

Bureau of Radiation Protection Field Survey Summary

 Milton, PA

On May 12, 2025, a team of health physicists of the Pennsylvania Department of Environmental Protection, Bureau of Radiation Protection (BRP), conducted a radiological survey at a private residence located in Milton, Pennsylvania. This action followed a notification that radiation alarms had been triggered at local landfills. The source of the radiological material was traced back to waste originating from the private residence.

During the site visit, BRP staff conducted a gamma walkover survey of each room in the house using a Ludlum Model 2221 survey meter paired with a Model 44-10 probe (2"x2" NaI detector). Background radiation levels were established offsite and measured approximately 4,000 counts per minute (cpm). The survey included scanning approximately 80–90% of the floor area in each room, with focused scans on high-retention areas such as cabinets, drawers, and tabletops. The floor plan and layout of each floor of the residence are hand sketched in Figures 1, 2, and 3.

Results

Contamination Presence: Radiological sources and hazardous chemicals were identified throughout the house. A SPIRAce RadioIsotope Identifier indicated the presence of Americium 241 and Radium 226. Photos were taken of the materials, and they have been moved to a landfill pending a final determination on disposal.

Gamma Survey Results: Isolated areas of elevated radiation were identified in multiple rooms, with readings reaching as high as 550,000 cpm. The bedroom (Labeled bedroom 1) on the ground floor exhibited widespread contamination, affecting approximately 50% of the floor space and cabinetry. The survey results of each room are presented in Figures 1, 2, and 3.

Follow-up Static Measurements: Areas of elevated radiation identified in the initial walkover survey were further assessed using a Ludlum Model 2360 paired with a Zinc Sulfide (ZnS) probe. One-minute static measurements were recorded at each location and labeled sequentially in the floorplan sketches. The results, expressed in disintegrations per minute per 100 square centimeters (dpm/100cm²), are presented in Table 1.

Conclusion

Based on the results of the radiological survey, the residence is not suitable for free release. Cleanup and decontamination activities are currently beyond the scope of BRP. A

decommissioning plan will need to be developed and implemented at a future date to address remediation.

Figure 1

2900-FM-RP0049 2/2010



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF RADIATION PROTECTION

Calculation Record / Notes

Licensee/Project: [REDACTED]	Reference No.:	Page	of
Performed by: [REDACTED]	Date: 5/12/25	Reviewed by:	Date:

Basement

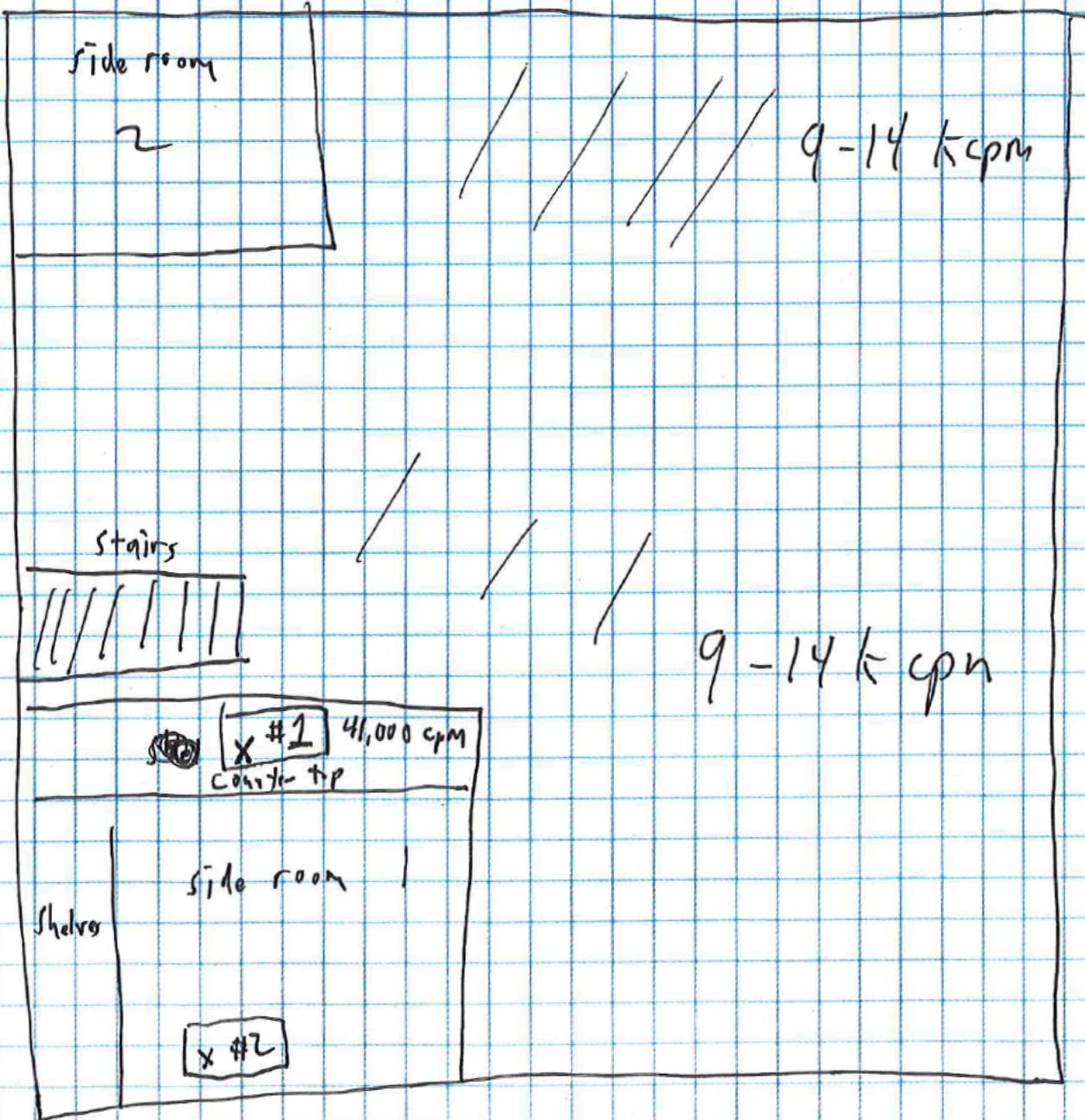


Figure 2

2900-FM-RP0049 2/2010



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF RADIATION PROTECTION

Calculation Record / Notes

Licensee/Project: [REDACTED]	Reference No.:	Page of
Performed by: [REDACTED]	Date: 5/12/21	Reviewed by:
		Date:

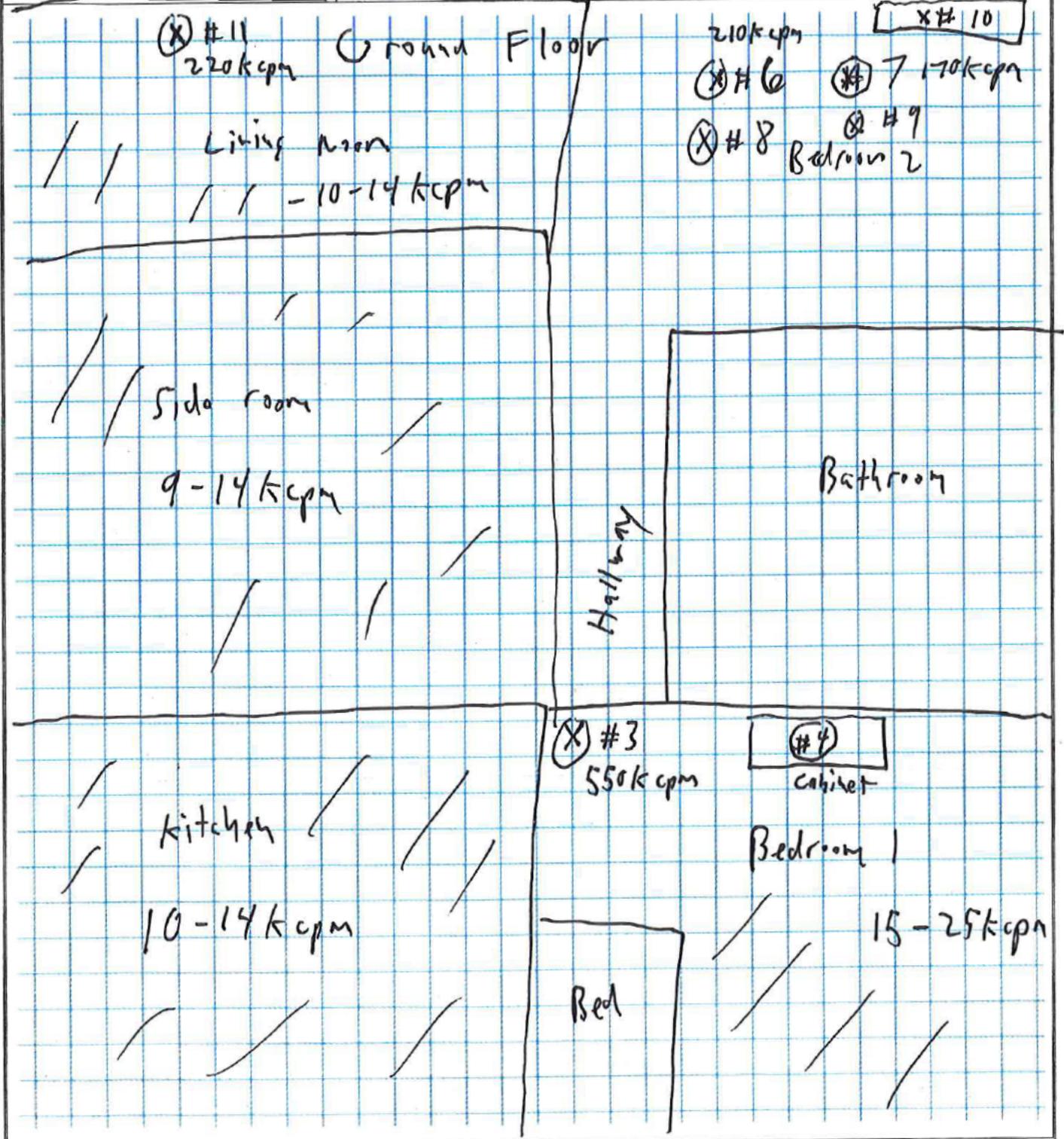


Figure 3



Calculation Record / Notes

Licensee/Project:	[REDACTED]	Reference No.:	Page of	
Performed by:	[REDACTED]	Date: 5/12/20	Reviewed by:	Date:

Floor # 2 Bedroom

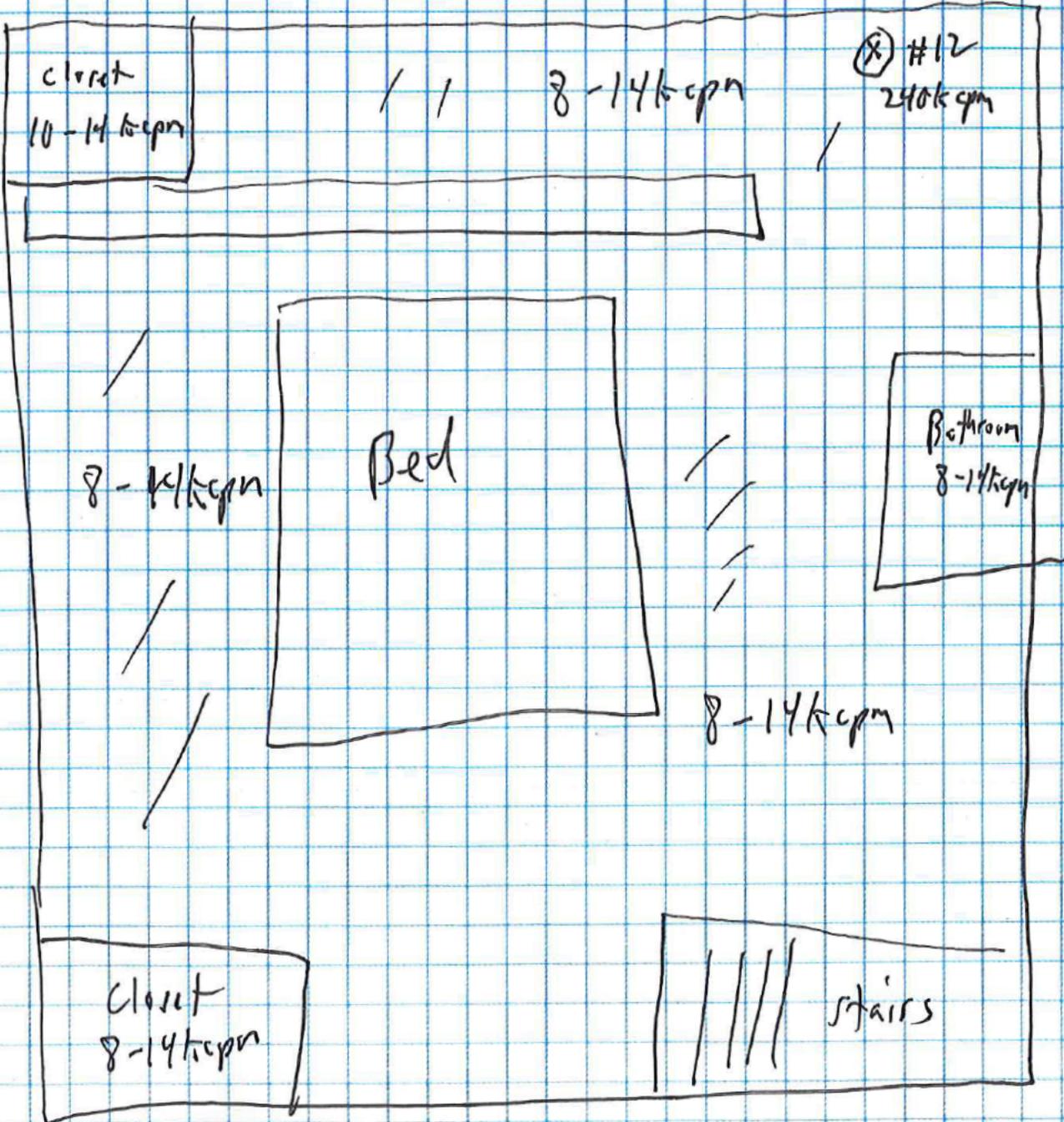


Table 1

PADEP Bureau of Radiation Protection
Surface Activity Survey Data

Location:				
Surveyor(s):		Date:	5/12/2025	
		Time:		
Instrumentation:	Ludlum 2360 #3	Probe Area:	100	cm ²
Ser. #'s Instrument	234833	Probe	244533	
Efficiency: Alpha	0.13	x 0.25 Surface Eff	0.03	
Beta	0.02	x 0.5 Surface Eff	0.0104	
Cal Date:	10/11/2024	Cal Due Date:	10/11/2025	

Location:				
Surveyor(s):		Date:	5/12/2025	
		Time:		
Instrumentation:	Ludlum 2360 #4	Probe Area:	100	cm ²
Ser. #'s Instrument	310141	Probe	335961	
Efficiency: Alpha	0.18	x 0.25 Surface Eff	0.04	
Beta	0.03	x 0.5 Surface Eff	0.013	
Cal Date:	3/27/2025	Cal Due Date:	3/27/2026	

Alpha Bkg.	8	counts
Bkg count time	10	min.
Alpha Bkg cpm	0.80	
Beta Bkg	753	counts
Bkg count time	10	min.
Beta Bkg cpm	75	

Alpha Bkg.	1	counts
Bkg count time	10	min.
Alpha Bkg cpm	0.10	
Beta Bkg	1399	counts
Bkg count time	10	min.
Beta Bkg cpm	140	

Static Results:

Meas. #	Room	Detector	LSC wipe	Count Time (minutes)	Alpha		Beta			
					Gross Counts	Net CPM	Activity (dpm/100cm ²)	Gross Counts	Net CPM	Activity (dpm/100cm ²)
1	Basement Bench Top	4	NA	1	259	259	5,766	1,774	1,634	125,700
2	Basement Bench Top *	3	NA	1	320	319	9,822	1,628	1,553	149,298
3	Floor Bedroom	3	NA	1	125	124	3,822	1,355	1,280	123,048
4	TV Cabinet Bedroom *	3	NA	1	6,452	6,451	198,498	21,558	21,483	2,065,644
5	Floor Bedroom *	3	NA	1	26	25	775	276	201	19,298
6	Floor/Carpet Office *	3	NA	1	32	31	960	628	553	53,144
7	Floor/Carpet Office*	3	NA	1	28	27	837	1,024	949	91,221
8	Under Carpet Office *	3	NA	1	147	146	4,498	597	522	50,163
10	Led Case Office *	3	NA	1	77	77	2,366	3,684	3,609	346,990
11	Carpet Living Room *	3	NA	1	29	28	868	27,659	27,584	2,652,279
12	Carpet Upstairs Bedroom*	3	NA	1	27	26	806	201	126	12,087

* Static not taken on contact due to possibility of cross contamination