



November 2, 2022

978346

Angel Camacho
SET Environmental
450 Sumac Road
Wheeling, Illinois 60090

RE: Thorium Monitoring – City of Chicago Department of Water Management
CDOT Permit: 1749415 605 N. Michigan Ave.

Dear Mr. Camacho:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during an emergency excavation for repair of a Chicago Department of Water Management (DWM) hydrant control valve basin at 605 N. Michigan Avenue in Chicago, Illinois. The monitoring was performed by Brian Schmidt and Mark Dewald, SAHCI Health Physics Technicians, on October 21 and October 24, 2022. All activities were conducted under the guidance of document *SET General Procedure for Thorium Monitoring*.

Instrumentation

Surface gamma scans were performed using Ludlum Model 2221 Scaler / Ratemeters (serial nos. 99147 and 126496) with attached Ludlum Model 44-10 2"x2" NaI Detectors (w/ 6" collimated lead shields). The instrument were calibrated on May 3, 2022. The US Environmental Protection Agency (USEPA) action level of 7.1 picocuries per gram (pCi/g) total thorium for instrument 99147 is 6,936 counts per minute (cpm) and 7,819 cpm for instrument 126496.

The average background count rate for this location was measured at 1,805 cpm.

Soil Gamma Scans

Excavation started on the repair on October 21, 2022, prior to Brian Schmidt arriving at the site at 1:30pm since it was an emergency. Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeters described above on the already excavated area. The maximum count rate observed in the excavation was 2400 cpm. Since the excavated material had already been loaded into a truck, Brian Schmidt went to the DWM yard at 39th Street and Ashland Avenue to scan the material after it had been removed from the truck. The maximum count rate observed on the excavated material was 2800 cpm.

On October 24, 2022, additional excavation was performed at this location to complete the repair. Mark Dewald performed surveys and data was collected by entering the excavation and recording the highest count rate for the floor and walls to a depth of 84 inches below ground surface. Any material excavated below 4 feet was surveyed 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 excavation ranged from 2,000 cpm to 3,100 cpm. No count rates were found at any time that exceeded the threshold limits of 6,936 cpm and 7,819 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: 605 N. Michigan Avenue - Hydrant Replacement - DWM

Date: 10/21-24/22

Technician: Mark Dewald, Brian Schmidt

Inst Model: Ludlum 2221

Serial No. : 99147, 126496

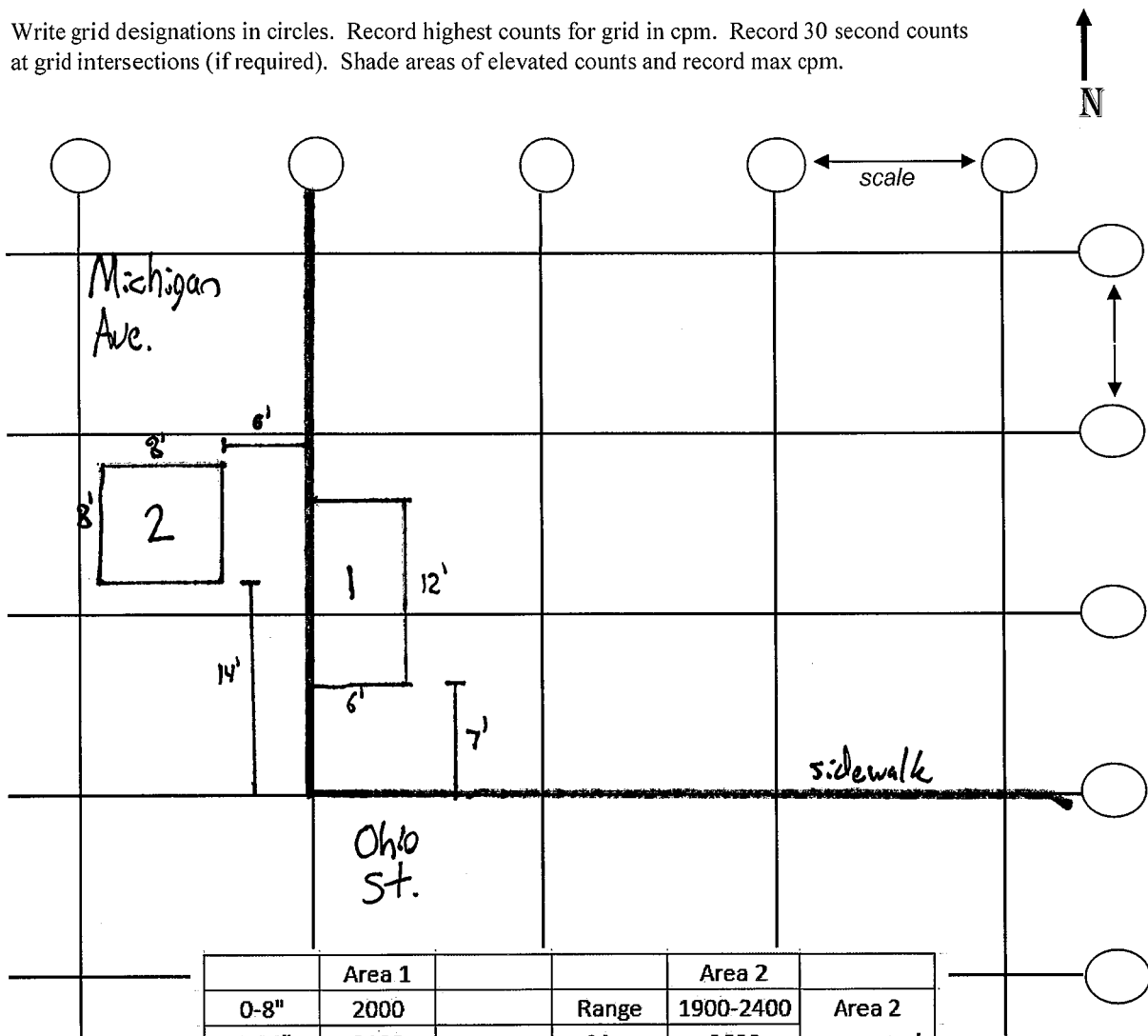
Probe Type: 1"x1" NaI 2"x2" NaI
Shielded / Not Shielded

Lift Elevation: Surface to -84" BGS
(Surface to -48" BGS Area 2)

Background 1,805 cpm

Action Level: 6,936; 7,819 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.



	Area 1		Area 2	
0-8"	2000	Range	1900-2400	Area 2 excavated on 10/21 prior to monitoring being on- site
8-26"	2100	Max	2600	
26-44"	2600			
44-62"	2600		Truck Soil	
62-80"	2900	Max	2800	
80-98"	3100			
84-102"	2600			