4	2.1		08/04/17 16:53	75-25-2	
Bromomethane	ND	ug/m3	1.7	2.1		08/04/17 16:53	74-83-9	
1,3-Butadiene	ND	ug/m3	0.94	2.1		08/04/17 16:53	106-99-0	
2-Butanone (MEK)	**10.4**	ug/m3	6.3	2.1		08/04/17 16:53	78-93-3	
Carbon disulfide	ND	ug/m3	1.3	2.1		08/04/17 16:53	75-15-0	
Carbon tetrachloride	ND	ug/m3	1.3	2.1		08/04/17 16:53	56-23-5	
Chlorobenzene	ND	ug/m3	2.0	2.1		08/04/17 16:53	108-90-7	
Chloroethane	ND	ug/m3	1.1	2.1		08/04/17 16:53	75-00-3	
Chloroform	ND	ug/m3	1.0	2.1		08/04/17 16:53	67-66-3	
Chloromethane	**1.8**	ug/m3	0.88	2.1		08/04/17 16:53	74-87-3	
Cyclohexane	**3.4**	ug/m3	1.5	2.1		08/04/17 16:53	110-82-7	
Dibromochloromethane	ND	ug/m3	3.6	2.1		08/04/17 16:53	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	3.3	2.1		08/04/17 16:53	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	2.6	2.1		08/04/17 16:53	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	2.6	2.1		08/04/17 16:53	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	2.6	2.1		08/04/17 16:53	106-46-7	
Dichlorodifluoromethane	**4.4**	ug/m3	2.1	2.1		08/04/17 16:53	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.7	2.1		08/04/17 16:53	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.86	2.1		08/04/17 16:53	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.7	2.1		08/04/17 16:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.7	2.1		08/04/17 16:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.7	2.1		08/04/17 16:53	156-60-5	
1,2-Dichloropropane	ND	ug/m3	2.0	2.1		08/04/17 16:53	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	1.9	2.1		08/04/17 16:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.9	2.1		08/04/17 16:53	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	3.0	2.1		08/04/17 16:53	76-14-2	

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(704)875-9092

ANALYTICAL RESULTS

Project: P&A Roof
Pace Project No.: 92350149

Sample: P&A - 2 **Lab ID: 92350149002** Collected: 08/02/17 16:03 Received: 08/03/17 09:50 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Ethyl acetate	**3.3**	ug/m3	1.5	2.1		08/04/17 16:53	141-78-6	
Ethylbenzene	**4.4**	ug/m3	1.8	2.1		08/04/17 16:53	100-41-4	
4-Ethyltoluene	**16.3**	ug/m3	2.1	2.1		08/04/17 16:53	622-96-8	
n-Heptane	**3.3**	ug/m3	1.7	2.1		08/04/17 16:53	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	4.6	2.1		08/04/17 16:53	87-68-3	
n-Hexane	**94.0**	ug/m3	5.1	7.06		08/06/17 14:42	110-54-3	
2-Hexanone	ND	ug/m3	21.9	2.1		08/04/17 16:53	591-78-6	
Methylene Chloride	**1120**	ug/m3	24.9	7.06		08/06/17 14:42	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	8.7	2.1		08/04/17 16:53	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	7.7	2.1		08/04/17 16:53	1634-04-4	
Naphthalene	ND	ug/m3	5.6	2.1		08/04/17 16:53	91-20-3	
Propylene	ND	ug/m3	0.74	2.1		08/04/17 16:53	115-07-1	
Styrene	ND	ug/m3	1.8	2.1		08/04/17 16:53	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	1.5	2.1		08/04/17 16:53	79-34-5	
Tetrachloroethene	ND	ug/m3	1.4	2.1		08/04/17 16:53	127-18-4	
Tetrahydrofuran	ND	ug/m3	1.3	2.1		08/04/17 16:53	109-99-9	
Toluene	**179**	ug/m3	1.6	2.1		08/04/17 16:53	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.9	2.1		08/04/17 16:53	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.3	2.1		08/04/17 16:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.2	2.1		08/04/17 16:53	79-00-5	
Trichloroethene	ND	ug/m3	1.2	2.1		08/04/17 16:53	79-01-6	
Trichlorofluoromethane	**3.0**	ug/m3	2.4	2.1		08/04/17 16:53	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	3.4	2.1		08/04/17 16:53	76-13-1	
1,2,4-Trimethylbenzene	**45.9**	ug/m3	2.1	2.1		08/04/17 16:53	95-63-6	
1,3,5-Trimethylbenzene	**14.5**	ug/m3	2.1	2.1		08/04/17 16:53	108-67-8	
Vinyl acetate	ND	ug/m3	1.5	2.1		08/04/17 16:53	108-05-4	
Vinyl chloride	ND	ug/m3	0.55	2.1		08/04/17 16:53	75-01-4	
m&p-Xylene	**21.3**	ug/m3	3.7	2.1		08/04/17 16:53	179601-23-1	
o-Xylene	**10.5**	ug/m3	1.8	2.1		08/04/17 16:53	95-47-6	

Sample: P&A - 3 **Lab ID: 92350149003** Collected: 08/02/17 16:08 Received: 08/03/17 09:50 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	**341**	ug/m3	5.1	2.1		08/04/17 17:29	67-64-1	
Benzene	**2.5**	ug/m3	0.68	2.1		08/04/17 17:29	71-43-2	
Bromodichloromethane	ND	ug/m3	2.9	2.1		08/04/17 17:29	75-27-4	
Bromoform	ND	ug/m3	4.4	2.1		08/04/17 17:29	75-25-2	
Bromomethane	ND	ug/m3	1.7	2.1		08/04/17 17:29	74-83-9	
1,3-Butadiene	ND	ug/m3	0.94	2.1		08/04/17 17:29	106-99-0	
2-Butanone (MEK)	ND	ug/m3	6.3	2.1		08/04/17 17:29	78-93-3	
Carbon disulfide	ND	ug/m3	1.3	2.1		08/04/17 17:29	75-15-0	
Carbon tetrachloride	ND	ug/m3	1.3	2.1		08/04/17 17:29	56-23-5	
Chlorobenzene	ND	ug/m3	2.0	2.1		08/04/17 17:29	108-90-7	
Chloroethane	ND	ug/m3	1.1	2.1		08/04/17 17:29	75-00-3	

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ANALYTICAL RESULTS

Project: P&A Roof
Pace Project No.: 92350149

Sample: P&A - 3 **Lab ID: 92350149003** Collected: 08/02/17 16:08 Received: 08/03/17 09:50 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Chloroform	**1.7**	ug/m3	1.0	2.1		08/04/17 17:29	67-66-3	
Chloromethane	**1.1**	ug/m3	0.88	2.1		08/04/17 17:29	74-87-3	
Cyclohexane	**1.6**	ug/m3	1.5	2.1		08/04/17 17:29	110-82-7	
Dibromochloromethane	ND	ug/m3	3.6	2.1		08/04/17 17:29	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	3.3	2.1		08/04/17 17:29	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	2.6	2.1		08/04/17 17:29	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	2.6	2.1		08/04/17 17:29	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	2.6	2.1		08/04/17 17:29	106-46-7	
Dichlorodifluoromethane	**2.9**	ug/m3	2.1	2.1		08/04/17 17:29	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.7	2.1		08/04/17 17:29	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.86	2.1		08/04/17 17:29	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.7	2.1		08/04/17 17:29	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.7	2.1		08/04/17 17:29	156-59-2	
trans-1,2-Dichloroethene	**2.0**	ug/m3	1.7	2.1		08/04/17 17:29	156-60-5	
1,2-Dichloropropane	ND	ug/m3	2.0	2.1		08/04/17 17:29	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	1.9	2.1		08/04/17 17:29	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.9	2.1		08/04/17 17:29	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	3.0	2.1		08/04/17 17:29	76-14-2	
Ethyl acetate	**2.9**	ug/m3	1.5	2.1		08/04/17 17:29	141-78-6	
Ethylbenzene	**5.4**	ug/m3	1.8	2.1		08/04/17 17:29	100-41-4	
4-Ethyltoluene	**18.3**	ug/m3	2.1	2.1		08/04/17 17:29	622-96-8	
n-Heptane	**3.1**	ug/m3	1.7	2.1		08/04/17 17:29	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	4.6	2.1		08/04/17 17:29	87-68-3	
n-Hexane	**11.8**	ug/m3	1.5	2.1		08/04/17 17:29	110-54-3	
2-Hexanone	ND	ug/m3	21.9	2.1		08/04/17 17:29	591-78-6	
Methylene Chloride	**31.1**	ug/m3	7.4	2.1		08/04/17 17:29	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	8.7	2.1		08/04/17 17:29	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	7.7	2.1		08/04/17 17:29	1634-04-4	
Naphthalene	**15.3**	ug/m3	5.6	2.1		08/04/17 17:29	91-20-3	
Propylene	ND	ug/m3	0.74	2.1		08/04/17 17:29	115-07-1	
Styrene	ND	ug/m3	1.8	2.1		08/04/17 17:29	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	1.5	2.1		08/04/17 17:29	79-34-5	
Tetrachloroethene	ND	ug/m3	1.4	2.1		08/04/17 17:29	127-18-4	
Tetrahydrofuran	ND	ug/m3	1.3	2.1		08/04/17 17:29	109-99-9	
Toluene	**574**	ug/m3	25.4	32.97		08/06/17 16:17	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.9	2.1		08/04/17 17:29	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.3	2.1		08/04/17 17:29	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.2	2.1		08/04/17 17:29	79-00-5	
Trichloroethene	ND	ug/m3	1.2	2.1		08/04/17 17:29	79-01-6	
Trichlorofluoromethane	ND	ug/m3	2.4	2.1		08/04/17 17:29	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	3.4	2.1		08/04/17 17:29	76-13-1	
1,2,4-Trimethylbenzene	**56.1**	ug/m3	2.1	2.1		08/04/17 17:29	95-63-6	
1,3,5-Trimethylbenzene	**17.2**	ug/m3	2.1	2.1		08/04/17 17:29	108-67-8	
Vinyl acetate	ND	ug/m3	1.5	2.1		08/04/17 17:29	108-05-4	
Vinyl chloride	ND	ug/m3	0.55	2.1		08/04/17 17:29	75-01-4	
m&p-Xylene	**22.8**	ug/m3	3.7	2.1		08/04/17 17:29	179601-23-1	
o-Xylene	**11.0**	ug/m3	1.8	2.1		08/04/17 17:29	95-47-6	

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ANALYTICAL RESULTS

Project: P&A Roof
Pace Project No.: 92350149

Sample: P&A - 4 **Lab ID: 92350149004** Collected: 08/02/17 16:11 Received: 08/03/17 09:50 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	**326**	ug/m3	4.9	2.02		08/04/17 18:06	67-64-1	
Benzene	**2.1**	ug/m3	0.66	2.02		08/04/17 18:06	71-43-2	
Bromodichloromethane	ND	ug/m3	2.7	2.02		08/04/17 18:06	75-27-4	
Bromoform	ND	ug/m3	4.2	2.02		08/04/17 18:06	75-25-2	
Bromomethane	ND	ug/m3	1.6	2.02		08/04/17 18:06	74-83-9	
1,3-Butadiene	ND	ug/m3	0.91	2.02		08/04/17 18:06	106-99-0	
2-Butanone (MEK)	**6.6**	ug/m3	6.1	2.02		08/04/17 18:06	78-93-3	
Carbon disulfide	ND	ug/m3	1.3	2.02		08/04/17 18:06	75-15-0	
Carbon tetrachloride	ND	ug/m3	1.3	2.02		08/04/17 18:06	56-23-5	
Chlorobenzene	ND	ug/m3	1.9	2.02		08/04/17 18:06	108-90-7	
Chloroethane	ND	ug/m3	1.1	2.02		08/04/17 18:06	75-00-3	
Chloroform	**1.8**	ug/m3	1.0	2.02		08/04/17 18:06	67-66-3	
Chloromethane	**1.1**	ug/m3	0.85	2.02		08/04/17 18:06	74-87-3	
Cyclohexane	**1.8**	ug/m3	1.4	2.02		08/04/17 18:06	110-82-7	
Dibromochloromethane	ND	ug/m3	3.5	2.02		08/04/17 18:06	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	3.2	2.02		08/04/17 18:06	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	2.5	2.02		08/04/17 18:06	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	2.5	2.02		08/04/17 18:06	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	2.5	2.02		08/04/17 18:06	106-46-7	
Dichlorodifluoromethane	**2.7**	ug/m3	2.0	2.02		08/04/17 18:06	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.7	2.02		08/04/17 18:06	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.83	2.02		08/04/17 18:06	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.6	2.02		08/04/17 18:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.6	2.02		08/04/17 18:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.6	2.02		08/04/17 18:06	156-60-5	
1,2-Dichloropropane	ND	ug/m3	1.9	2.02		08/04/17 18:06	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	1.9	2.02		08/04/17 18:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.9	2.02		08/04/17 18:06	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	2.9	2.02		08/04/17 18:06	76-14-2	
Ethyl acetate	**3.4**	ug/m3	1.5	2.02		08/04/17 18:06	141-78-6	
Ethylbenzene	**5.3**	ug/m3	1.8	2.02		08/04/17 18:06	100-41-4	
4-Ethyltoluene	**17.7**	ug/m3	2.0	2.02		08/04/17 18:06	622-96-8	
n-Heptane	**3.1**	ug/m3	1.7	2.02		08/04/17 18:06	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	4.4	2.02		08/04/17 18:06	87-68-3	
n-Hexane	**12.5**	ug/m3	1.5	2.02		08/04/17 18:06	110-54-3	
2-Hexanone	ND	ug/m3	21.0	2.02		08/04/17 18:06	591-78-6	
Methylene Chloride	**29.2**	ug/m3	7.1	2.02		08/04/17 18:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	8.4	2.02		08/04/17 18:06	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	7.4	2.02		08/04/17 18:06	1634-04-4	
Naphthalene	ND	ug/m3	5.4	2.02		08/04/17 18:06	91-20-3	
Propylene	ND	ug/m3	0.71	2.02		08/04/17 18:06	115-07-1	
Styrene	ND	ug/m3	1.8	2.02		08/04/17 18:06	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	1.4	2.02		08/04/17 18:06	79-34-5	
Tetrachloroethene	ND	ug/m3	1.4	2.02		08/04/17 18:06	127-18-4	
Tetrahydrofuran	ND	ug/m3	1.2	2.02		08/04/17 18:06	109-99-9	
Toluene	**422**	ug/m3	26.1	33.94		08/06/17 15:46	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.6	2.02		08/04/17 18:06	120-82-1	

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ANALYTICAL RESULTS

Project: P&A Roof
Pace Project No.: 92350149

Sample: P&A - 4 **Lab ID: 92350149004** Collected: 08/02/17 16:11 Received: 08/03/17 09:50 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1,1-Trichloroethane	ND	ug/m3	2.2	2.02		08/04/17 18:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.1	2.02		08/04/17 18:06	79-00-5	
Trichloroethene	ND	ug/m3	1.1	2.02		08/04/17 18:06	79-01-6	
Trichlorofluoromethane	ND	ug/m3	2.3	2.02		08/04/17 18:06	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	3.2	2.02		08/04/17 18:06	76-13-1	
1,2,4-Trimethylbenzene	**61.1**	ug/m3	2.0	2.02		08/04/17 18:06	95-63-6	
1,3,5-Trimethylbenzene	**18.4**	ug/m3	2.0	2.02		08/04/17 18:06	108-67-8	
Vinyl acetate	ND	ug/m3	1.4	2.02		08/04/17 18:06	108-05-4	
Vinyl chloride	ND	ug/m3	0.53	2.02		08/04/17 18:06	75-01-4	
m&p-Xylene	**22.2**	ug/m3	3.6	2.02		08/04/17 18:06	179601-23-1	
o-Xylene	**11.2**	ug/m3	1.8	2.02		08/04/17 18:06	95-47-6	

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QUALITY CONTROL DATA

Project: P&A Roof
Pace Project No.: 92350149

QC Batch: 489318 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 92350149001, 92350149002, 92350149003, 92350149004

METHOD BLANK: 2662688 Matrix: Air
Associated Lab Samples: 92350149001, 92350149002, 92350149003, 92350149004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	08/04/17 10:15	
1,1,2,2-Tetrachloroethane	ug/m3	ND	0.70	08/04/17 10:15	
1,1,2-Trichloroethane	ug/m3	ND	0.55	08/04/17 10:15	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	1.6	08/04/17 10:15	
1,1-Dichloroethane	ug/m3	ND	0.82	08/04/17 10:15	
1,1-Dichloroethene	ug/m3	ND	0.81	08/04/17 10:15	
1,2,4-Trichlorobenzene	ug/m3	ND	3.8	08/04/17 10:15	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	08/04/17 10:15	
1,2-Dibromoethane (EDB)	ug/m3	ND	1.6	08/04/17 10:15	
1,2-Dichlorobenzene	ug/m3	ND	1.2	08/04/17 10:15	
1,2-Dichloroethane	ug/m3	ND	0.41	08/04/17 10:15	
1,2-Dichloropropane	ug/m3	ND	0.94	08/04/17 10:15	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	08/04/17 10:15	
1,3-Butadiene	ug/m3	ND	0.45	08/04/17 10:15	
1,3-Dichlorobenzene	ug/m3	ND	1.2	08/04/17 10:15	
1,4-Dichlorobenzene	ug/m3	ND	1.2	08/04/17 10:15	
2-Butanone (MEK)	ug/m3	ND	3.0	08/04/17 10:15	
2-Hexanone	ug/m3	ND	10.4	08/04/17 10:15	MN
4-Ethyltoluene	ug/m3	ND	1.0	08/04/17 10:15	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	4.2	08/04/17 10:15	
Acetone	ug/m3	ND	2.4	08/04/17 10:15	
Benzene	ug/m3	ND	0.32	08/04/17 10:15	
Bromodichloromethane	ug/m3	ND	1.4	08/04/17 10:15	
Bromoform	ug/m3	ND	2.1	08/04/17 10:15	
Bromomethane	ug/m3	ND	0.79	08/04/17 10:15	
Carbon disulfide	ug/m3	ND	0.63	08/04/17 10:15	
Carbon tetrachloride	ug/m3	ND	0.64	08/04/17 10:15	
Chlorobenzene	ug/m3	ND	0.94	08/04/17 10:15	
Chloroethane	ug/m3	ND	0.54	08/04/17 10:15	
Chloroform	ug/m3	ND	0.50	08/04/17 10:15	
Chloromethane	ug/m3	ND	0.42	08/04/17 10:15	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	08/04/17 10:15	
cis-1,3-Dichloropropene	ug/m3	ND	0.92	08/04/17 10:15	
Cyclohexane	ug/m3	ND	0.70	08/04/17 10:15	
Dibromochloromethane	ug/m3	ND	1.7	08/04/17 10:15	
Dichlorodifluoromethane	ug/m3	ND	1.0	08/04/17 10:15	
Dichlorotetrafluoroethane	ug/m3	ND	1.4	08/04/17 10:15	
Ethyl acetate	ug/m3	ND	0.73	08/04/17 10:15	
Ethylbenzene	ug/m3	ND	0.88	08/04/17 10:15	
Hexachloro-1,3-butadiene	ug/m3	ND	2.2	08/04/17 10:15	
m&p-Xylene	ug/m3	ND	1.8	08/04/17 10:15	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: P&A Roof
Pace Project No.: 92350149

METHOD BLANK: 2662688 Matrix: Air
Associated Lab Samples: 92350149001, 92350149002, 92350149003, 92350149004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methyl-tert-butyl ether	ug/m3	ND	3.7	08/04/17 10:15	
Methylene Chloride	ug/m3	ND	3.5	08/04/17 10:15	
n-Heptane	ug/m3	ND	0.83	08/04/17 10:15	
n-Hexane	ug/m3	ND	0.72	08/04/17 10:15	
Naphthalene	ug/m3	ND	2.7	08/04/17 10:15	
o-Xylene	ug/m3	ND	0.88	08/04/17 10:15	
Propylene	ug/m3	ND	0.35	08/04/17 10:15	
Styrene	ug/m3	ND	0.87	08/04/17 10:15	
Tetrachloroethene	ug/m3	ND	0.69	08/04/17 10:15	
Tetrahydrofuran	ug/m3	ND	0.60	08/04/17 10:15	
Toluene	ug/m3	ND	0.77	08/04/17 10:15	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	08/04/17 10:15	
trans-1,3-Dichloropropene	ug/m3	ND	0.92	08/04/17 10:15	
Trichloroethene	ug/m3	ND	0.55	08/04/17 10:15	
Trichlorofluoromethane	ug/m3	ND	1.1	08/04/17 10:15	
Vinyl acetate	ug/m3	ND	0.72	08/04/17 10:15	
Vinyl chloride	ug/m3	ND	0.26	08/04/17 10:15	

LABORATORY CONTROL SAMPLE: 2662689

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	62.8	113	70-134	
1,1,2,2-Tetrachloroethane	ug/m3	69.8	78.2	112	70-130	
1,1,2-Trichloroethane	ug/m3	55.5	57.6	104	70-130	
1,1,2-Trichlorotrifluoroethane	ug/m3	77.9	97.3	125	70-130	
1,1-Dichloroethane	ug/m3	41.1	46.0	112	70-130	
1,1-Dichloroethene	ug/m3	40.3	50.4	125	70-130	
1,2,4-Trichlorobenzene	ug/m3	75.4	80.8	107	60-150	
1,2,4-Trimethylbenzene	ug/m3	50	59.6	119	70-136	
1,2-Dibromoethane (EDB)	ug/m3	78.1	86.0	110	70-130	
1,2-Dichlorobenzene	ug/m3	61.1	71.6	117	70-139	
1,2-Dichloroethane	ug/m3	41.1	46.8	114	70-130	
1,2-Dichloropropane	ug/m3	47	52.6	112	70-131	
1,3,5-Trimethylbenzene	ug/m3	50	57.1	114	70-133	
1,3-Butadiene	ug/m3	22.5	25.4	113	70-130	
1,3-Dichlorobenzene	ug/m3	61.1	75.2	123	70-144	
1,4-Dichlorobenzene	ug/m3	61.1	73.7	121	70-139	
2-Butanone (MEK)	ug/m3	30	34.5	115	70-130	
2-Hexanone	ug/m3	104	149	144	70-138	CH,L3
4-Ethyltoluene	ug/m3	50	60.1	120	70-135	
4-Methyl-2-pentanone (MIBK)	ug/m3	104	107	103	70-130	
Acetone	ug/m3	121	135	112	64-130	
Benzene	ug/m3	32.5	34.5	106	70-130	
Bromodichloromethane	ug/m3	68.1	75.1	110	70-134	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: P&A Roof
Pace Project No.: 92350149

LABORATORY CONTROL SAMPLE: 2662689

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromoform	ug/m3	105	119	113	70-150	
Bromomethane	ug/m3	39.5	48.3	122	70-130	
Carbon disulfide	ug/m3	31.6	33.9	107	70-134	
Carbon tetrachloride	ug/m3	64	74.8	117	68-150	
Chlorobenzene	ug/m3	46.8	47.7	102	70-132	
Chloroethane	ug/m3	26.8	32.9	123	70-132	
Chloroform	ug/m3	49.6	57.4	116	70-130	
Chloromethane	ug/m3	21	23.0	109	70-130	
cis-1,2-Dichloroethene	ug/m3	40.3	43.1	107	70-133	
cis-1,3-Dichloropropene	ug/m3	46.1	47.3	103	70-137	
Cyclohexane	ug/m3	35	38.7	111	70-130	
Dibromochloromethane	ug/m3	86.6	97.5	113	70-144	
Dichlorodifluoromethane	ug/m3	50.3	53.3	106	70-130	
Dichlorotetrafluoroethane	ug/m3	71	76.7	108	70-130	
Ethyl acetate	ug/m3	36.6	39.9	109	70-130	
Ethylbenzene	ug/m3	44.1	46.2	105	70-134	
Hexachloro-1,3-butadiene	ug/m3	108	110	101	45-150	
m&p-Xylene	ug/m3	88.3	94.1	107	70-130	
Methyl-tert-butyl ether	ug/m3	91.6	98.1	107	66-148	
Methylene Chloride	ug/m3	177	199	113	67-133	
n-Heptane	ug/m3	41.6	46.3	111	70-130	
n-Hexane	ug/m3	35.8	40.4	113	67-132	
Naphthalene	ug/m3	53.3	62.8	118	53-150	
o-Xylene	ug/m3	44.1	47.0	106	70-130	
Propylene	ug/m3	17.5	20.6	118	70-135	
Styrene	ug/m3	43.3	49.1	113	70-139	
Tetrachloroethene	ug/m3	68.9	71.5	104	70-130	
Tetrahydrofuran	ug/m3	30	34.3	114	70-130	
Toluene	ug/m3	38.3	38.1	99	70-130	
trans-1,2-Dichloroethene	ug/m3	40.3	43.7	108	70-131	
trans-1,3-Dichloropropene	ug/m3	46.1	47.9	104	70-142	
Trichloroethene	ug/m3	54.6	57.3	105	70-130	
Trichlorofluoromethane	ug/m3	57.1	70.9	124	70-130	
Vinyl acetate	ug/m3	35.8	39.9	111	70-137	
Vinyl chloride	ug/m3	26	28.2	109	70-130	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: P&A Roof
Pace Project No.: 92350149

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: P&A Roof
Pace Project No.: 92350149

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92350149001	**P&A - 1**	TO-15	489318		
92350149002	**P&A - 2**	TO-15	489318		
92350149003	**P&A - 3**	TO-15	489318		
92350149004	**P&A - 4**	TO-15	489318		

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Pace Analytical®
www.pacelabs.com

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

27698

Page: 1 of 1

Section A Required Client Information:

Company: Terracon
Address: 72 Pointe Circle
Greenville, SC 29615
Email To: ben.hestir@terracon.com
Phone: 864-293-7348 Fax:
Requested Due Date/TAT: Rush

Section B Required Project Information:

Report To: Ben Hestir
Copy To:
Purchase Order No.:
Project Name: P+A Roof
Project Number: 61271158 Task 99

Section C Invoice Information:

Attention: Terracon Corporate
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager/Sales Rep.
Pace Profile #:

Program
☐ UST ☐ Superfund ☐ Emissions ☐ Clean Air Act
☐ Voluntary Clean Up ☐ Dry Clean ☐ RCRA ☑ Other SC Brown fields

Location of Sampling by State: SC

Reporting Units: ☑ ug/m³ ☐ mg/m³ ☐ PPBV ☐ PPMV ☐ Other

Report Level II. ___ III. ___ IV. ___ Other ___

Section D Required Client Information

AIR SAMPLE ID
Sample IDs MUST BE UNIQUE

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

ITEM #	AIR SAMPLE ID	MEDIA CODE	PID Reading (Client only)	COLLECTED COMPOSITE START END/GRAB DATE	COLLECTED COMPOSITE START END/GRAB TIME	COLLECTED COMPOSITE - DATE	COLLECTED COMPOSITE - TIME	Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	Method: PM10	3C- Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-13 (PAH)	TO-14	TO-15	TO15 Short List*	Pace Lab ID
1	P+A-1	1LC		8/2/17	0923	8/2/17	1558	-30"	-9	25156	C0141							✓			
2	P+A-2	1LC		8/2/17	0932	8/2/17	1603	-30	-9	22156	C0106							✓			
3	P+A-3	1LC		8/2/17	0943	8/2/17	1608	-26	-6	11566	C0285							✓			
4	P+A-4	1LC		8/2/17	0948	8/2/17	1611	-30	-8	29356	C6279							✓			
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Comments: Report Full TO-15 List.

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Ben Hestir/Terracon	8/2/17	1700	[illegible]	8-3-17	950

SAMPLE CONDITIONS

—	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ben Hestir

SIGNATURE of SAMPLER: Ben Hestir

DATE Signed (MM / DD / YY): 08/02/17

ORIGINAL

Pace Analytical	Document Name: **Air Sample Condition Upon Receipt**	Document Revised: 26APR2016 Page 1 of 1
	Document No.: **F-MN-A-106-rev.11**	Issuing Authority: Pace Minnesota Quality Office

Air Sample Condition Upon Receipt

Client Name: Terracon

Project #:

Courier: ☑ Fed Ex ☐ UPS ☐ Speedee ☐ Client ☐ Commercial ☐ Pace ☐ Other:_____

Tracking Number: 8088 3344 1442

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Tin Can ☐ Other:_____ **Temp Blank rec:** ☐ Yes ☑ No

Temp. (TO17 and TO13 samples only) (°C): X **Corrected Temp (°C):** X **Thermom. Used:** ☐ B88A912167504 ☐ B88A0143310098 ☐ 151401163 ☐ 151401164

Temp should be above freezing to 6°C **Correction Factor:** X **Date & Initials of Person Examining Contents:** 8-3-17 AA

Type of ice Received ☐ Blue ☐ Wet ☑ None

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☑ Yes	☐ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Media: Air Can Airbag Filter TDT Passive				11.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	12.

Samples Received:

Canisters			Canisters		
Sample Number	Can ID	Flow Controller ID	Sample Number	Can ID	Flow Controller ID

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: _____ **Date:** _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

EMSL Analytical, Inc.

200 Route 130 North, NJ 08077 Tel: 856-858-4800

Client: Terracon Consultants, Inc
72 Pointe Circle
Greenville, SC 29615
Attention: Ben Hestir
Project: P&A Roof

EMSL Order ID: 371716398
Date Received: 08/08/2017
Date Analyzed: 08/15/2017
Date Reported: 08/15/2017

Dust Characterization (Level 1) - Relative Percent Composition (Method M280)
Identification of Biological & Non-Biological Particles by Optical Microscopy

Lab Sample Number	371716398-0001	371716398-0002
Client Sample ID	P&A-5	P&A-6
Sample Location	Office - Room 223/S Filing Cabinet	Office - Room 225/NE Cabinet
Sample Type	Swab	Swab
Particle Types	% of Total	% of Total
Particles of Plant Origin	-	-
Pollen	1	1
Fern/Moss Spores	-	-
Cellulose Fibers	45	50
Starch Particles	-	1
Trichomes	5	5
Other Plant Particles	-	-
Algae	-	-
Diatoms	-	-
Fungal Matter	10	5
Particles of Animal Origin	-	-
Skin Cells	-	-
Animal Hair	1	1
Mites	-	-
Insect Fragments	2	-
Non-Biological Particles	-	-
Opaque/Dark Particles	3	1
Glass Fibers	-	-
Synthetic Fibers	25	30
Translucent/Transparent Particles	3	5
Other Particles	5	1
Percentage Total	100	100

High levels of particulate can obscure each other and lead to inaccuracy. Identification of starch particles using this method is limited to particles with a distinct hilum, fissures, or lamellae. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Report Date	Report Revision	Revision Comments
8/15/2017	R0	Initial Report

Vincent Iuzzolino

Vincent Iuzzolino, M.S.
Microbiology Laboratory Director

EMSL Analytical, Inc.

200 Route 130 North, NJ 08077 Tel: 856-858-4800

Client: Terracon Consultants, Inc
72 Pointe Circle
Greenville, SC 29615
Attention: Ben Hestir
Project: P&A Roof

EMSL Order ID: 371716398
Date Received: 08/08/2017
Date Analyzed: 08/15/2017
Date Reported: 08/15/2017

Dust Characterization (Level 1) - Relative Percent Composition (Method M280)
Identification of Biological & Non-Biological Particles by Optical Microscopy

Lab Sample Number	371716398-0003	371716398-0004
Client Sample ID	P&A-7	P&A-8
Sample Location	Office - Room 224/NW Filing Cabinet	Office - Room 206/E Filing Cabinet
Sample Type	Swab	Swab
Particle Types	% of Total	% of Total
Particles of Plant Origin	-	-
Pollen	1	1
Fern/Moss Spores	-	-
Cellulose Fibers	35	25
Starch Particles	-	-
Trichomes	5	-
Other Plant Particles	1	2
Algae	-	-
Diatoms	-	-
Fungal Matter	10	30
Particles of Animal Origin	-	-
Skin Cells	-	-
Animal Hair	5	5
Mites	-	-
Insect Fragments	-	-
Non-Biological Particles	-	-
Opaque/Dark Particles	5	5
Glass Fibers	-	-
Synthetic Fibers	30	25
Translucent/Transparent Particles	3	2
Other Particles	5	5
Percentage Total	100	100

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Report Date	Report Revision	Revision Comments
8/15/2017	R0	Initial Report

Vincent Iuzzolino

Vincent Iuzzolino, M.S.
Microbiology Laboratory Director

EMSL Analytical, Inc.

200 Route 130 North, NJ 08077 Tel: 856-858-4800

Client: Terracon Consultants, Inc
72 Pointe Circle
Greenville, SC 29615
Attention: Ben Hestir
Project: P&A Roof

EMSL Order ID: 371716398
Date Received: 08/08/2017
Date Analyzed: 08/15/2017
Date Reported: 08/15/2017

Dust Characterization (Level 1) - Relative Percent Composition (Method M280)
Identification of Biological & Non-Biological Particles by Optical Microscopy

Lab Sample Number	371716398-0005	371716398-0006
Client Sample ID	P&A-9	P&A-10
Sample Location	Office - Room A203/W Side Common Area Bookshelf	Office - Room 112-A/NE Filing Cabinet
Sample Type	Swab	Swab
Particle Types	% of Total	% of Total
Particles of Plant Origin	-	-
Pollen	1	-
Fern/Moss Spores	-	-
Cellulose Fibers	20	30
Starch Particles	-	-
Trichomes	5	5
Other Plant Particles	-	-
Algae	-	-
Diatoms	-	-
Fungal Matter	40	15
Particles of Animal Origin	-	-
Skin Cells	-	-
Animal Hair	-	10
Mites	-	-
Insect Fragments	-	1
Non-Biological Particles	-	-
Opaque/Dark Particles	5	5
Glass Fibers	-	-
Synthetic Fibers	20	25
Translucent/Transparent Particles	5	5
Other Particles	4	4
Percentage Total	100	100

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Report Date	Report Revision	Revision Comments
8/15/2017	R0	Initial Report

Vincent Iuzzolino

Vincent Iuzzolino, M.S.
Microbiology Laboratory Director

EMSL Analytical, Inc.

200 Route 130 North, NJ 08077 Tel: 856-858-4800

Client: Terracon Consultants, Inc
72 Pointe Circle
Greenville, SC 29615
Attention: Ben Hestir
Project: P&A Roof

EMSL Order ID: 371716398
Date Received: 08/08/2017
Date Analyzed: 08/15/2017
Date Reported: 08/15/2017

Dust Characterization (Level 1) - Relative Percent Composition (Method M280)
Identification of Biological & Non-Biological Particles by Optical Microscopy

Lab Sample Number	371716398-0007	371716398-0008
Client Sample ID	P&A-11	P&A-12
Sample Location	Office - Room 111/ W Credenza	Office - Room 110/Return Air Register S Side
Sample Type	Swab	Swab
Particle Types	% of Total	% of Total
Particles of Plant Origin	-	-
Pollen	1	1
Fern/Moss Spores	-	-
Cellulose Fibers	35	25
Starch Particles	-	-
Trichomes	-	-
Other Plant Particles	-	-
Algae	-	-
Diatoms	-	-
Fungal Matter	30	4
Particles of Animal Origin	-	-
Skin Cells	-	-
Animal Hair	-	-
Mites	-	-
Insect Fragments	1	5
Non-Biological Particles	-	-
Opaque/Dark Particles	5	25
Glass Fibers	-	-
Synthetic Fibers	20	-
Translucent/Transparent Particles	5	30
Other Particles	3	10
Percentage Total	100	100

High levels of particulate can obscure each other and lead to inaccuracy. Identification of starch particles using this method is limited to particles with a distinct hilum, fissures, or lamellae. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Report Date	Report Revision	Revision Comments
8/15/2017	R0	Initial Report

Vincent Iuzzolino

Vincent Iuzzolino, M.S.
Microbiology Laboratory Director

EMSL Analytical, Inc.

200 Route 130 North, NJ 08077 Tel: 856-858-4800

Client: Terracon Consultants, Inc
72 Pointe Circle
Greenville, SC 29615
Attention: Ben Hestir
Project: P&A Roof

EMSL Order ID: 371716398
Date Received: 08/08/2017
Date Analyzed: 08/15/2017
Date Reported: 08/15/2017

Dust Characterization (Level 1) - Relative Percent Composition (Method M280)
Identification of Biological & Non-Biological Particles by Optical Microscopy

Lab Sample Number	371716398-0009	371716398-00010
Client Sample ID	P&A-13	P&A-14
Sample Location	Office - Room 108/Top Of Refrigerator	Office - Room 112-A/Supply Register
Sample Type	Swab	Swab
Particle Types	% of Total	% of Total
Particles of Plant Origin	-	-
Pollen	1	-
Fern/Moss Spores	-	-
Cellulose Fibers	35	1
Starch Particles	-	-
Trichomes	10	-
Other Plant Particles	1	-
Algae	-	-
Diatoms	-	-
Fungal Matter	1	75
Particles of Animal Origin	-	-
Skin Cells	-	-
Animal Hair	-	-
Mites	-	-
Insect Fragments	2	-
Non-Biological Particles	-	-
Opaque/Dark Particles	5	15
Glass Fibers	-	-
Synthetic Fibers	35	-
Translucent/Transparent Particles	5	7
Other Particles	5	2
Percentage Total	100	100

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Report Date	Report Revision	Revision Comments
8/15/2017	R0	Initial Report

Vincent Iuzzolino

Vincent Iuzzolino, M.S.
Microbiology Laboratory Director

OrderID: 371716398

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Industrial Hygiene Chain of Custody

EMSL Order Number (Lab Use Only): 371716398

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 858-3502

Report To Contact Name: Ben Hestir		Bill To Company: Terracon (GTER78)	Client ID #:
Company Name: Terracon Consultants, Inc.		Attention To:	
Street: 72 Pointe Circle		Street:	
City: Greenville	State/Province: SC	City:	State/Province: Zip/Postal Code:
Phone : 864-293-7348	Fax :	Phone:	Fax:
Project Name: P&A Roof		Email Results To: ben.hestir@terracon.com	U.S. State where Samples Collected: SC
# Samples in Shipment: 10	Date of Shipment: 8/7/17	Purchase Order: 86127158 - Task 98	Sampled By (Signature): Ben Hestir

Turnaround Time (TAT) – Please Check: If No Selection Made, Standard 2 Week TAT Will Apply

☐ 2 Week ☑ 1 Week ☐ 4 Day ☐ 3 Day ☐ 2 Day ☐ 1 Day ☐ Other (Call Lab)

Media Type:

Manufacturer/Part #: Lot #:

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Client Sample ID	Location/Description	Analyte / Method	Media	Flow (lpm)	Sample Time On	Sample Time Off	Volume / Area	Sample Type	Sample Date	Comments
P&A-5	Office - Room 223	M281	Swab	NA		1509	~4 in2	☑ Area ☐ Personal	8/2/17	S filing cabinet
P&A-6	Office - Room 225	M281	Swab	NA		1514	~4 in2	☑ Area ☐ Personal	8/2/17	NE cabinet
P&A-7	Office - Room 224	M281	Swab	NA		1518	~4 in2	☑ Area ☐ Personal	8/2/17	NW filing cabinet
P&A-8	Office - Room 206	M281	Swab	NA		1522	~4 in2	☑ Area ☐ Personal	8/2/17	E filing cabinet
P&A-9	Office - Room A-203	M281	Swab	NA		1528	~4 in2	☑ Area ☐ Personal	8/2/17	W side common area book shelf
P&A-10	Office - Room112-A	M281	Swab	NA		1534	~4 in2	☑ Area ☐ Personal	8/2/17	NE filing cabinet
P&A-11	Office - Room 111	M281	Swab	NA		1539	~4 in2	☑ Area ☐ Personal	8/2/17	W credenza
P&A-12	Office - Room 110	M281	Swab	NA		1542	~4 in2	☑ Area ☐ Personal	8/2/17	Return air register S side

Note: Most NIOSH and OSHA methods require field blanks. It is the IH field sampler's responsibility to submit the proper number of field blanks and duplicates.

Released By	Date	Received By	Date
Ben Hestir/Terracon	8/7/17	ORM FE	8/8/17 0900

Comments:

10X2

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Industrial Hygiene Chain of Custody

EMSL Order Number (Lab Use Only): 371716398

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 858-3502

OrderID: 371716398

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Client Sample ID	Location/Description	Analyte / Method	Media	Flow (lpm)	Sample Time On	Sample Time Off	Volume / Area	Sample Type	Sample Date	Comments
P&A-13	Office - Room 108	M281	Swab	NA		1549	~4 in2	☑ Area ☐ Personal	8/2/17	Top of refrigerator
P&A-14	Office - Room 112-A	M281	Swab	NA		1554	~4 in2	☑ Area ☐ Personal	8/2/17	Supply register
								☐ Area ☐ Personal		
								☐ Area ☐ Personal		
								☐ Area ☐ Personal		
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Comments:

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