



November 18, 2017 (REVISED 11/22/17 GAH)

Mike Lanenga
SET Environmental
450 Sumac Road
Wheeling, Illinois 60090

RE: 305-435 E. Riverwalk South Thorium Monitoring – City of Chicago Department of Fleet and Facility Management Fence Installation

Dear Mr. Lanenga:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during the installation of a fence for the City of Chicago Department of Fleet and Facility Management (2FM) located at 305-435 E. Riverwalk South in Chicago, Illinois. The monitoring was performed by Justin Maxwell and Glenn Huber, SAHCI Health Physicists, on October 30, 2017 through November 13, 2017. 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 / Ratemeters (serial no. 126497 and 127242) with attached Ludlum Model 44-10 2"x2" NaI detectors (w/ 6" collimated lead shields).

Serial number 126497 was calibrated on October 11, 2017. The USEPA action level of 7.1 picocuries per gram (pCi/g) total thorium for this instrument is 6,542 counts per minute (cpm). The average background count rate for this instrument at this location was determined to be 1,942 cpm.

Serial number 127242 was calibrated on August 9, 2017. The USEPA action level of 7.1 picocuries per gram (pCi/g) total thorium for this instrument is 7,043 counts per minute (cpm). The average background count rate for this instrument at this location was determined to be 1,993 cpm.

Soil Gamma Scans

Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeters described above. An existing fence was at this location that needed to be removed prior to installing the new one. 43 of the 90 existing fence posts were removed

and post holes were surveyed. The remaining posts were cut off at the ground surface and left in place. Page 1 of the attached Radiation Survey Form details the maximum gamma count rate for the soil removed during post removal and the inside of the existing post holes.

The new fence construction consisted of the installation of 94 new fence posts. The new post holes were surveyed in 18" lifts as they were excavated, to a maximum depth of 3 feet below ground surface. Page 2 of the attached Radiation Survey Form, details the maximum gamma count rate for each lift recorded during excavation of the new fence post holes.

The count rates in the excavation ranged from 1,800 cpm to 6,100 cpm. No count rates were found at any time that exceeded the threshold limits of 6,542 cpm and 7,043 cpm.

There were elevated count rates exceeding twice the background count rate, but this is due to the poor survey geometry of surveying inside of such a narrow hole.

Additional Monitoring

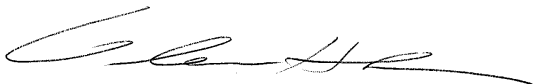
Since no count rates were identified above the 7.1 pCi/gram threshold limit, no additional soil sampling, air monitoring, or personnel monitoring were performed.

Regulatory Notification of Survey Completion

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 - Old Fence Post Removal

305-435 E. Riverwalk South Thorium Monitoring

10/30/17 - 11/13/17

Post Number	Max kcpm
1	5.3
2	3.8
3	5.3
4	2.8
5	3.2
6	5.6
7	3.8
8	2.8
9	5.8
10	5.2
11	-
12	-
13	-
14	-
15	-
16	-
17	2.7
18	-
19	-
20	-
21	3.2
22	2.5
23	-
24	1.9
25	3
26	-
27	-
28	-
29	3.2
30	-

Post Number	Max kcpm
31	-
32	3.9
33	-
34	4
35	4.1
36	3.7
37	-
38	4.2
39	-
40	-
41	4.2
42	3.8
43	-
44	3.7
45	-
46	3.7
47	3
48	3.5
49	-
50	3.2
51	3.7
52	2.5
53	-
54	-
55	-
56	-
57	-
58	-
59	3.5
60	3.2

Post Number	Max kcpm
61	-
62	2.6
63	2.5
64	3.2
65	-
66	-
67	-
68	-
69	-
70	-
71	-
72	-
73	-
74	-
75	-
76	-
77	-
78	-
79	-
80	-
81	1.9
82	2.4
83	2.3
84	1.9
85	-
86	-
87	3
88	2.6
89	2.7
90	2.5

" -" represents posts that were broken or cut at ground surface = no excavation at these locations

Radiation Survey Form - New Fence Post Installation

305-435 E. Riverwalk South Thorium Monitoring

10/30/17 - 11/13/17

Post Number	Surface kcpm	1.5' kcpm	3.0' kcpm
1	2	4.2	4.6
2	1.9	3.2	3.5
3	1.9	4.6	5.1
4	2	4.4	6.1
5	1.8	5.8	6
6	1.9	4.6	5.6
7	1.9	4.8	5.8
8	1.9	5.6	6.1
9	2	4.5	5.3
10	2	3.1	3.3
11	1.8	5.2	5.8
12	1.9	5.4	5.8
13	1.8	5.2	5.7
14	1.8	4.6	4.7
15	1.9	4.6	5.4
16	2	4.7	5
17	2	3	3.4
18	2	5.1	5.9
19	2	3.7	5.2
20	1.9	4	4.4
21	1.9	3.6	4.5
22	1.8	3.4	5.1
23	1.9	3.6	4
24	1.8	3.1	4
25	1.8	2.8	3.4
26	1.9	3	3.9
27	2	3	3.2
28	1.9	3.4	4.1
29	1.9	3.4	4.7
30	1.9	3	4.2
31	1.8	3.1	3.7
32	1.9	3.7	4.5
33	2	3.7	3.7
34	2	3.4	4.1
35	2	3.5	4.6
36	2.1	3.9	4.3
37	1.9	4.1	4.6
38	1.9	3.7	4.8
39	1.8	4	4.7
40	1.9	4.2	4.9

Post Number	Surface kcpm	1.5' kcpm	3.0' kcpm
41	1.8	4	4.2
42	1.9	4	4.3
43	2	3.6	3.9
44	1.9	4.1	4.8
45	2	4	5
46	2	3.5	4
47	2	3.7	4.3
48	1.9	3.7	4.1
49	1.8	3.7	4.7
50	1.8	3.7	4.5
51	1.9	3.8	4.5
52	2.1	4.1	4.6
53	2.1	3.3	3.8
54	2	3	3.7
55	1.9	3.5	3.7
56	1.8	2.8	3.4
57	1.8	3.3	4.2
58	1.9	3.5	4.5
59	2.1	3.3	4.6
60	2	3	4.3
61	1.8	3.7	4.4
62	1.8	3.5	4.4
63	1.9	3	3.1
64	2	2.9	3.3
65	2	3.6	4
66	1.9	3.1	3.8
67	2	3.3	4.1
68	2	3.3	4.3
69	2	3	4.1
70	2	3.5	4.2
71	2	3.2	3.5
72	2.1	3.1	3.7
73	1.8	3.1	3.7
74	1.8	3	3.5
75	1.9	3	3.5
76	1.9	3.3	3.8
77	2	3.2	3.9
78	2.1	3.1	3.6
79	1.8	2.7	2.9
80	1.8	3.1	3.6

Post Number	Surface kcpm	1.5' kcpm	3.0' kcpm
81	1.8	3.1	3.7
82	1.9	2.7	3.1
83	1.8	2.6	3.6
84	1.9	2.2	2.6
85	1.9	2.1	2.2
86	2	2.1	2.3
87	1.8	2.2	2.7
88	2	2.6	3
89	2	2.8	3.6
90	1.9	2.4	3.2
91	1.8	2.6	3.6
92	1.8	2.4	3.1
93	1.9	2.2	2.7
94	1.8	2.1	3



Radiation Survey Form

Location/ Project ID: Lower Wacker - fence replacement

Date: 10/30, 31/2017, 11/1, 2, 7, 8/17

Technician: JUSTIN MAXWELL

Inst Model: Ludlum 2221

Serial No.: 126497 Probe: 171991

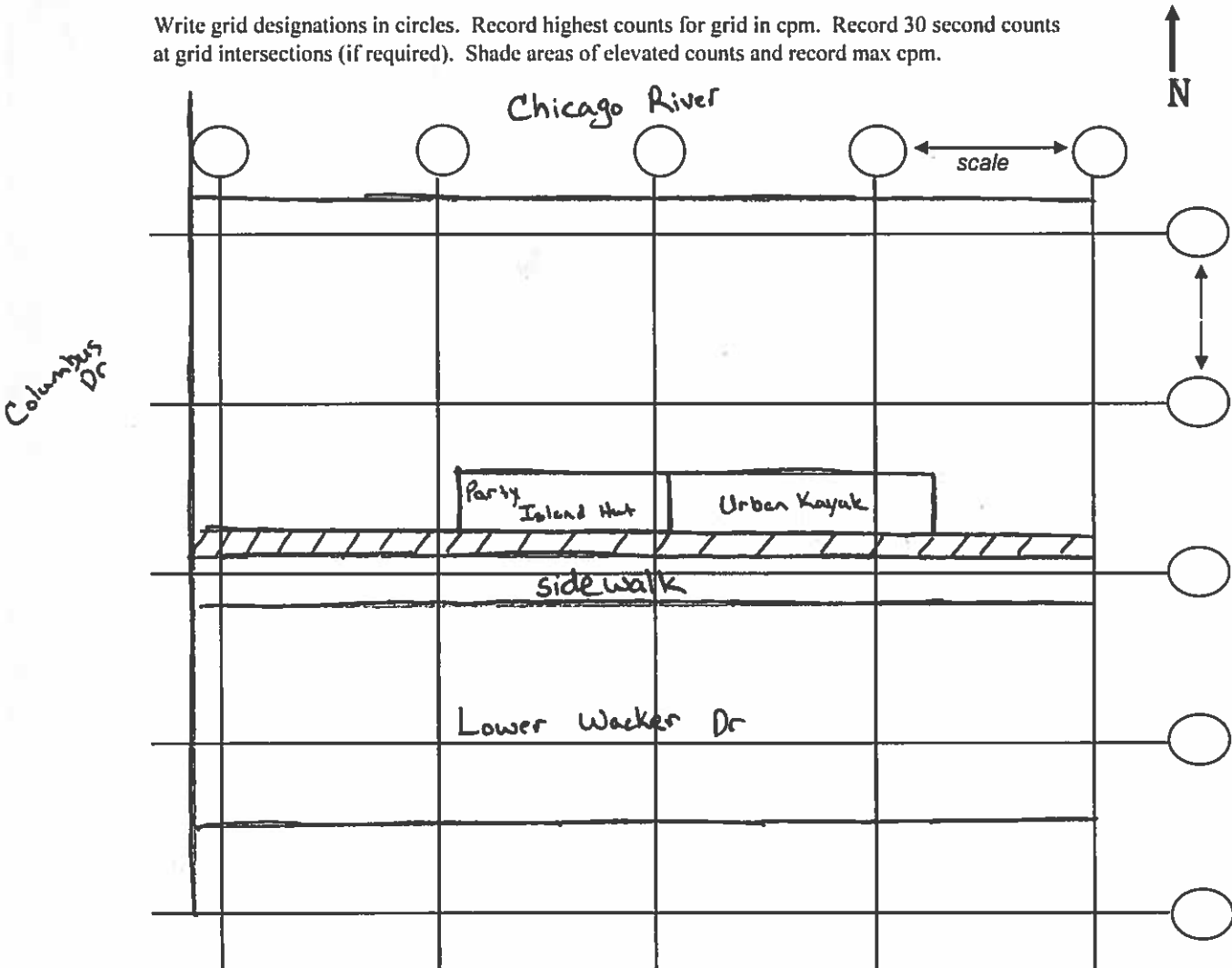
Probe Type: 1"x1" NaI 2"x2" NaI
 Shielded Not Shielded

Lift Elevation: 0-3.5'

Background 1942 cpm

Action Level: 6542 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.



* Post removal and hole digging (for new posts) are provided on attachments

See attached data "New Fence Post Installation" and "Old Fence Post Removal" GAH 11/22/17

= Location of New Fence GAH 11/22/17

