



November 2, 2021

Marc Munroe
3 Phase Line Construction
300 Westgate Dr.
Carol Stream, IL 60188

RE: Thorium Monitoring 219-245 E. Ontario St.
CDOT Permit #1593280

Dear Mr. Munroe:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during the excavation for installation of a utility conduit and pole at 219-245 E. Ontario Street in Chicago, Illinois. The monitoring of the utility trench excavation was performed October 12 – October 15, 2021, Aaron Morris, RSSI Health Physicist.

Instrumentation

Surface gamma scans were performed using a Ludlum Model 193 Survey Meter (serial no. 149073) with attached Ludlum Model 44-10 2"x2" NaI Detectors (unshielded). The efficiency for thorium was determined at calibration to be 740 counts per minute (cpm) per picocuries per gram (pCi/g).

The average background count rate for this location ranged from 2,200 cpm.

Soil Gamma Scans

Gamma surface scans of the utility trench were performed using the Ludlum Model 193 Survey Meter described above. Survey data was collected for the utility trench by entering the excavation and recording the highest count rate for the floor and walls to a maximum excavation depth of 3 feet below ground surface. All asphalt, concrete, and soil were loaded directly into a truck for disposal.

Survey data for the utility pole was collected by lowering the detector into the boring at each 1-foot depth, to a maximum depth of 8 feet, 9 inches.

The maximum gamma count rate for each lift was recorded on the attached Radiation Survey Form. The gross count rates in the excavations ranged from 1,800 cpm to 6,000 cpm. The elevated count rates are likely due to the fact that an unshielded detector was used. All calculated thorium concentrations were below the US Environmental Protection Agency (USEPA) threshold limit of 7.1 pCi/g total thorium.

Additional Monitoring

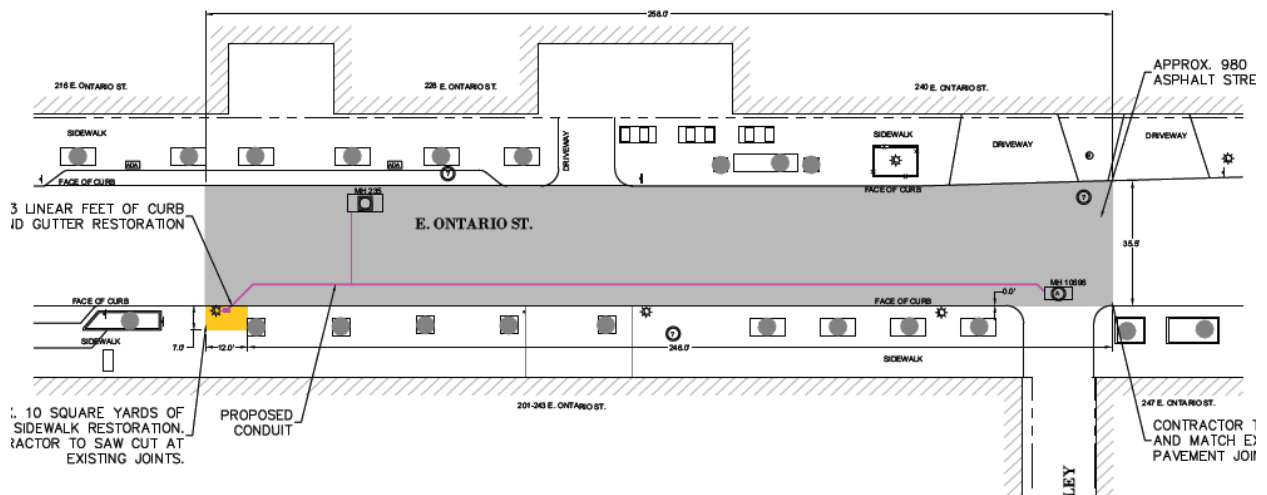
Since no count rates were identified above the 7.1 pCi/gram threshold limit, no additional soil sampling, air monitoring, or personnel monitoring were performed.

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



Date	Background [cpm]	Measurement [gross cpm]	Net CPM	pCi/g	Trench Section	Depth	Notes
10/12/2021	2200		0	0.0			No digging
10/13/2021	2200	3200	1000	1.4	1	Subslab	
10/13/2021	2200	3400	1200	1.6	1 (curb)	18"	
10/13/2021	2200	2400	200	0.3	2	Subslab	
10/13/2021	2200	5200	3000	4.1	1	18"	Brick fragments
10/13/2021	2200	2400	200	0.3	3	Subslab	
10/13/2021	2200	2800	600	0.8	4	Subslab	
10/13/2021	2200	3800	1600	2.2	3/4	18"	
10/13/2021	2200	2800	600	0.8	5	Subslab	
10/13/2021	2200	3800	1600	2.2	5	18"	
10/13/2021	2200	2600	400	0.5	N-S Cut	Subslab	Sand
10/13/2021	2200	2800	600	0.8	N-S Cut	18"	Sand
10/13/2021	2200	2400	200	0.3	6 & 7	Subslab	
10/13/2021	2200	4000	1800	2.4	6	18"	
10/13/2021	2200	3400	1200	1.6	7	18"	
10/13/2021	2200	2600	400	0.5	8 & 9	Subslab	
10/13/2021	2200	3600	1400	1.9	8	18"	
10/13/2021	2200	2800	600	0.8	10	Subslab	
10/13/2021	2200	3200	1000	1.4	11 & 12	Subslab	Section 12 ends by sewer at 233 Ontario
10/13/2021	2200	3200	1000	1.4	13	Subslab	
10/13/2021	2200	3200	1000	1.4	Through lightpole	Subslab	At corner of "aloft"
10/13/2021	2200	4400	2200	3.0	9-10	18"	
10/13/2021	2200	5400	3200	4.3	11	18"	
10/13/2021	2200	3800	1600	2.2	12	18"	
10/13/2021	2200	5000	2800	3.8	13	18"	
10/13/2021	2200	4000	1800	2.4	Through tree	18"	Approximately halfway to lightpole
10/13/2021	2200	2800	600	0.8	Pole to sign	Subslab	
10/13/2021	2200	4800	2600	3.5	Tree to light	18"	
10/13/2021	2200	5200	3000	4.1	Light to sign	18"	
10/14/2021	2000	1800	0	0.0	Slant	Subslab	Sand (8')

10/14/2021	2000	2200	200	0.3	Slant	18"	Sand
10/14/2021	2000	2800	800	1.1	Slant	36"	Sand
10/14/2021	2000	2000	0	0.0	W1	Subslab	Sand, slant to curb bend (4')
10/14/2021	2000	3400	1400	1.9	W2	Subslab	Dirt, curb bend to sign (7')
10/14/2021	2000	3000	1000	1.4	W1	18"	Sand
10/14/2021	2000	5200	3200	4.3	W2	18"	Dirt
10/14/2021	2000	3600	1600	2.2	Sign to tree 1	Subslab	20'
10/14/2021	2000	6000	4000	5.4	Sign to tree 1	18"	Mixed material
10/14/2021	2000	3400	1400	1.9	Tree 1 to tree 2	Subslab	20'
10/14/2021	2000	3200	1200	1.6	Tree 2 to halfway to tree 3	Subslab	The "aloft" patio, 10'
10/14/2021	2000	5400	3400	4.6	Tree 2 to halfway to tree 3	18"	
10/14/2021	2000	3600	1600	2.2	Halfway to tree 3 to tree 3	Subslab	10'
10/14/2021	2000	2800	800	1.1	Tree 3 to halfway to pole	Subslab	10'
10/14/2021	2000	5200	3200	4.3	Halfway to tree 3 to tree 3	18"	
10/14/2021	2000	3600	1600	2.2	Tree 3 to halfway to pole	18"	10'
10/14/2021	2000	3400	1400	1.9	Halfway to pole to end	Subslab	16'
10/14/2021	2000	4200	2200	3.0	Halfway to pole to end	18"	
10/14/2021	2000	3600	1600	2.2	Hole	Bottom	8'9" to bottom
10/14/2021	2000	3600	1600	2.2	Hole	~8'	
10/14/2021	2000	3600	1600	2.2	Hole	~7'	
10/14/2021	2000	4000	2000	2.7	Hole	~6'	
10/14/2021	2000	4000	2000	2.7	Hole	~5'	
10/14/2021	2000	4000	2000	2.7	Hole	~4'	
10/14/2021	2000	4000	2000	2.7	Hole	~3'	
10/14/2021	2000	4000	2000	2.7	Hole	~2'	
10/14/2021	2000	3600	1600	2.2	Hole	~1' (~Subslab)	
10/15/2021	2000	2400	400	0.5	Sidewalk around light	Subslab	
10/15/2021	2000	2600	600	0.8	N street cut	Subslab	Sand
10/15/2021	2000	2600	600	0.8	N street cut	18"	Sand