



November 2, 2022

978347

Angel Camacho
SET Environmental
450 Sumac Road
Wheeling, Illinois 60090

RE: Thorium Monitoring: 425 - 473 E. Lower Wacker Drive (Urban Kayaks)
CDOT Permit: 1687291

Dear Mr. Camacho:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during the excavation for both sanitary sewer and water service installation at 425 – 473 E. Lower Wacker Dr. The monitoring was performed by Jeremy Kieser and Mark Dewald, SAHCI Health Physicists, on September 29, 2022, through October 25, 2022. All activities were conducted under the guidance of document *SET General Procedure for Thorium Monitoring*.

Note: the initial excavation on this project started in November 2021 but had to be redesigned due to underground obstructions.

Instrumentation

Surface gamma scans were performed using Ludlum Model 2221 Scaler / Ratemeters (serial nos. 132844 and 99147) with attached Ludlum Model 44-10 2"x2" NaI Detectors (w/ 6" collimated lead shields). The instruments 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 132844 is 8,083 counts per minute (cpm) and 6,936 cpm for instrument 99147.

The average background count rates for this location ranged from 1,324 to 1,847 cpm.

Soil Gamma Scans

Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeters described above. Survey data was collected by entering the excavations and recording the highest count rate for the floor and walls for each 18-inch lift to an excavation depth of 4 feet below ground surface. Material excavated from 4 feet deep to 7.5 feet deep was excavated and surveyed as it was stockpiled at the surface, prior to loading into a truck.

The maximum gamma count rate for each lift was recorded on the attached Radiation Survey Form. The count rates in the utility excavations ranged from 1,800 cpm to 4,000

cpm. No count rates were found at any time that exceeded the threshold limits of 8,083 cpm and 6,936 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.

A handwritten signature in black ink, appearing to read "Glenn Huber", written in a cursive style.

Glenn Huber, CHP
President

NO.	DATE	DESCRIPTION
1	08/12/20	DCG REVIEW
2	08/20/20	PRELIM REVISIONS
3	09/01/20	PRELIM REVISIONS
4	09/08/20	PRELIM REVISIONS
5	09/15/20	PRELIM REVISIONS
6	09/22/20	PRELIM REVISIONS
7	09/29/20	PRELIM REVISIONS
8	10/06/20	PRELIM REVISIONS
9	10/13/20	PRELIM REVISIONS
10	10/20/20	DCG RESUBMITTAL
11	10/27/20	DCG RESUBMITTAL
12	11/03/20	ISSUED FOR BID

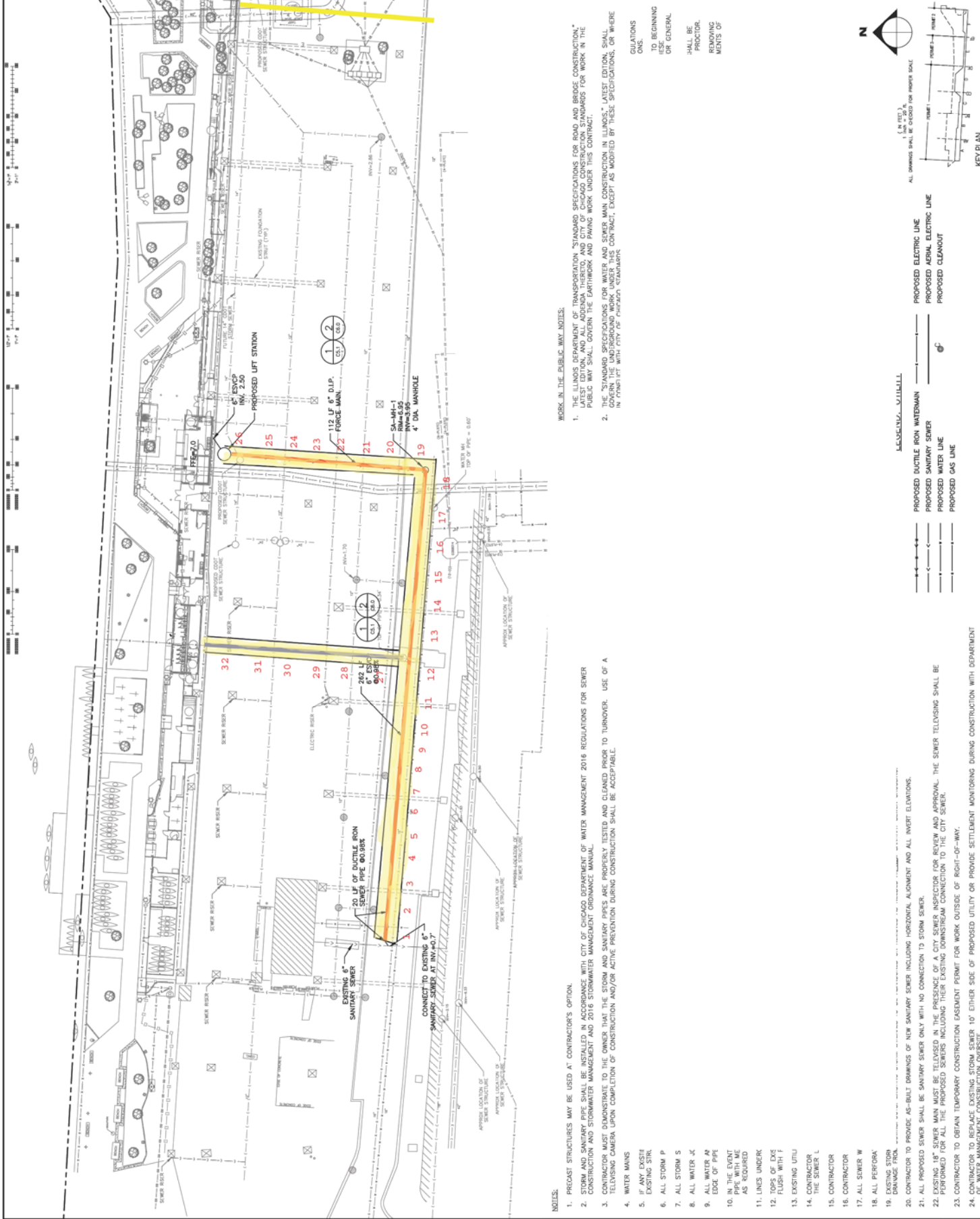
PROJ. # 204

DRAWN BY: [Name]
 CHECKED BY: [Name]
 SCALE: AS SHOWN
 DATE: 08/12/20
 PROJECT: [Name]
 SHEET: [Name]
 CONTRACTOR: [Name]
 PROJECT LOCATION: [Name]



EFP-115109

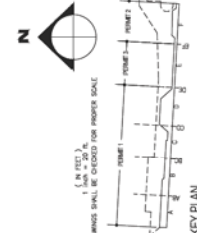
SHEET TITLE
 UTILITY PLAN
 SHEET NO.
C5.0



- WORK IN THE PUBLIC WKS. NOTES:**
- THE ILLINOIS DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," LATEST EDITION, SHALL BE USED IN ACCORDANCE WITH CITY OF CHICAGO DEPARTMENT OF WATER MANAGEMENT 2016 REGULATIONS FOR SEWER CONSTRUCTION AND STORMWATER MANAGEMENT AND 2016 STORMWATER MANAGEMENT ORDINANCE MANUAL.
 - CONTRACTORS MUST DEMONSTRATE TO THE OWNER THAT THE SYSTEM AND SANITARY SEWER ARE PROPERLY TESTED AND CLEANED PRIOR TO TURNOVER. USE OF A TELEVISION CAMERA UPON COMPLETION OF CONSTRUCTION AND/OR ACTIVE PREVENTION DURING CONSTRUCTION SHALL BE ACCEPTABLE.

- NOTES:**
- PRECAST STRUCTURES MAY BE USED AT CONTRACTOR'S OPTION.
 - SEWER AND SANITARY PIPE SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF CHICAGO DEPARTMENT OF WATER MANAGEMENT 2016 REGULATIONS FOR SEWER CONSTRUCTION AND STORMWATER MANAGEMENT AND 2016 STORMWATER MANAGEMENT ORDINANCE MANUAL.
 - CONTRACTORS MUST DEMONSTRATE TO THE OWNER THAT THE SYSTEM AND SANITARY SEWER ARE PROPERLY TESTED AND CLEANED PRIOR TO TURNOVER. USE OF A TELEVISION CAMERA UPON COMPLETION OF CONSTRUCTION AND/OR ACTIVE PREVENTION DURING CONSTRUCTION SHALL BE ACCEPTABLE.
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 - CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS OF NEW SANITARY SEWER INCLUDING HORIZONTAL ALIGNMENT AND ALL INVERT ELEVATIONS.
 - ALL PROPOSED SEWER SHALL BE SANITARY SEWER ONLY WITH NO CONNECTION TO STORM SEWER.
 - EXISTING 18" SEWER MAIN MUST BE TELEVIEWED IN THE PRESENCE OF A CITY SEWER INSPECTOR FOR REVIEW AND APPROVAL. THE SEWER TELEVIEWING SHALL BE PERFORMED FOR ALL THE PROPOSED SEWERS INCLUDING THEIR EXISTING DOWNSTREAM CONNECTION TO THE CITY SEWER.
 - CONTRACTOR TO OBTAIN TEMPORARY CONSTRUCTION EASEMENT PERMIT FOR WORK OUTSIDE OF RIGHT-OF-WAY.
 - CONTRACTORS TO BEWARE EXISTING STORM SEWER 10" EITHER SIDE OF PROPOSED UTILITY OR PROVIDE SETTLEMENT MONITORING DURING CONSTRUCTION WITH DEPARTMENT OF WATER MANAGEMENT CONSTRUCTION OVERSITE.

- QUANTITIES TO BEGINNING THESE PROCTOR REMOVING COMMENTS OF OR GENERAL SHALL BE



- LEGEND - UTILITIES**
- PROPOSED DUCTILE IRON WATERMAIN
 - PROPOSED SANITARY SEWER
 - PROPOSED WATER LINE
 - PROPOSED GAS LINE
 - PROPOSED ELECTRIC LINE
 - PROPOSED AERIAL ELECTRIC LINE
 - PROPOSED CLEANOUT

CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS OF NEW SANITARY SEWER INCLUDING HORIZONTAL ALIGNMENT AND ALL INVERT ELEVATIONS.

Radiation Survey Form

Urban Kayaks Water/Sewer Line Installation Thorium Monitoring						
	0-18"	18-36"	36-54"	54-72"	72-90"	90-108"
Area 1	1500	1500	2400	1600	2100	2200
Area 2	1500	3000	2900	2200	2300	2200
Area 3	1500	2200	2400	2400	2000	2100
Area 4	1500	2300	4000	2300	2200	NA
Area 5	1500	1700	1800	3800	NA	NA
Area 6	1500	2100	2400	2200	NA	NA
Area 7	1500	2100	3100	2300	NA	NA
Area 8	1500	2300	2300	3000	NA	NA
Area 9	1500	2700	2700	2300	NA	NA
Area 10	1400	1600	2100	2900	NA	NA
Area 11	1700	2100	2200	2600	NA	NA
Area 12	1600	2000	2500	2800	NA	NA
Area 13	1600	2100	2100	2700	NA	NA
Area 14	1400	1800	2400	2600	NA	NA
Area 15	1500	1900	2600	2500	NA	NA
Area 16	1500	1800	2500	2700	NA	NA
Area 17	1600	1800	2300	2900	NA	NA
Area 18	1300	1600	2300	2400	NA	NA
Area 19	1600	1900	2100	3000	NA	NA
Area 20	1500	2500	3000	2800	3400	NA
Area 21	1500	2600	2900	3000	3500	NA
Area 22	1400	2600	2900	3200	3300	NA
Area 23	1500	2300	3400	3100	3400	NA
Area 24	1300	2400	3100	2800	3400	NA
Area 25	1400	2100	3200	2900	3700	NA
Area 26	1400	2600	3200	2700	2900	NA
Area 27	1600	2300	3200	2800	2500	3100
Area 28	1500	2300	3500	2800	2700	3300
Area 29	1500	2200	3300	3100	2800	3100
Area 30	1500	2500	3500	3500	2800	3100
Area 31	1800	3200	2800	2900	3100	3400
Area 32	2200	2600	2800	2900	3200	3100
Areas 1-9: SN 132844, Bknd 1544, Action Lvl 8083 (Jeremy Kieser)						
Areas 10-30: SN 99147, Bknd 1847, Action Lvl 6936 (Mark Dewald)						
Areas 31-32: SN 132844, Bknd 1324, Action Lvl 8083 (Jeremy Kieser)						

* all results in counts per minute (cpm)