



April 2, 2020

Mike Lanenga  
SET Environmental  
450 Sumac Road  
Wheeling, Illinois 60090

RE: 70 E. Lower Wacker Place Thorium Monitoring – City of Chicago Department of  
Water Management  
CDOT Permit: 1216409

Dear Mr. Lanenga:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during the excavation for removal and relocation of a fire hydrant at 70 E. Lower Wacker Place in Chicago, Illinois. The initial monitoring was performed by Glenn Huber, SAHCI Health Physicist, on March 11, 2020 through March 13, 2020. Work was stopped when unexpected utilities were encountered and the project was not completed. Work at this location resumed on March 26, 2020 and was completed on March 27, 2020. This second round of monitoring was performed by Brian Schmidt, SAHCI Health Physics Technician. 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 no. 134542 and 132844) with attached Ludlum Model 44-10 2"x2" NaI detectors (w/ 6" collimated lead shields).

Instrument serial number 134542 (used by Glenn Huber) was calibrated on August 6, 2019. The US Environmental Protection Agency (USEPA) action level of 7.1 picocuries per gram (pCi/g) total thorium for this instrument is 6,124 counts per minute (cpm). The average background count rate at this location for this instrument was determined to be 1,688 cpm.

Instrument serial number 132844 (used by Brian Schmidt) was calibrated on August 6, 2019. The US Environmental Protection Agency (USEPA) action level of 7.1 picocuries per gram (pCi/g) total thorium for this instrument is 7,299 counts per minute (cpm). The average background count rate at this location for this instrument was determined to be 1,751 cpm.

## Soil Gamma Scans

Survey data was collected by entering Excavation #1 after each 18-inch lift and recording the highest count rate for the floors and walls to an excavation depth of 4.5 feet below ground surface. Soil excavated from 4.5 feet to 9 feet below ground surface was screened in the excavator bucket prior to loading. All soil was loaded directly into a truck for disposal.

Excavation #2 took place around the original fire hydrant on the sidewalk which was being removed. This excavation was only 3 foot below ground surface.

Excavation #3 took place 85 feet to the west of the original excavation at the location where the new fire hydrant was being installed. This excavation was 9 feet deep and surveyed in the same manner as Excavation #1

The maximum gamma count rate for each lift was recorded on the attached Radiation Survey Forms. The count rates in the excavation ranged from 1,400 cpm to 3,200 cpm. No count rates were found at any time that exceeded the threshold limits of 6,124 cpm and 7,299 cpm, respectively.

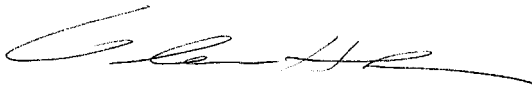
## Additional Monitoring

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:** DWM 70 E. Lower Wacker Place. CDOT Permit #1216409

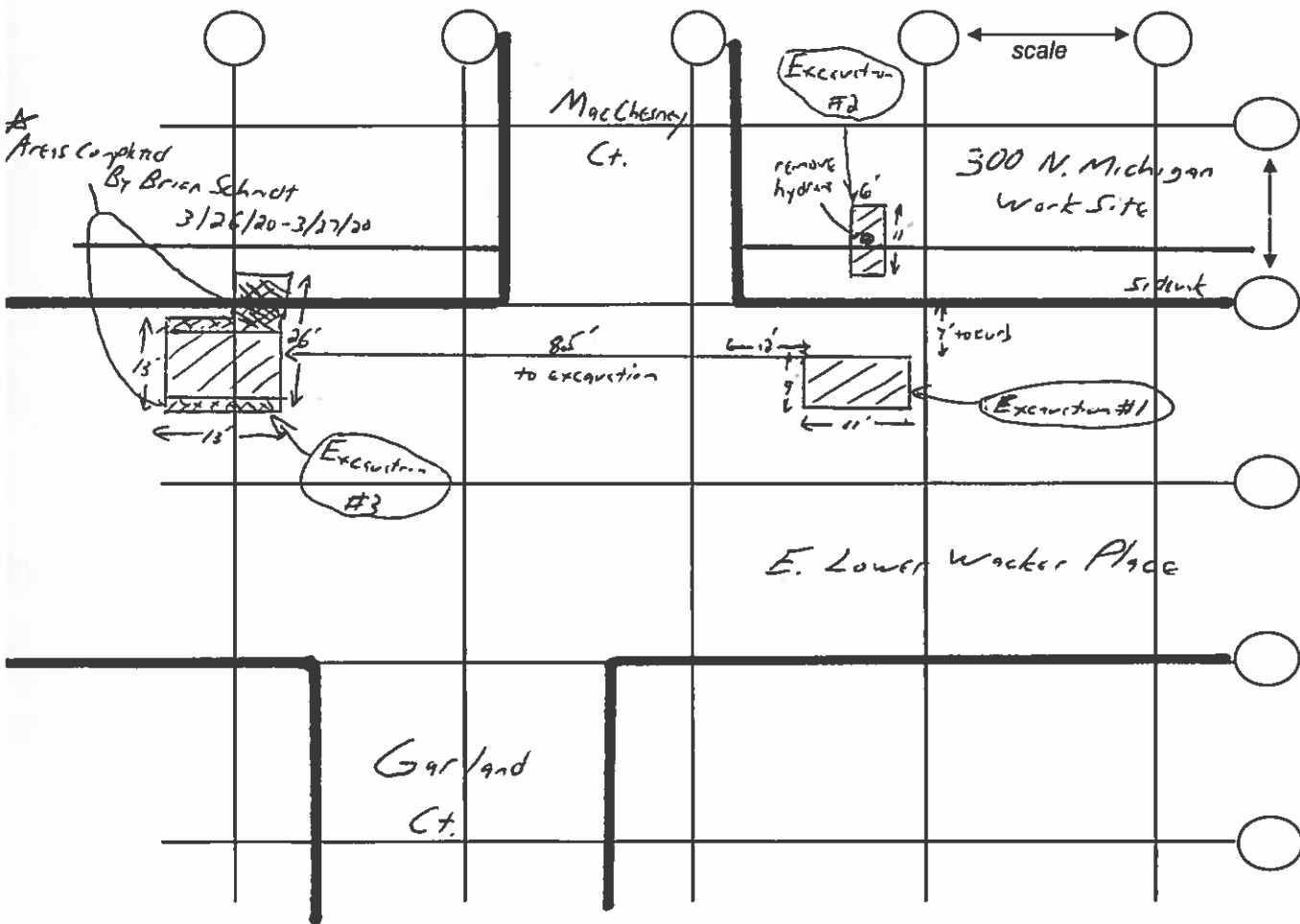
**Date:** 3/11/20 - 3/13/20 **Technician:** Glenn Huber

**Inst Model:** Ludlum 2221 **Serial No.:** 134542

**Probe Type:** 1"x1" NaI / 2"x2" NaI **Lift Elevation:** surface -> -9' bgs  
Shielded / Not Shielded

**Background** 1,688 **cpm** **Action Level:** 6,124 **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 #1**

Depth	cpm
Surface	1400
-1.5'	1900
-3'	2200
-4.5'	2000
-6'	2100
-7.5'	1500
-9'	2000

**Excavation #2**

Depth	cpm
Surface	1600
-1.5'	2000
-3'	2100

**Excavation #3**

Depth	cpm
Surface	1700
-1.5'	3000
-3'	2800
-4.5'	2600
-6'	2500
-7.5'	2500
-9'	2200

### Radiation Survey Form

Location/ Project ID: DWM-300 N. MICHIGAN AVE - FIRE HYDRANT INSTALLATION - ROW RADIOLOGICAL SOIL SURVEY

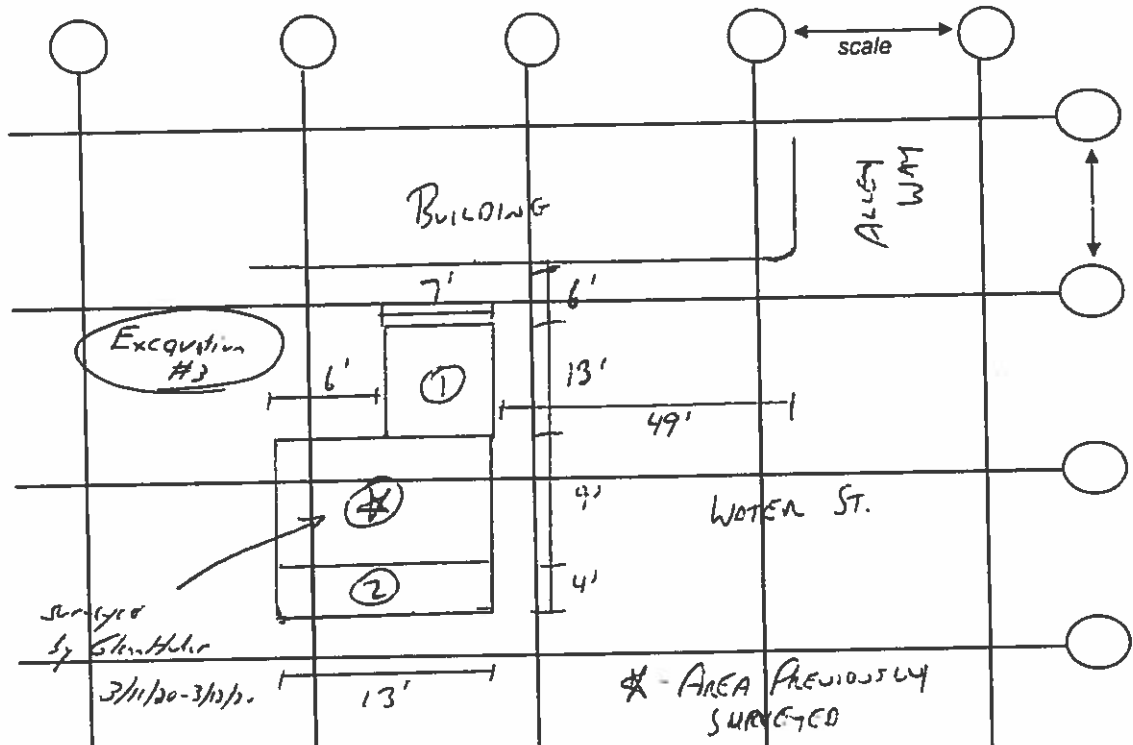
Date: 3/26-27/2020 Technician: BRIAN SCHMIDT

Inst Model: LUDLUM-2221 Serial No.: 132844

Probe Type: 1"x1" NaI / 2"x2" NaI Lift Elevation: 0-102"  
Shielded / Not Shielded

Background 1751 cpm Action Level: 7299 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.



ID	DEPTH	CPM	ID	DEPTH	CPM
①	0-12"	1700	②	0-48"	ALREADY SURVEYED
	12-30"	2100		48-66"	2900
	30-48"	2000		66-84"	2400
	48-66"	2500		84-102"	2500
	66-84"	2900		102-120"	2700
	84-102"	3200			