



1. PURPOSE

Camden DeVane and Jonathan Laird, Industrial Hygienists with SRP Environmental, LLC (SRP), conducted an industrial hygiene survey on June 17 and 18, 2024, for UNC Charlotte, Charlotte, North Carolina campus. The purpose of this sampling event was to quantitatively characterize the following:

- **PCBs** - across 25 buildings at the UNC Charlotte campus.

2. SAMPLING/MONITORING METHODS

The methods and means for the sampling of the materials listed are discussed in general terms below.

2.1 Air Samples

The air samples were collected using specific sampling trains including OVS-2 tubes. OVS-2 tubes contain a combination of a glass fiber filter and an adsorbent, such as XAD-2 resin, which helps in trapping both particulate and vapor-phase contaminants. The OVS-2 tube was labeled with pertinent information, including sample ID, date, and time. Flexible tubing was connected to the inlet the OVS-2 tube, and the other end was attached to an AirChek low-flow sampling pump, ensuring all connections were secure to prevent leaks. The pump ran for approximately 60 minutes for each sample collected at a flow rate of 1 L/min. After the sampling period was complete, the pump was turned off, the tubing was disconnected, and the OVS-2 tube was capped for transport to the laboratory for analysis for PCBs.

At the beginning of the assessment, the sampling devices were started and placed in an area designated by UNC Charlotte personnel to be collected as an area sample. When the assessment ended, the samples were collected from the areas and sealed. The samples were then sent to the laboratory to quantify the concentrations of materials found on the collection media. A Field Blank for each day of sampling was also submitted.

2.1.1 Air Sampling - Equipment Specifications

Equipment utilized for the collection of air during the survey included sampling media, tubing, and an air sampling pump, which was checked with a secondary calibrator known as a rotameter. The serial number/identification number, calibration date, and flow rate for the equipment can be found in Table 1 below.

All samples were sent to the Wisconsin Occupational Health Laboratory, 2601 Agriculture Drive in Madison, WI 53718, an American Industrial Hygiene Association (AIHA) Accredited Laboratory for analysis.

2.1.2 Table 1 – Air Equipment Serial Numbers and Calibration Dates

Equipment	Serial/ID Number	Flow Rate (Liters per minute)	Calibration Date
AirChek52	A064584	1.0	June 6, 2024
AirChek52	A064398	1.0	June 6, 2024
AirChek52	817170	1.0	June 6, 2024
AirChek52	A064398	1.0	June 6, 2024

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AirChek52	817170	1.0	June 6, 2024
AirChek52	A061348	1.0	June 6, 2024
AirChek52	649961	1.0	June 6, 2024
AirChek52	675505	1.0	June 6, 2024
AirChek52	A064384	1.0	June 6, 2024
AirChek52	A064390	1.0	June 6, 2024
AirChek52	001060	1.0	June 6, 2024
AirChek52	001021	1.0	June 6, 2024
AirChek52	A064393	1.0	June 6, 2024
AirChek52	A061349	1.0	June 6, 2024
AirChek52	A064593	1.0	June 6, 2024
BIOS	DCLM 3568		June 6, 2024

3. SAMPLING EVENT

Before utilizing electronic equipment, SRP replaces all batteries in the equipment to aid in the proper functioning of the equipment. The commencement of the sampling event varied, aligning with the length of each sample at each location monitored throughout the campus. The dates of the sampling event were chosen as the majority of the sample buildings were unoccupied with students and faculty staff.

4. EXPOSURE LIMITS

The Occupational Safety and Health Administration (OSHA) has established Permissible Exposure Limits (PELs) for employees exposed to workplace hazards. At the present time OSHA has established PELs for two PCBs which are noted below and in the results table for comparison purposes.

The regulation governing the occupational exposure standard for Chlorodiphenyl (42% Chlorine) (PCB) is found in the Occupational Safety and Health Administration (OSHA) standard Title 29 of the Code of Federal Regulations (29 CFR) 1910.1000 Table Z-1. The Permissible Exposure Limit (PEL) is an airborne concentration of 1 milligram per cubic meter of air (1 mg/m³), calculated as an eight-hour TWA.

The regulation governing the occupational exposure standard for Chlorodiphenyl (54% Chlorine) (PCB) is found in the Occupational Safety and Health Administration (OSHA) standard Title 29 of the Code of Federal Regulations (29 CFR) 1910.1000 Table Z-1. The Permissible Exposure Limit (PEL) is an airborne concentration of 0.5 milligram per cubic meter of air (0.5 mg/m³), calculated as an eight-hour TWA.

4.1 Employee Exposure Limit

The UNC Charlotte Campus location currently adheres to the thresholds set for by the OSHA PCB standards as adopted by the State of North Carolina.

5. CONCLUSION

The results of the data collected are indicative of the processes and environmental conditions on this specific date and may not reflect processes and environmental conditions prior to and/or following the survey.



5.1 Monitoring Results

Based on the analytical data provided by the laboratory, the results for the sampling are given in the various tables below with the appropriate exposure limits shown. The analysis is based on all PCBs which could be detected by the laboratory.

Table 2 – PCBs

Constituent	Sample #	Building	Location	Results	Units	OSHA Limits	Exceedance
PCBs	A-1	Holhouser 11	Common Area near 1114	< 0.017	mg/m ³	1/0.5	No
PCBs	A-2	Holhouser 10	Room 1030	< 0.017	mg/m ³	1/0.5	No
PCBs	A-3	Holhouser 9	Room 907	< 0.017	mg/m ³	1/0.5	No
PCBs	A-4	Holhouser 8	Common Area near 812	< 0.017	mg/m ³	1/0.5	No
PCBs	A-5	Holhouser 7	Room 723	< 0.017	mg/m ³	1/0.5	No
PCBs	A-6	Holhouser 6	Room 611	< 0.017	mg/m ³	1/0.5	No
PCBs	A-7	Holhouser 5	Common Area near 514	< 0.017	mg/m ³	1/0.5	No
PCBs	A-8	Holhouser 4	Room 412	< 0.017	mg/m ³	1/0.5	No
PCBs	A-9	Holhouser 3	Room 201	< 0.017	mg/m ³	1/0.5	No
PCBs	A-10	Holhouser 2	Common Area near 232	< 0.017	mg/m ³	1/0.5	No
PCBs	A-11	Holhouser 1	Lounge	< 0.017	mg/m ³	1/0.5	No
PCBs	A-12	Holhouser G	008 (Laundry)	< 0.017	mg/m ³	1/0.5	No
PCBs	A-13	Scott 11	Room 1123	< 0.017	mg/m ³	1/0.5	No
PCBs	A-14	Scott 10	Lounge 1031	< 0.017	mg/m ³	1/0.5	No
PCBs	A-15	Scott 9	Room 904	< 0.017	mg/m ³	1/0.5	No
PCBs	A-16	Scott 8	Lounge 831	< 0.017	mg/m ³	1/0.5	No
PCBs	A-17	Scott 7	Lounge 722	< 0.017	mg/m ³	1/0.5	No
PCBs	A-18	Scott 6	Lounge 631	< 0.017	mg/m ³	1/0.5	No
PCBs	A-19	Scott 5	Lounge 510	< 0.017	mg/m ³	1/0.5	No
PCBs	A-20	Scott 4	Lounge 431	< 0.017	mg/m ³	1/0.5	No



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Constituent	Sample #	Building	Location	Results	Units	OSHA Limits	Exceedance
PCBs	A-21	Scott 3	Room 302	< 0.017	mg/m ³	1/0.5	No
PCBs	A-22	Scott 2	Lounge 231	< 0.017	mg/m ³	1/0.5	No
PCBs	A-23	Scott 1	Room 103 Study Room	< 0.017	mg/m ³	1/0.5	No
PCBs	A-24	Scott G	003C	< 0.017	mg/m ³	1/0.5	No
PCBs	A-25	Sanford 11	Seminar	< 0.017	mg/m ³	1/0.5	No
PCBs	A-26	Sanford 10	Lounge	< 0.017	mg/m ³	1/0.5	No
PCBs	A-27	Sanford 9	Seminar	< 0.017	mg/m ³	1/0.5	No
PCBs	A-28	Sanford 8	Lounge	< 0.017	mg/m ³	1/0.5	No
PCBs	A-29	Sanford 7	Seminar	< 0.017	mg/m ³	1/0.5	No
PCBs	A-30	Sanford 6	Lounge	< 0.017	mg/m ³	1/0.5	No
PCBs	A-31	Sanford 5	Room 525	< 0.017	mg/m ³	1/0.5	No
PCBs	A-32	Sanford 4	Lounge	< 0.017	mg/m ³	1/0.5	No
PCBs	A-33	Sanford 3	Room 310	< 0.017	mg/m ³	1/0.5	No
PCBs	A-34	Sanford 2	Lounge	< 0.017	mg/m ³	1/0.5	No
PCBs	A-35	Sanford 1	Hallway	< 0.017	mg/m ³	1/0.5	No
PCBs	A-36	Sanford G	Kitchen	< 0.017	mg/m ³	1/0.5	No
PCBs	A-37	HRL G	Room 018	< 0.017	mg/m ³	1/0.5	No
PCBs	A-38	HRL 2	Room 138	< 0.017	mg/m ³	1/0.5	No
PCBs	A-39	Athletic Storage	Room 012E Garage	< 0.017	mg/m ³	1/0.5	No
PCBs	A-40	Memorial	Outside Room 144	< 0.016	mg/m ³	1/0.5	No
PCBs	A-41	Memorial	Room 141A	< 0.017	mg/m ³	1/0.5	No
PCBs	A-42	Belk Gym	Room 007C	< 0.017	mg/m ³	1/0.5	No
PCBs	A-43	Belk Gym 1	Front Desk	< 0.017	mg/m ³	1/0.5	No
PCBs	A-44	Belk Gym 2	Room 201	< 0.017	mg/m ³	1/0.5	No
PCBs	A-45	Belk Gym 2	Room 212	< 0.017	mg/m ³	1/0.5	No
PCBs	A-46	Belk Gym G	Room 015	< 0.017	mg/m ³	1/0.5	No
PCBs	A-47	Jamil Pantry	Garage	< 0.015	mg/m ³	1/0.5	No

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Constituent	Sample #	Building	Location	Results	Units	OSHA Limits	Exceedance
PCBs	A-48*	Jamil Pantry	House	< 0.017	mg/m ³	1/0.5	No
PCBs	A-49	Niner House	In front of Room 2201	< 0.017	mg/m ³	1/0.5	No
PCBs	A-50**	Niner House	Basement	< 0.017	mg/m ³	1/0.5	No
PCBs	A-51	Adkins 10	Outside Special Collections	< 0.017	mg/m ³	1/0.5	No
PCBs	A-52	Adkins 9	Break Room	< 0.017	mg/m ³	1/0.5	No
PCBs	A-53	Adkins 8	Main Room	< 0.017	mg/m ³	1/0.5	No
PCBs	A-54	Adkins 7	Main Room	< 0.017	mg/m ³	1/0.5	No
PCBs	A-55	Adkins 6	Main Room	< 0.017	mg/m ³	1/0.5	No
PCBs	A-56	Adkins 5	Main Room	< 0.017	mg/m ³	1/0.5	No
PCBs	A-57	Adkins 4	Mechanical Room	< 0.017	mg/m ³	1/0.5	No
PCBs	A-58	Adkins 3	Main Room	< 0.017	mg/m ³	1/0.5	No
PCBs	A-59	Adkins 2	Area 49 Multimedia	< 0.017	mg/m ³	1/0.5	No
PCBs	A-60	Adkins 1	Main Area Computers	< 0.017	mg/m ³	1/0.5	No
PCBs	A-61	Adkins Main Floor	Study Room G37	< 0.017	mg/m ³	1/0.5	No
PCBs	A-62	Adkins Basement	Mechanical Room	< 0.017	mg/m ³	1/0.5	No
PCBs	A-63	Cone South 2	Outside Room 222	< 0.017	mg/m ³	1/0.5	No
PCBs	A-64	Cone South 3	Room 306	< 0.017	mg/m ³	1/0.5	No
PCBs	A-65***	Cone South 1	Meeting Room 112	--	mg/m ³	1/0.5	No
PCBs	A-66	Cone North 3	Piano Room	< 0.017	mg/m ³	1/0.5	No
PCBs	A-67	Cone North 2	After Hours Room	< 0.016	mg/m ³	1/0.5	No
PCBs	A-68	Cone North 1	Room 175	< 0.017	mg/m ³	1/0.5	No
PCBs	A-69	King 2	Room 222	< 0.017	mg/m ³	1/0.5	No
PCBs	A-70	King 1	Room 105	< 0.017	mg/m ³	1/0.5	No
PCBs	A-71	King Basement	Basement Breakroom	< 0.017	mg/m ³	1/0.5	No
PCBs	A-72	Prospector 1	Outside Room 134	< 0.017	mg/m ³	1/0.5	No

*Listed as A-50-1 in Lab Report /**Listed as A-50-2 in Lab Report/*** Sample Lost in Transit

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Constituent	Sample #	Building	Location	Results	Units	OSHA Limits	Exceedance
PCBs	A-73	Prospector 2	Cafeteria	< 0.017	mg/m ³	1/0.5	No
PCBs	A-74	Prospector 3	Faculty Dining Room	< 0.017	mg/m ³	1/0.5	No
PCBs	A-75	McEiry 4	Room 401	< 0.017	mg/m ³	1/0.5	No
PCBs	A-76	McEiry 3	Room 307	< 0.017	mg/m ³	1/0.5	No
PCBs	A-77	McEiry 2	Outside Room 221	< 0.017	mg/m ³	1/0.5	No
PCBs	A-78	McEiry Basement	Basement Mech Room	< 0.017	mg/m ³	1/0.5	No
PCBs	A-79	Macy 1	Main Lobby	< 0.017	mg/m ³	1/0.5	No
PCBs	A-80	Macy 2	Room 206	< 0.017	mg/m ³	1/0.5	No
PCBs	A-81	Bernard 2	Break Room 230A	< 0.017	mg/m ³	1/0.5	No
PCBs	A-82	Bernard 1	Outside Student Office	< 0.017	mg/m ³	1/0.5	No
PCBs	A-83	Denny 1	Room 106	< 0.017	mg/m ³	1/0.5	No
PCBs	A-84	Denny 2	Room 200	< 0.017	mg/m ³	1/0.5	No
PCBs	A-85	Garinger 2	Mech Room 220A	< 0.017	mg/m ³	1/0.5	No
PCBs	A-87	Garinger 1	Outside Room 113	< 0.017	mg/m ³	1/0.5	No
PCBs	A-88	Winningham 2	Room 205	< 0.017	mg/m ³	1/0.5	No
PCBs	A-89	Winningham 1	Room 114 Lounge	< 0.017	mg/m ³	1/0.5	No
PCBs	A-90	Rowe 1	Room 130	< 0.017	mg/m ³	1/0.5	No
PCBs	A-91	Rowe 2	Room 285	< 0.017	mg/m ³	1/0.5	No
PCBs	A-92	Rowe Grade	Room 113	< 0.017	mg/m ³	1/0.5	No
PCBs	A-93	Colvard 1	Room 1040	< 0.017	mg/m ³	1/0.5	No
PCBs	A-94	Colvard 3	Room 3120	< 0.017	mg/m ³	1/0.5	No
PCBs	A-95	Colvard 4	Room 4123	< 0.017	mg/m ³	1/0.5	No
PCBs	A-96	Colvard 5	Room 5092	< 0.017	mg/m ³	1/0.5	No
PCBs	A-97	Colvard 2	Outside Room 2201	< 0.017	mg/m ³	1/0.5	No

Note – Sample A-86 was not used

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Constituent	Sample #	Building	Location	Results	Units	OSHA Limits	Exceedance
PCBs	A-98	Kennedy 1	Outside Room 101	< 0.017	mg/m ³	1/0.5	No
PCBs	A-99	Kennedy 2	Outside Room 239	< 0.017	mg/m ³	1/0.5	No
PCBs	A-100	Kennedy 3	Outside Room 330	< 0.017	mg/m ³	1/0.5	No
PCBs	A-101	Smith 3	Room 353	< 0.017	mg/m ³	1/0.5	No
PCBs	A-102	Smith 3	Room 301	< 0.017	mg/m ³	1/0.5	No
PCBs	A-103	Smith 2	Outside Room 226	< 0.017	mg/m ³	1/0.5	No
PCBs	A-104	Smith 2	Room 218	< 0.017	mg/m ³	1/0.5	No
PCBs	A-105	Smith 1	Room 103	< 0.017	mg/m ³	1/0.5	No
PCBs	A-106	Smith 1	Concrete Lab	< 0.017	mg/m ³	1/0.5	No
PCBs	A-107	Solvent Storage		< 0.017	mg/m ³	1/0.5	No
PCBs	A-108	McEiry 1	First floor Lobby	< 0.017	mg/m ³	1/0.5	No
PCBs	B-1	--	--	NA	mg/m ³	1/0.5	No
PCBs	B-2	--	--	NA	mg/m ³	1/0.5	No

6. EXPOSURE SUMMARY

The following exposure summaries are provided in correlation with the analytical results and data referenced within section 6.

6.1 Exposure Summary

Based on the samples collected obtained from the day of the assessment, the following was identified:

- All PCB samples were found to be below the OSHA PELs for the two representative PCBs that have established standards.
- All PCB results were below the detection threshold for the method based on the length of the samples. In other words, no PCBs were found based on the sampling and analysis conducted on the days of the survey.

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