

MEMORANDUM

Date: April 17, 2025

To: Drew Nichols, Haley and Aldrich

From: Dustin G. Miller, CHP and Jason M. Brydges, PE

Subject: Gamma Radiation Survey Plan – Steelfields Area IV – TENORM Assessment

This document represents the first step in NYSDEC's Program Policy, DMM-5 (Management of Soils Contaminated with Technologically Enhanced Naturally Occurring Radioactive Materials – TENORM) procedure for verifying whether elevated radioactivity is present in the slag-like materials being handled at the Haley and Aldrich site off Tift Street in Buffalo (i.e., Steelfields Area IV – **See Attached Location Map and Site Plan**). Accordingly, a preliminary gamma radiation survey is required to determine if TENORM is present in the slag-like materials encountered at Steelfields Area IV.

This survey plan describes the process through which an initial radiological screening is performed to identify the presence and concentration of radium-226. Once this plan is approved by the NYSDEC, the survey will be conducted and submitted to the assigned environmental radiation specialist (ERS) and DEC PM for review, as applicable. These survey results allow DEC to determine the necessity of a TENORM Management Plan and physical/radiological properties of the material (i.e., does the material contain TENORM, and if so, what are management requirements).

Under the management and direction of TerranearPMC and their USNRC nationwide D&D license with reciprocity in New York State, the following process will be conducted at the subject site by appropriately trained and experienced BE3 HP Techs (health physics technicians). The TPMC/BE3 team is cognizant of the program policy DMM-5 and has generated the following process per Attachment A - Radiological Screening Survey Criteria and established company Standard Operating Procedures (SOPs) for Radiological Surveys:

1. **PRE-MOBILIZATION:** The meter and probe system used for the survey will be a calibrated pair of Ludlum 2221 and 44-10, respectively, that has been source checked using a 1 μ Ci Cs-137 button source at BE3 offices prior to mobilization to the site. Source check will include, at a minimum, 3 one-minute counts with the meter/probe system and button source in identical geometry for all counts. This information will be documented in HP Tech's daily field report (DFR).
2. **BACKGROUND:** An appropriate background area has been proposed on the **attached** site plan that is representative of and distinct from the material/area to be surveyed. This area is believed to possess natural radiological background and will require DEC approval prior to or during mobilization. Radiation background will be established at the approved location using the previously described system and performing a minimum of 3 one-minute counts that are averaged to obtain a single gamma radiation background value in counts per minute (cpm).

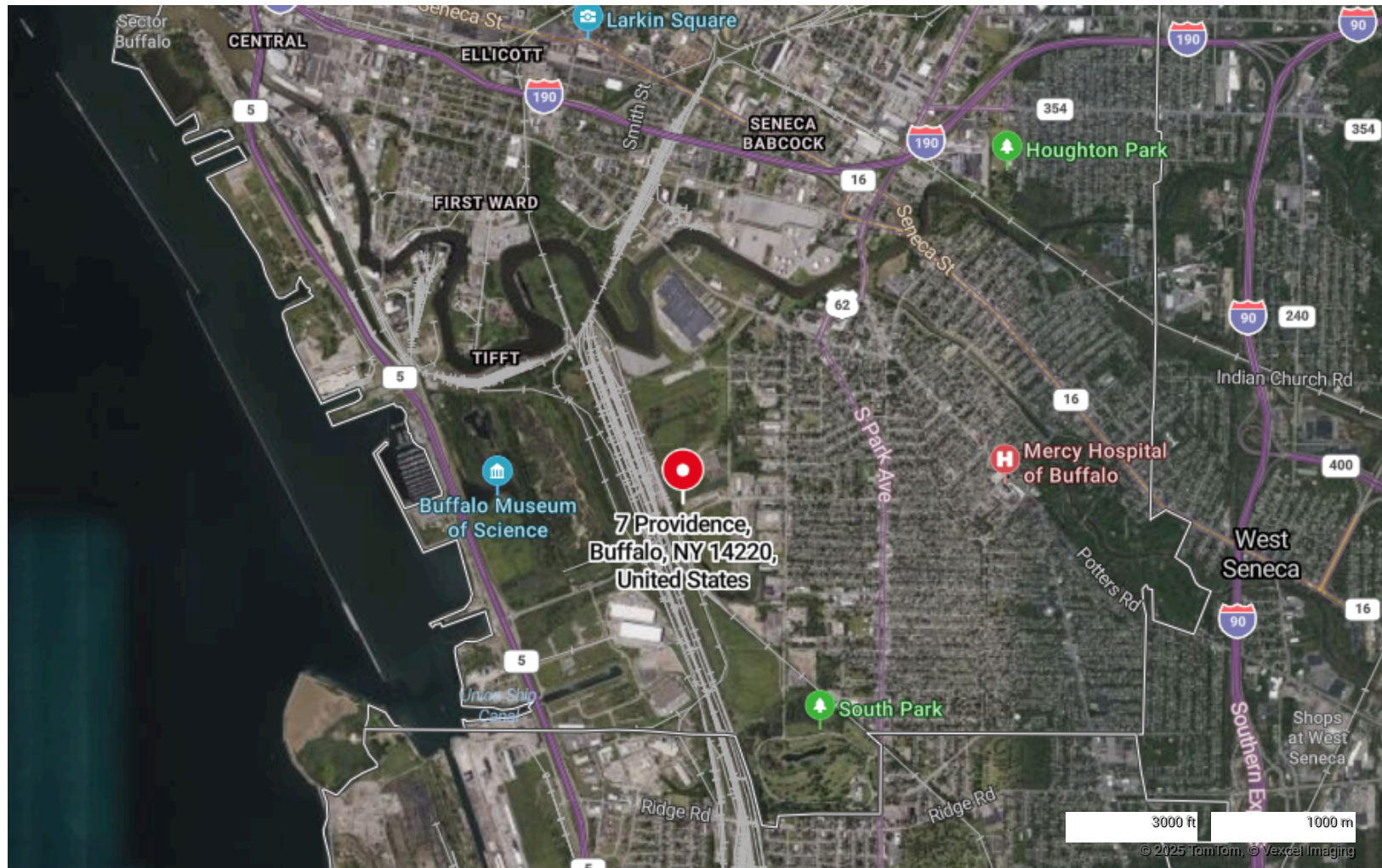
3. WALKOVER: The entire windrow of suspect material and immediate surrounding area will be surveyed with the instrumentation previously described using multiple passes at approximately 1 meter transects with the probe positioned approximately 3 inches over the material. HP Tech will walk at a velocity of approximately 1 meter per second swinging the probe over all surfaces in a serpentine pattern. Unless directed otherwise, radiation readings in cpm will be visually and audibly monitored without the use of global positioning system (GPS), which can be employed as requested/needed. It should be noted that if elevated radioactive material is encountered during the walkover survey, then the HP tech performing the survey will 'frisk' any PPE or body parts (e.g., boots, hands, feet, booties, etc.) of individuals potentially exposed to radioactive contamination. This screening or frisking will be performed using a Ludlum 43-93 alpha/beta probe or similar and documented on the survey form. Any material found to be impacted will be delineated in the field for potential future characterization and disposal. This frisking will ensure that if any radioactive contamination exists, it will not be migrated from the work site.
4. DOCUMENTATION: Various radiation readings will be recorded by the HP tech in the DFR noting both commonalities and anomalies in the observed values (e.g., counts per minute). If no readings from the instrumentation exceed 1.5 times the background radiation previously established in #2, then no further monitoring or other actions related to management of the suspect material is warranted with respect to radiological characterization.
 - Although not anticipated for this project, it should be noted that exceptional circumstances might exist for additional monitoring should the material be in an area of known TENORM, if slag-like material is continually generated, or it is determined that suspect material could be buried at a depth that requires additional stockpile redistribution. If these circumstances present themselves, then it is recommended that additional screening be performed during the subsequent management of material to its final placement.
5. EXCEEDANCES: If readings from the instrumentation exceed 1.5 times the background radiation previously established in #2, then the elevated radiation area (whether widespread or discreet) is identified in an obvious manner using pin flags, marking paint, etc. At a minimum to document the exceedance, 3 one-minute counts are performed within the radiation area and recorded in the HP Tech's DFR along with corresponding photographs.
6. SAMPLING: The material identified as TENORM in the previous step is sampled a minimum of 3 times in a representative and composite manner and packaged per a DOH ELAP certified laboratory's shipping protocol (e.g., sample jars, preservation, chain of custody, etc.). At least one of these composite samples is collected from the area of highest radiation readings. All samples are analyzed for gamma spectroscopy and alpha spectroscopy (i.e., isotopic uranium and thorium), at a minimum, using the laboratory's NORM library of isotopes. All sampling information is documented in HP Tech's DFR.
7. TENORM ASSESSMENT: Once the laboratory data is received on the sampled TENORM, a correlation is made between the field radiation reading and the laboratory isotopic concentrations. The correlation is established in consultation with the DEC ERS, and decisions are made regarding the management of the TENORM based upon 5 and 15 pCi/g as published in EPA's UMTRA (Uranium Mill Tailings Radiation Control Act).
8. CLOSEOUT REPORTING: the primary documentation generated due to this radiological survey plan includes HP Tech's DFR, BE3's SOP radiation survey form (**attached**), a

photolog of the field activities, and a cover letter summarizing the process and communications between the DEC, client, and BE3. The closeout report will address all information produced from pre-mobilization activities through survey activities to sampling and analysis of slag-like material that exhibited field readings of 1.5 times background or greater, as applicable.

- Note: documentation regarding the consultation with the DEC ERS regarding the final assessment and management of documented TENORM is not the scope of this survey plan, and that information will be primarily documented, as applicable, in a subsequent TENORM Management Plan.

7 Providence, Buffalo, NY 14220, United States

Approximate Location Steelfields Area IV - Haley and Aldrich



GIS FILE PATH: \\haleyaldrich.com\share\roc_common\1129356 - HydroAir (2017-)\GLOBAL\GIS\Maps\2023_11\129356_015_0002_AREAS_REQUIRING_1FT_CLEAN_COVER.mxd — USER: anichols — LAST SAVED: 11/16/2023 12:21:33 PM



LEGEND

- MONITORING WELL, HYDRO-AIR PROPERTY
- ORC WELL, HYDRO-AIR PROPERTY
- APPROXIMATE TAR AND BLUE SOIL/FILL EXCAVATION LIMITS
- FENCE
- RAILROAD
- CURRENT HYDRO-AIR (STEELFIELDS AREA IV) BCP SITE BOUNDARY
- STEELFIELDS AREA III
- PLACEMENT OF 1-FT COVER AS PART OF CMWP
- REMEDIAL COVER EXISTS, NO ADDITIONAL COVER PLACEMENT AS PART OF CMWP
- APPROXIMATE AREA BURDENED BY NIMO AND BRPRR EASEMENTS, NO REMEDIAL COVER REQUIRED BY NYSDEC
- Proposed representative background areas to be approved by DEC

NOTES

- ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
- TAX PARCEL DATA SOURCE: ERIE COUNTY
- AERIAL IMAGERY SOURCE: NEARMAP, 2 APRIL 2023



0 120 240
SCALE IN FEET

HALEY
ALDRICH

HYDRO-AIR COMPONENTS, INC.
100 RITTLING BOULEVARD
BUFFALO, NEW YORK

CORRECTIVE MEASURES
SITE PLAN

NOVEMBER 2023

FIGURE 2



RADIOLOGICAL SURVEY FORM

Area/Item Surveyed			Survey #	Date
Type of Survey			Project Name and #	
Meter Model	Detector Model	Cal. Due Date	Efficiency	
Serial #	Serial #	Bkgd. (cpm)	Direct/Smear/Wipe/Dose	
<u>ILLUSTRATION/COMMENTS:</u>				
<u>RCT Name and Signature</u>			<u>Date</u>	
<u>Supervisor Name and Signature</u>			<u>Date</u>	