Sampling Report for Lead in Soil at Temple Park Playground and Adjacent Areas Dutchess Terrace and Market Street Wappingers Falls, New York July 27, 2023

Summary

On July 13, 2023, staff from several New York State agencies participated in sampling of soil for lead at the Temple Park Playground and adjacent areas in Wappingers Falls, New York (Figure 1). The New York State Department of Health's (NYSDOH) Center for Environmental Health initiated the sampling in response to a July 9th Wall Street Journal (WSJ) article reporting elevated lead levels in soil beneath telecommunication cable lines at the park (Pulliam et al 2023). Others involved onsite included staff from the New York State Department of Health's Metropolitan Area Regional Office, the Dutchess County Department of Health, the New York State Department of Environmental Conservation's (NYSDEC) Division of Environmental Remediation and the Village of Wappingers Falls Department of Public Works. Multiple X-ray fluorescence (XRF) screenings and the results of twenty-five discrete surface soil samples taken at the Temple Park Playground and adjacent areas do not provide evidence for excessive or widespread lead contamination in soil due to the telecommunication cable lines and do not suggest a significant exposure or public health risk for people involved in recreational activities at this location.

Site Observations

On arrival at the site, staff noted a line of flags with unique identifiers, and subsequent holes in rows of three running the entire length underneath the Market Street and Dutchess Terrace telecommunication cable lines (Attachment 1 photos 2-7). According to Village of Wappingers Falls staff, these flags appeared two weeks ago, and their origin is not clear. During sampling activities, a neighbor living across the street from the park confirmed this timeline, specifically, that the flags and their corresponding holes appeared two weeks earlier and also that the WSJ was present six weeks prior. A variety of electrical and telecommunication overhead lines were seen running the perimeter of the park along Market Street.

X-Ray Fluorescence (XRF) Screening

NYSDOH staff used a Viken PB200i XRF to conduct an initial screening of the lead in soil at the playground and surrounding areas to evaluate if soil readings from any areas reflected significant gradients in lead content. Background XRF readings were taken from across Market Street directly across from the playground, across Market Street next to the Wappingers Falls Highway Department building, and from an area that was previously used as a soccer/sports field. Readings were also taken from areas directly underneath the telecommunication cable line as well as five and ten feet to the south of the line in the direction of the playground. None of these areas potentially influenced by lead in the telecommunications cables showed XRF results that differed markedly from background area readings.

Soil Samples

Lead is naturally occurring in soils, and typical lead soil levels range from 50 to 400 parts per million (ppm) (USEPA, 2023). NYSDOH staff collected "background" soil samples (0 – 2-inch depth) from areas where lead soil levels were unlikely to be influenced by the telecommunication cables (30 to 150 feet from where the cables were present), as well as numerous samples to evaluate lead soil levels under the cables and adjacent playground. All soil samples were geo-coded and sample locations are shown in Figure 2. Three "background" samples were collected, one from the former soccer field that is part of the park but at distance of approximately 150 feet from overhead cables (Sample G3), another from across Market Street directly in front of the playground in soil between the road and sidewalk approximately 30 feet from overhead cables (Sample G1), and one from across the park on Market Street in soil located near the road and next to the Village's Highway Department approximately 300 feet from overhead cables (Sample G4). An additional sample was collected underneath a telecommunication cable line that was closer to the ground across Market Street behind the "Industrial Park" sign to see if the closer proximity to the ground impacted the lead level in the soil (Sample G2).

NYSDOH staff collected surface soil samples (0 – 2-inch depth) with a focus on evaluating if the areas directly underneath the telecommunication cables had increased lead soil level, and whether other areas near the cables were also being affected, that would indicate a lead exposure concern for people using the park (Figure 2). A total of ten soil samples were collected along Market Street directly underneath the cable line running along Market Street on the perimeter of Temple Park (Samples A1 -A10). Six samples were taken five feet to the south of the telecommunication cable line (Samples B1 - B6), three of which were in the playground (Samples B1 - B3). Four samples were taken ten feet to the south of the telecommunication cable line (Samples C1 -C4) two of which were in the playground (Samples C1 and C2). One additional sample was collected from the playground to address bare soil present in the play area (Sample D1). See Attachment 1 for photos of the areas sampled (photos 9 to 11). All twenty-five soil samples were submitted to NYS's Wadsworth Laboratory for flame atomic absorption spectrophotometry analysis using EPA method 7000B. Results from collected soil samples are presented in Table 1.

Table 1: Lead Surface Soil Sampling Results for Temple Park and Adjacent Areas, Wappingers Falls, New York

Sample Number	Sample Location Description	Lead Concentration (ppm)	Notes
A1	Market St. and Dutchess Ter. Intersection next to utility pole (under cable)	288	Directly under cable, outside the playground
A2	Market St. 30 ft from intersection (under cable)	50.6	Directly under cable, outside the playground
A3	Market St. near second utility pole (under cable)	111	Directly under cable, outside the playground
A4	Market St. by park hours sign (under cable)	137	Directly under cable, outside the playground
A5	Market St. by stump (under cable)	88.7	Directly under cable, outside the playground
A6	Market St. by children at play sign (under cable)	113	Directly under cable, outside the playground

Sample Number	Sample Location Description	Lead Concentration (ppm)	Notes
A7	Market St. by pets must be leashed sign (under cable)	410	Directly under cable, outside the playground
A8	Market St. by third utility pole (under cable)	180	Directly under cable, outside the playground
A9	Market St. by fourth utility pole (under cable)	161	Directly under cable, outside the playground
A10	Market St. past fourth utility pole (under cable)	189	Directly under cable, outside the playground
B1	Playground-five feet in from Market St. and Dutchess Ter. intersection	70.0	Bare soil, within playground fence, 5 feet south of cable
B2	Playground- five feet in from Market St. next to swings	68.2	Bare soil, within playground fence, 5 feet south of cable
B3	Playground- five feet in from Market St. next to basketball court	57.5	Bare soil, within playground fence, 5 feet south of cable
B4	Five feet in from Market St. in line with children at play sign	185	5 feet south of cable
B5	Five feet in from Market St. in line with third utility pole	224	5 feet south of cable
B6	Five feet in from Market St. in line with fourth utility pole	248	5 feet south of cable
C1	Playground- center between all three play structures	59.0	Bare soil, within playground fence, 10 feet south of cable
C2	Playground- center towards basketball court	72.0	Bare soil, within playground fence, 10 feet south of cable
C3	Ten feet in from Market St. in line with pets must be leashed sign	109	10 feet south of cable
C4	Ten feet in from Market St. between third and fourth utility pole	283	10 feet south of cable
D1	Playground- back towards wooded area	81.7	Bare soil, within playground fence
G1	Across Market St. in front of playground	62.4	Background location
G2	Behind Industrial Park sign (under cable)	302	Cable comes to ground level at this location
G3	Center of soccer field	199	Within Temple Park but considered background location

Sample Number	Sample Location Description	Lead Concentration (ppm)	Notes
G4	Wappinger Creek Park next to Highway Department	101	Background location

Figure 1: Location of Temple Park Playground and adjacent areas in Wappingers Falls, New York.

Figure 2: Location and results for 25 soil samples collected at the Temple Park Playground and adjacent areas in Wappingers Falls, New York.

Results, Conclusions, and Recommendations:

Twenty-five soil samples were taken at Temple Park, lead soil levels ranged from 50.6 to 410 parts per million (ppm). Of those, twelve soil samples were taken from within Temple Park play areas (orange B1-B6, yellow C1-C4, blue D1, and green G3) that range from 58 to 283 ppm, which are all below the NYSDEC Restricted Residential Soil Cleanup Objective, applicable for active recreation, and HUD/EPA soil guidance value for children's play areas of 400 ppm (NYS Department of Environmental Conservation, 2006; USEPA, 2020). The G3 sample is from the soccer field and is considered a background sample due to its distance from any overhead cables. The six soil samples closest to the actual playscape on the map (orange B1-B3, yellow C1-C2 and blue D1) ranged from 58 to 82 ppm, again below 400 ppm. The ten soil samples directly under the cable (red A1-A10) ranged from 51 to 410 ppm; these samples are along the roadway and outside of play areas so therefore more appropriately compared to the HUD/EPA general soil guidance value of 1200 ppm (USEPA, 2020). The sample across Market Street (G2) located near the lead sheathed cable that comes down to ground level had a value of 302 ppm. While this sample may be influenced by lead from the cable it is also close to the road (a common source of lead) and therefore it is not possible to clearly identify the source. Background samples (green G1-G2) along Market Street across from the park and down by the Highway Department ranged from 62 to 101 ppm. Overall, there was not a clear gradation of elevated lead underneath the cable and decreasing away from this line (red to orange (5 feet from line) to yellow (10 feet from line), but the data are limited.

These results do not suggest a significant exposure potential or public health risk in children's play areas at Temple Park, therefore NYSDOH recommends that the park be reopened. The Village of Wappingers Falls should re-grass any spots of bare soil and continue to monitor the sufficiency of buffer materials (wood chips) and surficial grass at the playground in the future.

References

NYS Department of Environmental Conservation (2006, December 14). Division of Environmental Remediation. 6 NYCRR 375-6.8 https://www.dec.ny.gov/docs/remediation_hudson_pdf/part375.pdf

U.S. Environmental Protection Agency (2020, August) Lead in Soil. https://www.epa.gov/sites/default/files/2020-10/documents/lead-in-soil-aug2020.pdf

U.S. Environmental Protection Agency (2023, June 5). https://www.epa.gov/superfund/lead-superfund-sites-human-health#environment

Pulliam, S., Ramachandran, S., West, J., Jones, C., & Gryta, T. (2023, July 9). America is wrapped in miles of toxic lead cables. *Wall Street Journal*.

Attachment 1: Photolog

Photo 1: Soccer field on Market Street

Photo 2: Park under cable line facing Dutchess Terrace

Photo 3: Flags under cable along Market Street facing Dutchess Terrace

Photo 4: Closer view of flags under cable along Market Street facing Dutchess Terrace

Photo 5: Looking down on set of three flags

Photo 6: Area around Children at Play sign

Photo 7: Flags under cable along Dutchess Terrace next to playground

Photo 8: Utility pole identifiers

Photo 9: Playground

Photo 10: Bare soil in playground area

Photo 11: Wood chip coverage under swings

Photo 12: Hanging cable covers along Dutchess Terrace