



August 6, 2019

949424

Mike Lanenga
SET Environmental
450 Sumac Road
Wheeling, Illinois 60090

RE: 435 Chicago Riverwalk Thorium Monitoring
CDOT Permit: 2019-8672

Dear Mr. Lanenga:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during the performance of 3 soil borings at 435 Chicago Riverwalk in Chicago, Illinois. The monitoring was performed by John Hummel on July 29, 2019. 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. 126497) with attached Ludlum Model 44-10 2"x2" NaI Detector (w/ 6" collimated lead shield). The instrument was calibrated on October 15, 2018. The US Environmental Protection Agency (USEPA) action level of 7.1 picocuries per gram (pCi/g) total thorium for this instrument is 6,319 counts per minute (cpm).

The average background count rate for this location was measured as 2,299 cpm.

Soil Gamma Scans

Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeter described above. Survey data was collected by scanning each 1.5-foot boring sample interval and recording the count rate to a maximum boring depth of 35.5 feet below ground surface. Additionally, all spoils generated during the installation of the borings were scanned.

The maximum gamma count rate for each boring sample interval was recorded on the attached Radiation Survey Form. The count rates of the boring samples ranged from 1,402 cpm to 3,342 cpm. No count rates were found at any time that exceeded the threshold limit of 6,319 cpm.

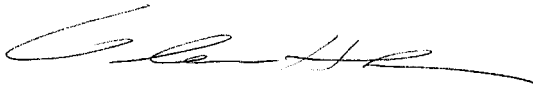
Additional Monitoring

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.

A handwritten signature in black ink, appearing to read 'G. Huber', with a long horizontal flourish extending to the right.

Glenn Huber, CHP
President

Radiation Survey Form

Location/ Project ID: ⁴³⁵~~355~~ Chicago Riverwalk - Soil Borings
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Date: 7/29/19

Technician: John Hummel (RSSI)

Inst Model: Ludlum 2221

Serial No. : 126497

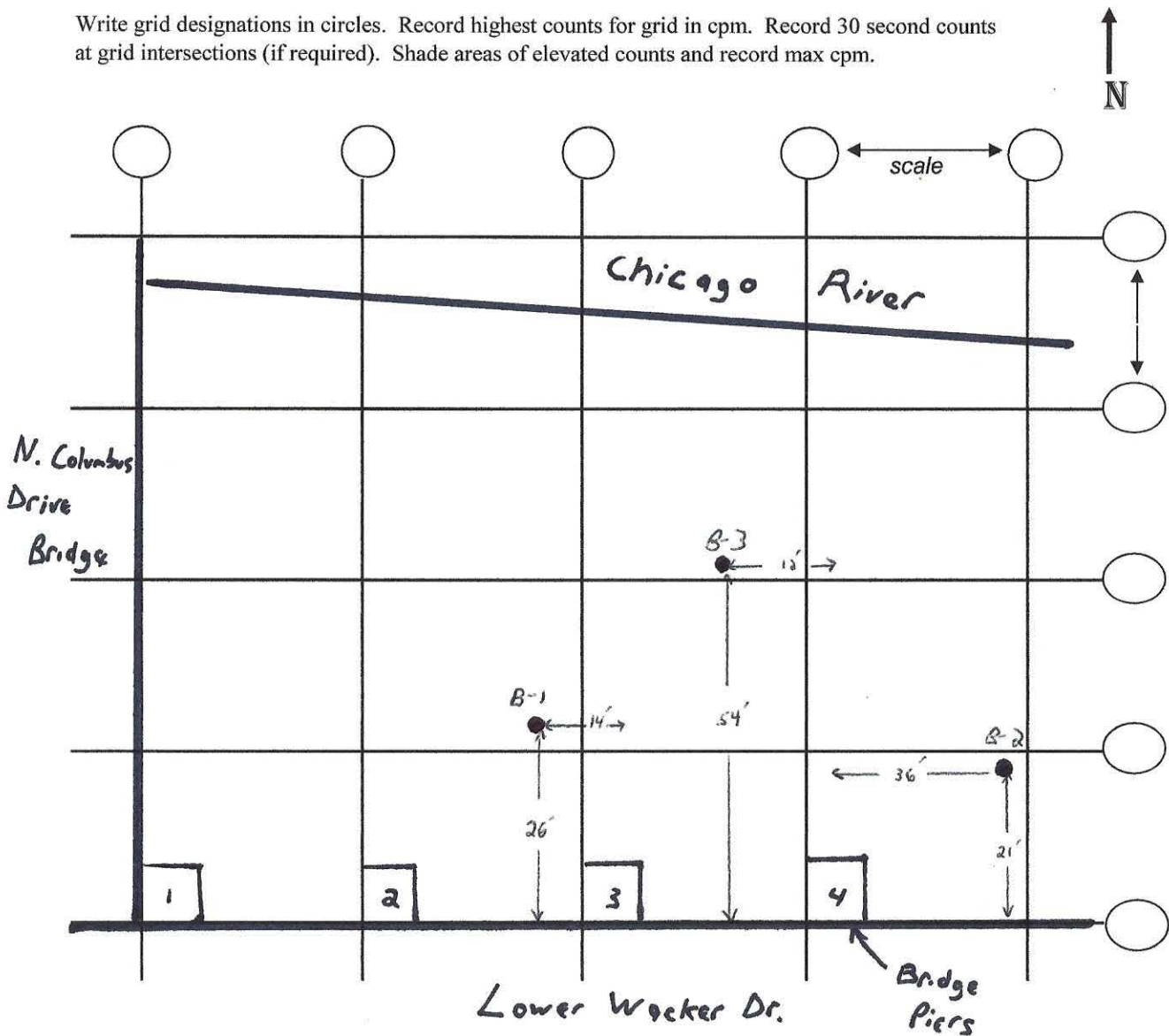
Probe Type: 1"x1" NaI / 2"x2" NaI
Shielded / Not Shielded

Lift Elevation: boring surface to -35.5'

Background 2,299 cpm

Action Level: 6,319 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.



Radiation Survey Form - Data

Location / Project ID:	Chicago Riverwalk -IPH Soil Borings
HP Technician:	John Hummel
Date:	7/29/2019
Instrument ID:	Ludlum Model 2221 Scaler/Ratemeter (serial #126497) w/ Ludlum Model 44-10 2" NaI Detector (w/ 6" shield)
7.1 pCi/g Action Level:	6,319 cpm

Boring B-1	
Depth	CPM
1'-2.5'	1661
3.5'-5'	1871
6'-7.5'	1815
8.5'-10'	1937
11'-12.5'	1663
13.5'-15'	1956
<u>Spoils</u>	
0'-6'	2586
6'-11'	2543
11'-20'	2771
After Drill Removed	2356

Boring B-3	
Depth	CPM
1'-2.5'	1673
3.5'-5'	1995
6'-7.5'	1595
8.5'-10'	1791
11'-12.5'	1902
13.5'-15'	1775
<u>Spoils</u>	
0'-6'	2283
6'-11'	2896
11'-20'	2332
After Drill Removed	2163

Boring B-2	
Depth	CPM
1'-2.5'	1615
3.5'-5'	1537
6'-7.5'	1957
8.5'-10'	1930
11'-12.5'	2114
13.5'-15'	1792
18.5'-20'	1402
23.5'-25'	2066
28.5'-30.5'	1583
33.5'-35.5'	1941
<u>Spoils</u>	
0'-6'	2730
6'-11'	3342
11'-20'	2197
20'-35'	2544
After Drill Removed	2708