

**Lindsay Light Field Report
Gamma Survey and Sample Collection
U.S. EPA Region 5 Emergency Response**

Site Name: 161 E Grand Ave
Operable Unit: Lindsay Light II Site OU17
Date of Field Work: June 14, 2021
EPA/START Personnel: Adam Peterca (START / Tetra Tech)
Kirsten Myles (START / Tetra Tech)
Verneta Simon (USEPA)
Eugene Jablonowski (USEPA)

Summary of Environmental Conditions

- During historical construction/excavation activities at the 161 E Grand Ave property radioactive contamination in soil/fill has been identified. Current utility installation plans required excavation of soil/fill in areas where radioactive contamination was suspected to be present, but had not been remediated during previous clean-up efforts. Due to the history of contaminated material in the vicinity of the utility excavation and the relatively small size of the excavation EPA and START were present during all excavation activities.
- Excavation was conducted by Electric Conduit Construction (ECC). Radiation monitoring during excavation was conducted by Stan A. Huber Consultants, Inc. (SAHCI).
- Elevated levels of gamma radiation were observed by SAHCI within the excavation. Material with elevated levels of gamma radiation was segregated from other material and placed in designated containers for future disposal.
- Excavation activities terminated at the planned excavation extent based on the requirements for utility installation. When excavation was completed, an area of material with elevated gamma radiation remained in place along the northern wall of the excavated trench.

Description of EPA/START Activities

- Verneta Simon (USEPA), Adam Peterca (START / Tetra Tech), and Kirsten Myles (START / Tetra Tech) arrived at the excavation site at approximately 08:35 on June 14, 2021. Kirsten Myles left the site at approximately 09:40 to respond to an unrelated emergency response. Gene Jablonowski (USEPA) arrived at the excavation site at approximately 10:00.
- The instrument used by Tetra Tech for gamma surveying was a Ludlum Model 2221 scaler/ratemeter (Serial Number 106678) with a Ludlum 44-10 sodium iodide detector (Serial Number PR292700) with a 6-inch lead shield, calibrated on April 21, 2021 with a 7.1 picocurie per gram (pCi/g) cutoff of 5,828 counts per minute (cpm).

- Tetra Tech completed a post-excavation walkover gamma survey of the excavated area at approximately 12:00. The excavated area was considered one survey unit.
 - Gamma readings of the floor of the survey unit ranged from 2,009 to 5,256 cpm. Gamma readings of the walls of the survey unit ranged from 1,612 to 12,000 cpm. The area of the excavation wall with elevated gamma readings above the instrument-specific cutoff level was a known area of contamination that was intentionally left in place. A soil sample was collected from this portion of the excavation wall to document the gamma radiation levels left in place.
- Tetra Tech collected the following samples from the excavation:
 - A 5-point composite soil sample from the floor of the survey unit for gamma spectroscopy analysis (sample field ID LL-210614-F) and a corresponding soil sample for dry weight moisture analysis.
 - A 5-point composite soil sample from the area of the excavation wall that exceeded the instrument-specific cutoff level for gamma spectroscopy analysis (sample field ID LL-210614-W) and a corresponding soil sample for dry weight moisture analysis.

Summary of Sample Results

Samples were sent to ALS Environmental (ALS) in Fort Collins, Colorado for gamma spectroscopy analysis. The results are summarized in the table below.

Table 1: Verification Sampling Analytical Results

Sample Field ID	Sample Lab ID	Sample Ra-228 (pCi/g)	Sample Ra-226 (pCi/g)	Ra-228 plus Ra-226 (pCi/g)
LL-210614-F	2106442-1	0.950	0.518	1.468
LL-210614-W	2106442-2	21.000	2.240	23.240

Notes:

DUP – Duplicate
 ID – Identification
 pCi/g – Picocuries per gram

Ra – Radium

Attachments

1. ALS report of gamma spectroscopy results for the samples collected by EPA.

Prepared by:

Name: Adam Peterca, START / Tetra Tech

Signature: 

Date: February 3, 2022

Reviewed by:

Name: Eugene Jablonowski, Health Physicist, U.S. EPA Region 5

Signature: EUGENE JABLONOWSKI 
Digitally signed by EUGENE JABLONOWSKI
Date: 2022.02.24 08:39:57 -06'00'

Date: February 24, 2022