

May 24, 2023

982904

Angel Camacho  
SET Environmental  
450 Sumac Road  
Wheeling, Illinois 60090

RE: Thorium Monitoring – City of Chicago Department of Transportation (CDOT)  
CDOT Permits: 96175 / B-0-417 270-411 E. Ontario St.  
96175 / B-0-417 255-360 E. Grand Ave.

Dear Mr. Camacho:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during construction, removal, and replacement of existing street lighting at 270-411 E. Ontario St. and 255-360 E. Grand Ave. The monitoring was performed by Glenn Huber and Brian Schmidt, SAHCI Health Physics Technicians, from May 10, 2023, through May 22, 2023. All activities were conducted under the guidance of the document *SET General Procedure for Thorium Monitoring*.

### Instrumentation

Surface gamma scans were performed using the following instruments:

- Ludlum Model 2221 Survey Meter (serial no. 126496) with attached Ludlum Model 44-10 2"x2" NaI Detector (w/ 6" collimated lead shield). The instrument was calibrated on May 9, 2023. The US Environmental Protection Agency (USEPA) action level of 7.1 picocuries per gram (pCi/g) total thorium is 5,986 counts per minute (cpm).
- Ludlum Model 2221 Survey Meter (serial no. 134542) with attached Ludlum Model 44-10 2"x2" NaI Detector (w/ 6" collimated lead shield). The instrument was calibrated on May 9, 2023. The US Environmental Protection Agency (USEPA) action level of 7.1 pCi/g total thorium is 6,552 cpm.

The background count rate for these locations averaged 1,775 cpm.

### Soil Gamma Scans

Concrete removal for most planned excavation locations took place prior to the start of scheduled monitoring. On May 10, 2023, SAHCI was called by Heidi Keller, City of Chicago Department of Assets, Information, and Services (AIS), to immediately perform

surveys where concrete had been removed. Brian Schmidt performed surface scans at each location where concrete was removed, but concrete surface scans were not able to be performed as noted by "Not Surveyed, N/S" on the Radiation Survey Forms. The initial survey depth at these locations is 6 inches below ground surface.

Gamma surface scans were then performed using the Ludlum Model 2221 Scaler / Ratemeters described above. Survey data was collected by entering the excavations and recording the highest count rate for the floor and walls to a maximum depth of 24 inches below ground surface.

The maximum gamma count rates for each lift were recorded on the attached Radiation Survey Forms. The count rates in the excavations ranged from 1,500 cpm to 4,200 cpm. No count rates were found at any time that exceeded the threshold limits of 5,986 cpm and 6,552 cpm, respectively.

#### Additional Monitoring

Since no count rates were identified above the 7.1 pCi/gram threshold limit, no additional soil sampling, air monitoring, or personnel monitoring were performed.

I will be providing a copy of this report to both the City of Chicago Department of Public Health and US Environmental Protection Agency, as required.

Thank you for your assistance with this project. If you have any questions or need additional information, please call me at (815) 485-6161.

Sincerely,  
Stan A. Huber Consultants, Inc.



Glenn Huber, CHP  
President

### Radiation Survey Form

Location/ Project ID: CDOT - ALONGSIDE - DIRECTIONAL BORING + LIGHT POLE INSTALLATION - ROW RADIOLOGICAL SOIL SURVEY

Date: 5/10 - 22/2023

Technician: Brian Somniot

Inst Model: Wolowin - 2221

Serial No.: 126496

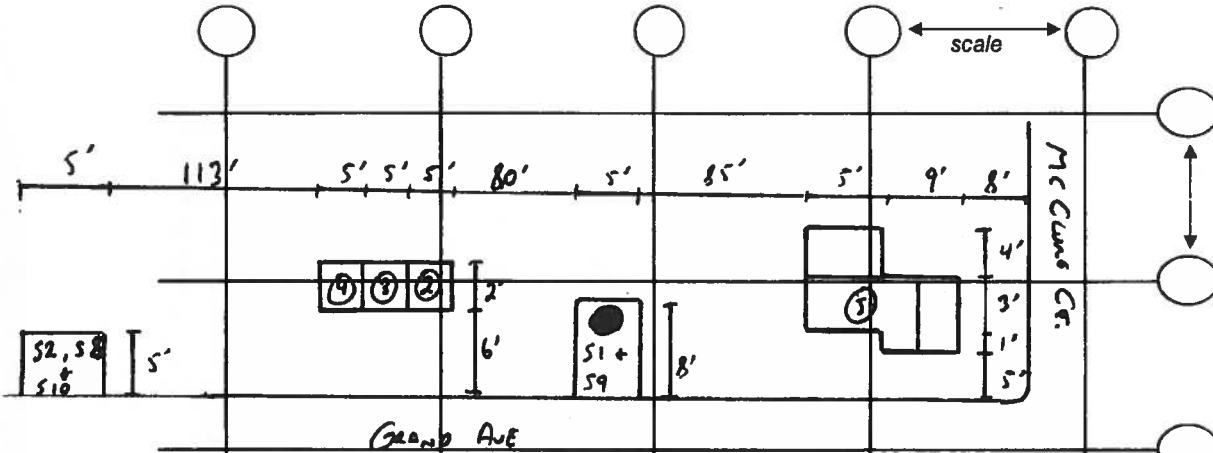
Probe Type: 1"x1" NaI / 2"x2" NaI  
Shielded / Not Shielded

Lift Elevation: 0-24"

Background 1742 cpm

Action Level: 5926 cpm

Write grid designations in circles. Record highest counts for grid in cpm. Record 30 second counts at grid intersections (if required). Shade areas of elevated counts and record max cpm.



Spot	Survey (Max Value)	Excavation ID	Depth	CPM
S1	2100 cpm (5/16)	②	0-6"	1600
S2	1600 cpm (5/16)		6-24"	1900
			24-42"	2400
S8	1900 cpm (5/18)	③	0-6"	1800
S9	1700 cpm (5/22)		6-24"	2100
			24-42"	2300
S10	2000 cpm (5/22)	④	0-6"	1500
			6-24"	2100
			24-42"	2000
		⑤	0-6"	N/S
			6-24"	2200
			24-42"	2300

### Radiation Survey Form

Location/ Project ID: COOR - ALDOLGEE - DIACRYLATE BORING & LIGHT POLE INSTALLATION - ROW RADIOLOGICAL SOIL SURVEY

Date: 5/10-22/2023

Technician: Brian Scumios / Glenn Huber

Inst Model: Walum-2221

Serial No.: 126496 / 134542

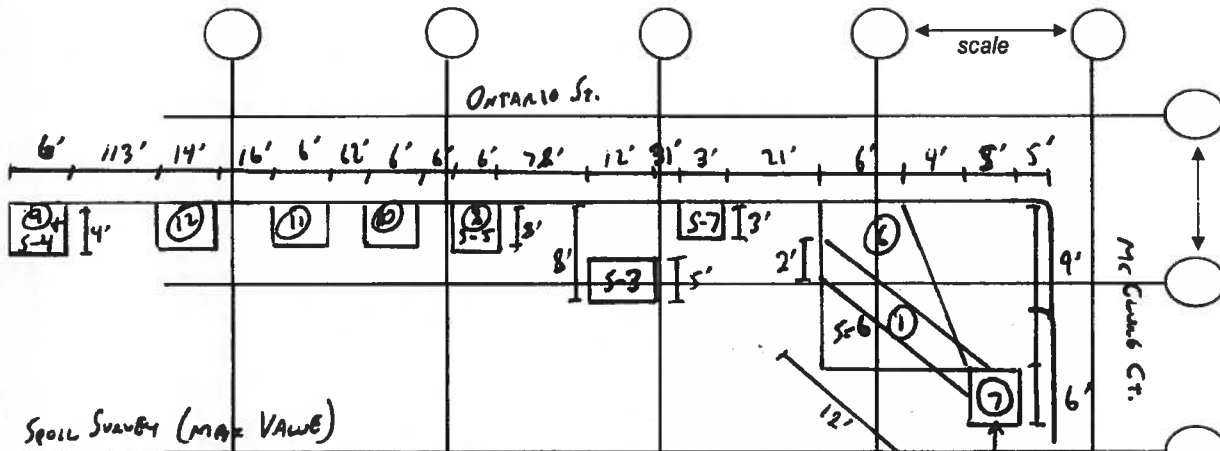
Probe Type: 1"x1" NaI / 2"x2" NaI  
Shielded / Not Shielded

Lift Elevation: 0-24"

Background 1742/1808cpm

Action Level: 5986/6552cpm

Write grid designations in circles. Record highest counts for grid in cpm. Record 30 second counts at grid intersections (if required). Shade areas of elevated counts and record max cpm.



**Soil Survey (MAX VALUE)**

Grid	Depth	CPM	Excavation ID	Depth	CPM
S-3	0-6"	2500 cpm (5/16)	①	0-6"	N/S
S-4	6-24"	2200 cpm (5/16)		6-24"	2500
S-5	24-42"	3500 cpm (5/16)		24-42"	2900
S-6	0-6"	2400 cpm (5/16)	⑥	0-6"	N/S
S-7	6-24"	2900 cpm (5/16)		6-24"	2500
				6-24"	1600

ID	Depth	CPM	Survey	Depth	CPM
S-3	0-6"	N/S	G. Huber 5/15/23	6-24"	2700
	6-24"	2700		24-42"	3200
	24-42"	3200			
S-4	0-6"	N/S		6-24"	2200
	6-24"	2200		24-42"	3100
	24-42"	3100			
S-5	0-6"	N/S		6-24"	2400
	6-24"	2400		24-42"	4200
	24-42"	4200			
S-6	0-6"	N/S		6-24"	2000
	6-24"	2000		24-42"	2800
	24-42"	2800			
S-7	0-6"	N/S		6-24"	1900
	6-24"	1900			