



November 22, 2021

Angel Camacho  
SET Environmental  
450 Sumac Road  
Wheeling, Illinois 60090

RE: Thorium Monitoring – City of Chicago Department of Water Management  
CDOT Permits: 1608374 & 1608382– 121 & 139 E. Ontario St.

Dear Mr. Camacho:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during the excavation for repair of a Chicago Department of Water Management sewer main in the alley at 121 and 139 E. Ontario St. in Chicago, Illinois. The monitoring was performed by Brian Schmidt, SAHCI Health Physics Technician, on November 9 – November 12, 2021. All activities were conducted under the guidance of document *SET General Procedure for Thorium Monitoring*.

#### Instrumentation

Surface gamma scans were performed using a Ludlum Model 2221 Scaler / Ratemeter (serial no. 134542) with attached Ludlum Model 44-10 2"x2" NaI Detector (w/ 6" collimated lead shield). The instrument was calibrated on May 5, 2021. The US Environmental Protection Agency (USEPA) action level of 7.1 picocuries per gram (pCi/g) total thorium for this instrument is 7,396 counts per minute (cpm).

The average background count rate for these locations was measured at 1,827 cpm.

#### Soil Gamma Scans

Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeter described above. Survey data was collected by entering the excavation and recording the highest count rate for the floor and walls to a depth of 42 inches below ground surface. Material excavated below 42 inches, to a maximum depth of 96 inches, was monitored in the excavator bucket as it was removed. All asphalt, concrete, and soil were loaded directly into a truck for disposal.

The maximum gamma count rate for each lift was recorded on the attached Radiation Survey Form. The count rates in the excavations ranged from 1,900 cpm to 3,500 cpm. No count rates were found at any time that exceeded the threshold limit of 7,396 cpm.

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: DUM-10 E. Ontario St. - Sewer Main & Manhole Repair

Date: 11/9-12/2021

Technician: Brian Schmidt

Inst Model: LWALUM-2221

Serial No.: 134542

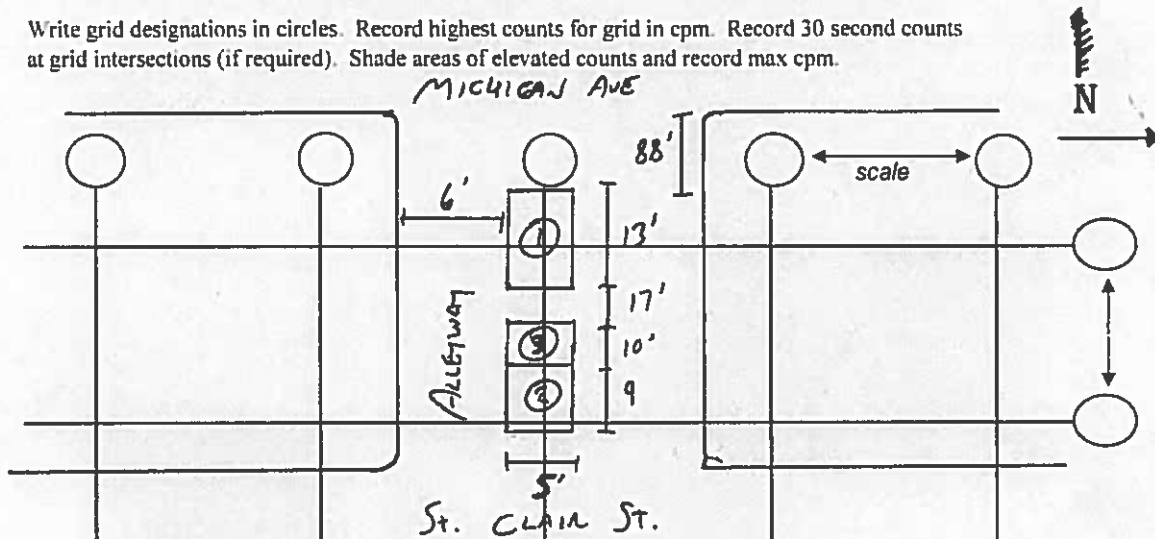
Probe Type: 1"x1" NaI / 2"x2" NaI  
Shielded / Not Shielded

Lift Elevation: 0-96"

Background 1827 cpm

Action Level: 7,396 GAH  
6758 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.



Excavation ID	DEPTH	CPM	Excavation ID	DEPTH	CPM
①	0-6"	1900	③	0-6"	2000
	6-24"	3000		6-24"	2800
	24-42"	3300		24-42"	3200
	42-60"	3400		42-60"	3500
②	60-78"	3100		60-78"	2900
	78-96"	2400		78-96"	2600
	96-114"	2200		96-114"	2200
	0-6"	2200			
	6-24"	3200			
	24-42"	3100			
	42-60"	3300			
	60-78"	2400			
	78-96"	2300			
	96-114"	2100			